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FORENSIC ACCOUNTING AND FRAUD DETECTION AND PREVENTION IN THE NIGERIAN PUBLIC SECTOR

A B S T R A C T

This paper is aimed at empirically evaluating the relationship between forensic Accounting and fraud detection and prevention in the Nigerian public sector. The study used a survey design utilizing a sample size of one fifty (50) respondents which consist of auditors and accountants in ten (10) ministries selected from FCT Abuja in Nigeria. Analysis of variance, (ANOVA) used to test the hypotheses at 5% significant level. Findings of the study revealed that the use of forensic accounting in the Nigerian public sector is effective in detecting fraud; there is also a significant correlation between forensic accounting and the litigation support service in Nigerian courts. Similarly, use of forensic accounting in the public sector is also effective in preventing fraud. The study therefore, recommends that the public sector should install an uninterrupted enhancement in the internal control system and introduce effective and efficient internal check and monitoring, they should adopt an effective accounting system capable of holding officers accountable for their actions. Forensic accountant should be made to undergo appropriate training on forensic accounting skills. Furthermore, officers in the public sector should embrace integrity, accountability, fairness, objectivity, as an essential moral duty to reduce the rate of fraudulent practices in Nigeria.

1. INTRODUCTION

The menace of fraud, Corruption, and other financial crimes has a serious negative effect on the economic development which makes it difficult for a country to provide essential amenities to its citizens. In Nigeria, the evil of fraud have reached alarming rate and persistent resources mismanagement have become the order of the day in the Nigerian public sector (Nonye & Okoli 2015). According to Claire and Jude (2016), financial crime has become invasive and the possibility of corporate fraud happening has also turn out to be more severe. High level of financial abuse has been obstructing tax collection and other sources of income generation making the enforcement of Law difficult and depresses foreign investment. The large spread of fraud in public sector has made the traditional auditing and investigation unsuccessful and inefficient in fraud detection. Eiya and Otalor (2013) assert that fraud is a theme that has catches the attention worldwide.

Enofe, Ochuwa, Henrietta and Nosareimen (2017), maintains that the increase gesture of fraud in the Nigerian public sector is causing a lot of confusion. This is because fraud has entered into almost every aspect of the Nigerian public sector. Modugu and Anyaduba (2013) affirm that the inability of auditor to detect, prevent, or reduce modern frauds such as money laundering security fraud, contract disparate, embezzlement and other financial crimes in the public sector has put a lot of pressure on the professional accountant and legal practitioners in finding better ways of revealing fraud in public sector. In addition, the priority of the Nigerian president (Buhari) led administration since 2015 was the fight against corruption so as to drastically reduce the cases of financial malpractice. Many arrests related to corruption cases have been made; however, the number of prosecution cannot be seen in the same manner. The recent major financial scandals that happened in year 2020 are the one that occurred in Niger Delta Development Commission (NDDC), over N2.6 billion school feeding scandals in Federal Government schools, Ministry of education scandal and the one done by the Economic and Financial Crimes Commission (EFCC) chairman himself which resulted in kicking him out of the office (The Punch, 2020). It has thus, become relevant to fortify the practice forensic accounting which is one of the efforts that can be used for the detection and prevention in public sector. This is due to the fact that public sector auditors may not have the essential knowledge required in detecting, preventing or reducing fraud in Nigeria.

Going by the aforementioned problems, this paper therefore, seeks to assess the role of forensic accounting in fraud detection and prevention in Nigeria with focus on the public sector. This paper is classified into four sections. The first part is the introduction and the objective of the study. The second section deals with the conceptual aspect of fraud and forensic accounting in which literature and Previous studies of different researchers were reviewed. The third part described the methodology for the study while the fourth section presets data analysis and interpretation as well as the results of the study findings. The fifth section deals with the conclusion and recommendations.

1.1 objective of the study

The main objective of this study is to examine the relationship between forensic Accounting and fraud detection and prevention in the Nigerian public sector. The specific objectives are to:

i. Examine the effect of the use of forensic accounting service in detecting fraud in the Nigerian public sector.
ii. Examine the relationship between forensic accounting and litigation support service in the Nigerian courts.
iii. Examine the effect of the use of forensic accounting service in preventing fraud in the Nigerian public sector.

1.2 The research questions

The following are the research questions formulated to guide the study:

i. What is the effect of the use of forensic accounting service in detecting fraud in the Nigerian public sector?
ii. Does significant relationship exist between forensic accounting and litigation support service in the Nigerian courts?
iii. What is the effect of forensic accounting service in preventing fraud in the Nigerian public sector?

1.3 Hypotheses of the Study

Ho1: Use of forensic accounting service in public sector is not effective in detecting fraud Public Sector.
Ho2: There is no significant correlation between forensic accounting and legal action support service in Nigerian courts.
Ho3: Use of forensic accounting service is not effective in preventing fraud in Public Sector.

2. LITERATURE REVIEW

2.1 The Concept of Forensic Accounting

Forensic accounting is the use of laws of nature to the laws of man. This is normally carried out by forensic scientists as interpreters and examiners of facts and evidence in legal case that also gives expert opinion concerning their findings in a court of law. Fyneface and Oseiweh (2017) affirm that forensic accounting is essential investigative device for the detection of fraud. Mukoro, Yamusa and Faboyede (2013) opined that forensic accounting helps in introducing effective internal control and fraud prevention in an organization. He also described forensic accounting as the mixture of auditing and investigation skills. It is therefore, the process of summarizing, interpreting and presenting complicated financial issues, clearly, and factually in a court of law as an expert view and witness. Al Samara, AL Afeef and Al Ali (2017) define forensic accounting as the use of criminal method and incorporation of investigative accounting activities and law processes to investigate and detect financial crimes and other economic malpractices. Zysma (2004) views forensic accounting as the combination of auditing, accounting, and investigative skills. Forensic accounting is appropriate for legal matter, offering the highest rate of assurance (Blessing, 2015). Abdullahi and Mansor (2015), also described forensic accounting as the application of accounting and investigative skills to a level acceptable by the competent court to handle issues in contention in the context of both criminal and civil litigation. Fraud can be a theme to forensic accounting because fraud can include the illegal property acquisition, concealment or misrepresentation. Forensic accounting knowledge can assist the accountant in preparing valid evidence from the previous records and financial statement against the prosecutors in the court of law (Nekede & Oko (2013). Forensic accounting has to a great extent become a field of interest to accountants and auditors. A study carried out by Imoniana, Antunes and Formigoni (2018) revealed that 42 % of organizations have opined the call for of forensic accountants due to the rapid increase in fraudulent activities and related economic crimes. According to Popoola, Che-Ahmad and Samsudin (2014), forensic accountants are trained to dig beyond the figures and deal with the realities of circumstances. He also noted that forensic accounting include: investigating, examining financial evidence, developing computerized applications to support in the analysis and presentation of financial evidence and communicating their finding in form of reports, displays and collect documents, and help in legal proceedings, including attesting in court, as expert witness and setting up visual aids to in supporting trial evidence.

Okafor and Agbiogwu (2016) itemize the classification of fraud based on the modes of perpetration which include the repression, outstripped, and embezzlement, tampering with reserves, fake payment, theft defalcation, insider abuses and forgeries, unauthorized lending, deceitful substitutions, lending money to ghost borrowers, kite flying and cross firing, fictitious contracts deceptive use of firms documents and the rest. According to Othman, Aris, Mardziyah, Zainan and Amin (2015), there are two types of fraud being committed in an organisation. The first one is the use of business resources for Personal gains while the second one is presenting of false financial statement. Research has revealed that the rate of losses in public sector due to fraudulent activities of political office holders and employees is far higher than that recorded as a result of citizen's negligence. About 60 % of employees are disposed to engage in fraud while 80 % of political office holders might be inclined to use their power to and commit fraud in a suitable condition (Ogundana, Okere, Ogunleye & Oladapo, 2018). Obviously, the extensive spread of fraud in the Nigeria public sector has turned conventional auditing and investigation not effective and appropriate in detecting and preventing of fraud. In 2009, researcher observed that level fraud and other economic crimes has rapidly increased to about 70 % which have intimidated national development and turned conventional auditors weak which necessitates the emergence of forensic accounting, an area that is meant to develop and improve techniques and skills for tackling these challenges with its accountant who are experts in detecting, preventing of fraud and presenting litigation support service in Nigerian Court (Umar, Samsudin & Mohamed, 2017).

2.2 Description of the Nigerian Public Sector

Public sectors in the words of Adebisi and Gbegi (2015) are all organizations that are not established or operated by private body, as it is being run, financed as well as managed by the government on behalf of the general public. Nigerian Public Sector is being governed by the Federal, State and Local Governments with the guidance of pronouncements and constitutions. Enofe, Ekpulu and Ajala (2015) highlights the Public sector regulatory framework which includes the constitution of the Federal Republic of Nigeria 1999, the Finance control and management Act of 1958, the 1956 Audit Ordinance and the Financial Regulation as well as Revenue Allocation Laws. Looking at the endless numerous government policies, it is sad to note that frauds of diverse forms are widespread in different public sectors. It is pertinent to note that most of the fraudulent acts and corruptions are being detected. However, the need of the government is how to prevent this stigma. Fraud prevention can save government from enormous investigation cost. Modugu and Anyaduba (2013), asserted that an environment that succeeded in preventing fraud, can save huge investigation costs.

2.3 The Concept of Fraud

Fraud refers to human behaviour that entails deceit and strong desire and for trust violating. Fraud can be termed as non-violent crime and unlawful activity committed with the desire of getting wealth illegally either individually or in group in a planned manner. This act violates the existing government legislation and its economic activities and administration. Enofe, Okpako and Atube (2013) also see fraud as an organised complicated process generally undertaken by a person or a group with the full desire of cheating an individual or organisation to get ill-gotten benefits. Kasum (2009) affirm that forensic accountants need exceptional skills, professional knowledge and training that is beyond acquired academic degree. They also noted that for forensic accountants to be effective they must attain relevant level of skills and knowledge.

2.4 Forensic Accountant and Fraud Detection

Professional forensic accountant as an investigator is seen as he who is expert in fraud detection, especially in accurately documenting the kind of evidence needed for a successful criminal prosecution. In addition, he should be able to work in challenging regulatory and litigation atmosphere (Claire & Jude, 2016). Forensic Accountant is thus expected to work with reasonable accuracy and be able to reconstruct the destroyed, missing or deceptive accounting records. Meanwhile, he should be effective at economic and financial loss, social harm and good in estimating damage as well as being familiar with the assumptions, opportunity cost situations, algorithm and econometric models computations (Owojori & Asaolu, 2009). He should also be able to quantify and measure fictitious assets such as loss of reputation and goodwill. As an evaluator, forensic accountants should also be capable of reliably expressing expert opinion on issues of business value in line with the generally accepted presumption. Therefore, forensic accountant should be effective in evaluating the historical and predicted level of risks and returns of any going concern all financial transactions connecting to contract, assets, valuation of asset and liabilities, equities, property taxes etc (Mukorol, Ogijo, Yamusa and Faboyede, 2013). Obviously, conventional auditors may not adequately present a good witness in a court, and are sometime more of hindrance than help for law enforcement. Therefore, in an event of suspected fraud, forensic accountants are more relevant and helpful in detecting fraud. For that reason, forensic accountant should possess special skills and training that can equip him in playing his roles as expert witness and fraud investigator.

2.5 Forensic Accountant and Fraud Prevention

Fraud Prevention entails formation of a culture of honesty, sincerity and assistance to ensure elimination or drastic reduction in the level of fraud occurrence. Enofe, Omagbon and Ehigiator (2015) noted that one major way to successful fraud prevention is to focus on organization’s traditions and adopt strategies to make it fraud free or low fraud environment. This can be accomplished through identifying the root causes, blocking the loopholes identifying the lacuna being exploited by the perpetrators and above all workers’ welfare must be taken care of properly. Forensic accountant needs specialist and professional skills to be effective in the performance of his duties. Olajide (2014) affirmed that for a forensic accountant to effectively prevent fraud, he should possess knowledge, skills and competencies in the following areas:

i. Accounting, auditing and investigation skills

ii. Criminology particularly leaning to the nature, scope, dynamics of fraud and financial crimes; the legal, regulatory, professional environment and technical issues.

iii. Forensic and litigation consultative services, including research and analysis validation of losses, liabilities and damage investigation as well as conflict resolution.

2.6 Theoretical Framework

The fundamental theory that is established in this study is “white collar crime theory’ invented by Sutherland (1949) as cited in Gbegi and Okoye (2013). The term white-collar crime was dated back to 1939. Sutherland (1949) was the first to use the term. The term attributes different characteristics and aims of classic street criminals. Sutherland initially presented his theory in a speech to the American Sociological Society in effort to study two field, crime and high society which had no prior empirical relationship. He described his thought as “crime done by a one’s respectability and high social position in his occupation (Sutherland 1949, cited in Gbegi & Okoye, 2013). Sutherland asserted that in his time, not more than 3% percent of the persons imprison in a year come from the upper class.” His aim was to ascertain the correlation between social status, money, and possibility of going to jail as a result of white-collar crime, in relation to more visible, usual crimes, although, the percentage is a little bit higher today.

Most of Sutherlands effort was to separate and identify the difference in blue collar street crimes, like theft, arson, attack, robbery, vandalism and rape which are frequently blamed on structural, psychological and associational factors. Meanwhile, white-collar criminals are opportunists that take advantage of their conditions in accumulating financial gain. These are well educated, intellectual, wealthy, individuals who are competent enough to get a job that allows them the unsupervised access to huge sum of money. This theory is therefore relevant to this study as the employees and office holders in public sector happen to be opportunists that take advantage of their position in accumulating financial gain.However the federal Bureau of Investigation has taken a narrow approach where it define white-collar crime as those prohibited acts which are related to violation of trust, concealment, deceit, etc which are not reliant upon the use of violence or physical force. Olajide (2014) pointed out that the single way a crime differs from another is in the characteristics and backgrounds of the offenders. A good number of white-collar perpetrators are differentiated by lives of opportunity, with origins in status variation. It is realized that a high number of white-collar crimes is not easily detected or even if detected, it is not being reported. Therefore due to the high status of the offenders of these crimes, a vastly experienced and skilled examiner or investigator such as the Professional Forensic Accountant is required to avert the incident of such elevated fraud.

2.7 Review of Empirical Prior Studies

In the course of reviewing different related papers and studies written on the subject matter, diverse contributions and suggestions were made. Umar, Samsudin and Mohamed (2016) write on government revenue control and government expenditure authorization. The study pointed out the elements of revenue control through which useful financial control can be achieved in a public sector. These include: periodic supervision; scrutinizing the system of revenue administration so that services are not executed without charges; appropriate submission of demand notices and follow up actions to tract the debts; timely submission of controlled forms and documents together with records of receipt; prompt deposit of excess funds into the bank account; establishment of authority limits and cash limits; and installation of efficient internal control system. Popoola, Che-Ahmad and Samsudin (2014) agreed with the findings of the above study conducted by Adams Umar, Samsudin and Mohamed (2016) and added to the major control mechanisms, specifically office of the Auditor General of the Federation, and the public accounts committee. This indicates that government particularly in Nigeria has put up remarkable standards and financial regulations to avert various forms of fraud such as misappropriation of assets and other resources as well as corruption, and other financial statements fraud.

Baz. Samsudin, Che-Ahmad and Opoola (2016) in their study measured the roles of forensic auditors in fighting fraudulent activities, difference between forensic and statutory auditor, features of forensic auditor and the impact of forensic auditor on the Nigerian corporate governance. The study concludes that forensic auditors have enhanced management responsibility, reinforced external auditor’s independence. Masoyi, Dadi and Ogere (2014) examined the efficiency of forensic auditing in detecting and preventing bank frauds in Harare, Zimbabwe. The study used questionnaires, documentary review and personal interview to acquire information from respondents in 13 commercial banks, 4 building societies, and 4 audit firms. The study showed although, forensic auditing has significant positive effect on organisation performance, forensic auditing department lacked relevant resources and technical know- how. Modugu and Anyaduba (2013) examined forensic accounting and financial fraud in Nigeria. The study used survey design utilizing a sample size of 143 comprising practicing auditors, accountants, stakeholders and management staff. The authors used binomial test for data analysis and determined that there is significance concord opinion amongst the stakeholder on the effectiveness of forensic accounting in fraud prevention and control, internal control quality and financial reporting.

Akkeren and Tarr (2014) employed Chi- square in their study and used statistics package for social science to empirically appraise forensic accounting as remedy to economic and financial crimes in the Nigeria public sector. By testing four hypotheses, their study showed that forensic accounting is a financial strategy used in detecting and preventing economic and financial misappropriation in the Nigerian economy. Adebisi, Matthew and Emmanuel (2016) used mean and standard deviation in assessing forensic accountants ability to plan fraud detection procedures. They also employed multivariate analysis of variance and analysis of variance ANOVA to evaluate their study with that of Agbiboa (2012). The researchers identified that forensic accountants efficiently transform the level and nature of audit test when the management fraud is high. They also suggest that forensic accountant should be engaged in the risk of management fraud appraisal process than consulting them.Suleiman and Othman (2016) disclose that forensic accountants are required in the Nigerian banking sector, Forensic accounting is a useful tool for addressing financial crimes in the banking system. Consequently, conventional accounting techniques are not effective in preventing financial crimes. They concluded that the view that frauds have been least detected by auditors is valid as auditors are more sufficiently qualified to detect frauds rather than emphasizing the traditional separation of duties and protection of assets. Most of these studies reviewed, have explored studies on forensic accounting and collected data in their individual states. However, there is need to examine the wider scope by extending it to adequate number of Federal Government Ministries that are mostly the battling ground of fraud and corruption as mention the problem statement. This will assist in obtaining relevant data that is capable of revealing appropriate and dependable findings.

3. METHODOLOGY

In conducting this study, a survey design was adopted and a selection of ten (10) most active ministries which include ministry of works, ministry of finance budget and national planning, ministry of health, ministry of humanitarian affairs and disaster management, ministry of education, ministry of transportation, ministry of agriculture, ministry of aviation, ministry of information and ministry of communication and digital economy. A sample size of one hundred (100) respondents was selected using a random selection of ten (5) experts from each ministry which comprises auditors and accountants from the ten (10) ministries selected from FCT Abuja. The data for the study were gathered from primary sources, using a structured questionnaire which was administered to respondents in order to generate data from the selected ministries. All the questionnaires administered were properly filled and returned.

3.1 Data Analysis and Interpretation

The data collected from the retrieved copies of questionnaire were carefully analyzed by means of Analysis of Variance (ANOVA). The selection of ANOVA in this research is due to the fact that it shows the degree of variance in dependent variables caused by the independent variables. Furthermore, ANOVA is used in measuring the variation in more than two distinct samples drawn from the population with the same variance. The decision Rule of this study indicates that the null hypothesis should be rejected if the calculated value of f-ratio is higher than the critical value of f. i.e. (ft-1, N-t). Otherwise, it will be accepted.

3.2 Test of Hypotheses

Ho1: Use of forensic accounting service in public sector is not effective in detecting fraud Public Sector.

Table 1. Effectiveness of Forensic Accounting Service in Detecting Fraud in Public Sector

Variables	Question 2	Question 8	Question 11	Total
Agree	8	15	11	34
Strongly agree	35	29	24	88
Disagree	6	3	7	16
Strongly disagree	1	3	8	12
Total	50	50	50	150

Responses Generated from the Questionnaire

In an attempt to answer research question one, the findings of questions 1, 2 and 3 in the questionnaire indicate that hypothesis one responses of 34, 88, 16 and 12 were recorded as agree, strongly agree, Disagree and strongly agree respectively. This showed that the use of forensic account in Nigerian public sector is effective in fraud detecting. This finding is in line with the works of Ozuomba, Ofor and Okoye (2016) and Umar, Samsudin and Mohamed (2015).

Table 2. Anova Summary

Source	Sum of square	Degree of freedom	Mean square	F-ratio
Between	1513	3	501.3	27.14
Within	140	8	16.875	
Total	1653	11		

Critical value of 5% significance level and a degree of freedom 3 to 8 is 4.07

Decision Rule Given the F-ratio calculated value of 27.14, which is higher than the critical value of 4.07, the null hypothesis is rejected while the alternative hypothesis is accepted. Thus, the use of forensic accounting service is effective in fraud detection in Public Sector.

Ho2: There is no significant correlation between forensic accounting and legal action support service in Nigerian courts.

Table 3: Correlation between Forensic Accounting and Legal Action Support Service in Nigerian Courts

Variables	Question 3	Question 6	Question 10	Total
Agree	10	9	8	27

Strongly agree	35	37	30	102
Disagree	5	4	7	16
Strongly disagree	-	-	5	5
Total	50	50	50	150

Responses Generated from the Questionnaire

In an attempt to answer research question one, the findings of questions 2, 6 and 10 in the questionnaire indicate that responses of 27, 102, 16 and 5 were recorded as agree, strongly agree, Disagree and strongly agree respectively. This showed that there is a significant correlation between forensic accounting and litigation support service in Nigerian's court. Agbiboa (2012) and Idris (2017), have the same finding in their studies.

Table 4: Anova Summary

Source	Sum of square	Degree of freedom	Mean square	F-ratio
Between	1770	4	588.33	27.14
Within	48	5	7.63	
Total	1818	9		

Critical value 5% significant level and a degree of freedom 3 to 6 is 4.76

Decision Rule Given the F-ratio calculated value of 27.14 which is higher than the critical value of 4.76, the null hypothesis is rejected while the alternative hypothesis is accepted. Thus, there is significant correlation between forensic accounting and legal action support service in Nigerian courts.

Ho3: Use of forensic accounting service is not effective in preventing fraud in Public Sector.

Table 3:Effectiveness of Forensic Accounting Service in Preventing Fraud in Public Sector

Variables	Question 5	Question 7	Question 9	Total
Agree	10	12	8	30
Strongly agree	31	28	37	94
Disagree	5	4	5	16
Strongly disagree	4	6	-	10
Total	50	50	50	150

Responses Generated from the Questionnaire

In an attempt to answer research question one, the findings of questions 5, 7 and 9 in the questionnaire indicate that responses of 30, 94, 16 and 10 were recorded as agree, strongly agree, Disagree and strongly agree respectively. This showed that the use of forensic accounting is effective in fraud preventing in the Nigerian public Sector. This is in accordance with the findings of Modugu and Anyaduba (2013) and Umara, Samsudin and Mohamed (2016).

Table 4:Anova Summary

Source	Sum of square	Degree of freedom	Mean square	F-ratio
Between	1773	3	591.33	27.16
Within	45	6	7.33	
Total	1818	9		

Critical value at 5% significance level and a degree of freedom 3 to 7 is 4.35.

Decision Rule Given the F-ratio calculated value of 27.16, is higher than critical value of 4.35, the null hypothesis is rejected while the alternative hypothesis is accepted. Therefore, it can therefore, be conclude that the use of forensic accounting in public sector is effective in fraud prevention.

4. CONCLUSION/ RECOMMENDATIONS

Forensic accounting being a contemporary field in accounting has an essential role to play in protecting the Nigerian Public Sector against economic and financial fraud. This study disclosed that forensic accounting merges auditing, accounting and investigating skills in detecting, preventing and presenting valid evidence being used against prosecutors in the Nigerian courts. The study also disclosed that fraud being committed by public sector staff and political offices holders can be prevented or reduced through the roles of forensic accountants. Forensic accountants also required forensic accounting skills to enable them significantly contribute, their quota in the economic development and protecting the image of the Nigerian Public Sector. In view of the study findings, it is thus, recommends that Nigerian Public Sector should originate a good public and recruitment policies that attract citizens with good moral character as employee, public office holders, administrators, legal practitioners etc. Nigerian Public Sector should build a consistent internal control system and instigate efficient and effective internal check; public sector should also adopt a good accounting system in valuable and effective practices; the range of Nigerian anti-corruption agencies such as EFCC, ICPC should be reorganized by the government for achieving better performance; professional accounting bodies in Nigeria should make sure that more forensic accountant are produced and are well trained with current skills of forensic accounting processes; Financial Reporting Council (FRC) should also ensure the best standard, regulations and guidelines are established to ensure service delivery and best practice. Finally, Nigerian public sector needs to invest in building human capacity to recover the internal auditors' quality. Nigerians should also hold the character of accountability, integrity, equality, impartiality as a moral duty to eliminate or reduce the altitude of fraud in the Nigerian public sector.

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EFFECT OF FORENSIC ACCOUNTING ON FRAUD DETECTION AND PREVENTION IN SELECTED QUOTED DEPOSIT MONEY BANKS IN NIGERIA

Abstract

The increasing role of forensic accounting cannot be over emphasized in the private sector such as bank considering the need for transparency. In the modern world, forensic accounting and its application has become an emerging topic of great importance in academics, research and industries. Therefore the study examined effect of forensic accounting on fraud detection and prevention in selected quoted Deposit Money Bank (DMBs) in Nigeria. The survey design was used in the study with a sample size of 115 resident internal control officers, Branch operation manager and cash officer/head teller from Access bank, First bank, GT bank, Union Bank, UBA and Zenith Bank. Proportionate and Simple random sampling technique was utilized in distributing questionnaire to the respondents. The study utilized simple linear regression and the findings of the study indicated that there is a significant relationship between forensic accounting and fraud detection while forensic accounting has no effect on fraud prevention in the quoted DMBs. The study concluded that forensic accounting has not been able to prevent fraud occurrence in the branch operation of DMBs in Nigeria. In line with the above findings, the study recommended among others that the Central Bank of Nigeria (CBN) and Chartered Institute of Bankers of Nigeria should review the operational manual in other to institutionalize the application of forensic accounting principles and method to tackle fraud and irregularities in DMBs.

Key Words: Forensic accounting, deposit money bank, fraud detection, fraud prevention

I. INTRODUCTION

The need for Forensic accountant has become necessary due to prevalent issues of fraud all over the world and in Nigeria in particular. Owing to this, the CBN has intervened in the management of many banks in recent times so as to safeguard depositors fund due to mismanagements. According to Zacharia (2014), the management of some banks were shown the way out by the CBN for alleged fraud and gross mismanagement of depositors fund, among which are Intercontinental bank (now acquired by Access bank), Oceanic Bank (now acquired by Eco bank), Union bank, Afri bank and First Inland bank. Deposit money banks (DMBs) are found to be in distressed and having liquidity challenges even after they have been cleared and regarded as being financially stable (Inyada, Olopade & Ugbede, 2019). Hence the need for Forensic accounting application in the DMBs. Owolabi (2010) indicated that the Nigerian DMBs have had a fair share of financial and transactional scandals. Nigeria banking failure can be traced to the 1930's bank failure and when all indigenous banks, except the National Bank. Other banking crises occurred again during the banking boom and crashed of the late 1940's when all but only four indigenous banks were not liquidated. In a short, within two years a total number of Sixteen (16) banks failed between 1952 and 1954 and twenty-six (26) failed in the late 1990s while others were restructured, renamed or completely acquired.

In 2004, the CBN under the leadership of Professor Chukwuma Soludo as a result of capital inadequacies and liquidity challenges in Nigerian banks led to the raising of minimum capital base to N25 billion. This brought the number of Nigeria banks from 89 in 2004 to 25 in 2006. The failure in the application of forensic accounting has been known as a major factor in most cases of financial sector fraud and distress and has led to the poor performance of management. Kennedy (2013) opined that forensic accounting aids fraud control and quality of internal control due to the accounting knowledge and investigative skills they bring to forward in assisting legal experts. The research carried out by Olukowade and Balogun (2015) found out amongst others that the services of forensic accountants would support the audit committee in performing their oversight duties by giving them confirmation on internal audit report. Forensic accounting is a specialised area of the accounting practice, which describes engagements that result from actual or anticipated disputes or litigation. Forensic evidence is used in a court of law.

Olukowade and Balogun (2015) opined that the role of a forensic accounting experts under the contemporary and emerging conditions no doubt is very significant because forensic accountants help the court of law, lawyers, law enforcement agents such as the police, regulatory bodies and other institutions (Economic and Financial Crimes Commission, Nigeria Stock Exchange Commission) in executing fraud cases. The increasing occurrence of fraud and financial crime in modern day deposit money banks and its business environment requires the services of a professional such as forensic accountants to unearth concealed financial misappropriation and fraudulent activities within and outside the financial sector. There has been in a recent year an upsurge of fraudulent activities in Nigeria (Enofe, Okapor & Atube (2013); Modugu & Anyaduba (2013); Okoye and Gbegi (2013), Gbegi and Adebisi, 2014).

Olaleye and Fashina (2019) stated the rate of electronic banking or mobile banking fraud in recent times in the Nigeria banking sector is unbecoming. CBN 2017 Annual report indicated that about 1.63 billion naira was lost to electronic fraud in the deposit money banks in Nigeria. The study concluded that if the regulatory body did not handle the rising issues, it might cause the sector a huge setback and customers' dissatisfaction.

Studies have been conducted on forensic accounting and fraud detection and prevention in Nigeria quoted DMBs such as (Modugu & Anyaduba, 2013; Ogundaua, Okere, Ogunleye & Oladapo, 2018). However, to the best of researcher's knowledge, none of the studies used the categories of respondents employed in this study, which made the outcome of this study to be more relevant and valid. Previous studies focused on accountants, auditors, Management and so forth of the banks. These studies were not able to state precisely how fraud can be detected and prevented hence the motivation behind the study. In light of this, the study examined the effect of forensic accounting on fraud detection and prevention in selected quoted DMBs.

The objective of the study is to examine whether forensic accounting can detect fraud and to also investigate whether forensic accounting can prevent fraud in the selected money banks. The hypotheses of the study are stated in null form. The first hypothesis is that Forensic accounting and fraud detection in selected DMBs are not significantly related, while the second one is that forensic accounting does not prevent fraud in the selected quoted DMBs.

II. LITERATURE REVIEW

Conceptual Review

Fraud is an intentional or deliberate deception resulting in injury to another person. It is a deliberate misrepresentation, which causes another person to suffer damages usually monetary losses. Fraudulent schemes vary in scope and context especially with the position of the perpetrators within an establishment. In the public sector environment, bribery, misappropriation, mismanagement of fund and budget padding are common (Okpala & Enwefa, 2017). It is on this basis that various authors described fraud in different ways to suit their perception (Ozili, 2015). Fraud may be committed when one is under pressure or has the opportunity to do so. Fraud can equally occur due to rationalization.

Corruption is a threat to Nigeria economy. Waziri (2009) encouraged Nigerians to be more vigilant and honest in managing their economic affairs, as it cannot continue to waste its wealth in the fight against the global economic meltdown caused by corruption. That if, in the midst of global economic crises, Nigerians tend to manipulate the economy into graft, there is an impending disaster that they may not be able to recover from for a long time. He submitted that deprivation could be used as a tool in fighting its uprising. She concluded that EFCC would not leave nor slow down its primary responsibility of investigating and prosecuting graft and economic crimes.

Fraud Detection

Fraud Detection Is the application of investigative skill to expose and uncover an intentional or deliberate act by an employee of the deposit money bank, the third party or both to distort financial statements, or to divulge vital information of unsuspecting customers of the bank in other to perpetrate Fraudulent activities and financial crime. Detection of fraud is to uncover the existence of something abnormal as well as something not in conformity with process flow. Crime analysis requires the direct recognition of organizations real or possible crime.

Fraud Prevention

Fraud Prevention is to proactively stop something from taken place. It is the process of stopping the occurrence of fraud and fraudulent activities in a deposit money bank and other organizations. Barra (2010) and Ozili (2018) submitted the closing of all enabling opportunity and factors that encourage frauds in deposit money banks and other organizations. For example, in a branch operation of a deposit money bank, some area should be out of bound to non-staff of some sensitive units, second level authorization by a superior officer of the banks, documentation and audit trail of some sensitive activities and of course the resident control officer to ensure compliance to all internal and accounting system controls to deter or stop fraud in an organization.

Theoretical framework

There are many theories used for fraud detection, prevention and reduction. These are the Agency theory, Fraud scale theory and the Fraud triangle theory. However, this study is anchored on the Agency theory. The agency theory is a theory that attempts to resolve the conflict between the principal and its agents. The major goal of the Shareholders is how their wealth can be maximized and this can only be achieved if the management work in alignment with this goal. To minimize divergent objectives between the shareholders and management, a monitoring mechanism is needed. Therefore, forensic accounting is a monitoring tool for fraud detection and prevention in the DMBs. It is a tool to monitor the activities of the management. The principle of agency is often used in accounting literature to clarify the selection and success of professional auditors and financial advisors such as forensic accountants and this empowers forensic accountants as professionals to carry out unique tasks on behalf of company owners.

This theory is definitely relevant in this study because it helps to clarify a forensic accountants position and duties, which if implemented methodically, will aid financial efficiency in DMBs in Nigeria. It was argued that the agency theory offered a valuable theoretical structure for the study of forensic accounting and fraud identification and prevention in DMBs.

Empirical Review

Joseph et al. (2016) investigated the impact of forensic accounting in fraud prevention and detection a case study Nigeria public sector. The study found that forensic accounting have a substantial part to play in fraud detection and prevention in Nigeria. Further, Henry and Ganiyu (2017) examined the effect of forensic accounting services on fraud reduction in Nigerian banking industry. The study used an adjusted population four (4) banks with A+ credit rating, which are GT Bank, Zenith Bank Plc, Skye Banks Plc and Access Bank Plc. The study found that forensic accounting services are able to reduce the occurrence of fraud in the banking sectors.

Bassey (2018) in his study confirmed that forensic accounting plays substantial roles in the prevention of crimes and corruption in selected micro finance banks in Calabar. Forensic accountant now seen as fraud detection experts are now being engaged in fraud detection in developing economy. Nwaiwu and Aaron (2018) examined the forensic accounting relevance in the selected listed companies' fraud detection process and performance in Nigeria. They used structured questionnaire, which was analyzed using descriptive statistics and correlation. They confirmed that there is both positive and negative significant relationship between the proxies of the two variables. Khersiat (2018) assessed the need for a forensic accountant to detect the manipulation of financial statements and combat tax fraud in Jordan. The study confirmed that forensic accountant has the qualifications, skill and expertise to detect tax fraud in financial statements as well as detect the manipulation of financial statement records. Yahaya, Abba and Suleiman (2018) investigated the effect of forensic accounting knowledge on fraud prevention among listed companies in Nigeria. He submitted that forensic accounting knowledge has a positive and significant relationship with fraud prevention

Ogundaua, (2018), studied the impact of forensic accounting on fraud detection and prevention in the Nigerian banking system. The study adopted survey research design. Three hypotheses were formulated and tested. The study found a significant impact of forensic accounting on fraud prevention and detection. The study also recommended that the Government should insist on compliance to any legal framework that will enable the acceptability and application of Forensic Accounting in Nigeria.

Asusu, (2019), conducted a study on forensic auditing, fraud reduction and fraud prevention in DMBs in Nigeria. The study adopted Survey research design, while data was collected through personal interview, questionnaires and document review. The sample size of forty-eight operations managers, internal auditors and general managers were used from sixteen banks in Nigeria. The finding of the study revealed that forensic investigation and auditing services is significantly related with internal control systems and cash management systems of DMBs.

Okafor and Agbiogwu (2016) perform a report that uses forensic accounting expertise to find the control of fraud in selected DMBs in Nigeria. The study concluded that ownership of basic forensic accounting expertise substantially decreases the incidence of fraud cases and financial crime in the DMBs, and that there is a major gap between the services of formal auditors and forensic accountants, thus the involvement of forensic specialist aid in minimizing fraud cases in the DMBs.

Again, Jagun (2016) study how knowledge of forensic accounting can aid combating of fraud in Nigeria DMBs. The study made use of Survey method and co-relational design in the data collection. The study revealed that expert opinions, application of forensic accounting skills and techniques impact positively on fraud prevention and detection in the Nigerian banking sector, even though delay in court processes has a negative impact on the related fraud investigation.

Zachariah, Gabrel, Ernest and Masoyi (2014), conducted a study on the important of forensic accounting skill and capabilities in reducing and preventing fraud in Nigeria DMBs. Fraud cases that occurred between 2001 -2012 were analyzed using Trend analysis of fraud cases in the Nigeria DMBs, also included in the study are the amounts involved in the fraud. Descriptive analysis was used and the study concluded that the failure of the external auditor and other stakeholder with the responsibility of fraud prevention and detection has continually made DMBs to lose huge sums of depositor's fund. The study suggested that there is an urgent need to employ the service of a forensic accountant in tackling frauds in the Nigerian banks.

III. METHODOLOGY

Survey design was used for this study. The population of this study is the entire 15 quoted DMBs in Nigeria; however, the study based on the researcher judgment selected six banks as the sample for this study. The study was carried out in three local government areas of Lagos state (these are Ojo, Alaba, Amuwo-Odofin and Alimosho LGAs) through the selection of three branches of the sample banks in each local government. The selected banks are First bank, GT banks, Union bank, UBA, Zenith bank and Access bank. The basis of selection is high population density, the existence of all banks in these areas coupled with high volume of business transactions. The respondents are branch operation manager, the resident control officer and cash officer/head teller of the three branches, each of the selected six (6) deposit money banks are domicile and operational in Amuwo-Odofin, Ojo, Alaba and Alimosho Local government area of Lagos State, Nigeria. Hence the population of study is 162 respondents. Applying Taro Yamani formula, at 5% error margin, the sample size for the study is 115 respondents. Primary data were sourced through the structured questionnaire, which was used to obtain information from respondents. The structured instrument was scaled with five point Likert scale of SA –SD.

Cronbach's Alpha was used to determine the reliability of the constructed measures, which has a value of 0.73. Cronbach's Alpha beta value above 0.70 is considered to be reliable enough (Lloyd, Streiner & Shannon, 1998). Additionally, informed people and experts in the field of forensic accounting reviewed and accepted the instrument ability to achieve goals. Also to add to validity, the instruments used were adapted from previous work such as (Ogundana, 2018). Simple linear regression was used as the technique of analysis.

Model specification

The aim of this study is to investigate the effect of forensic accounting in the prevention and identification of fraud in the Nigerian banking industry using the least square regression framework.

The models for this study is as follow:

$FD = \beta + \beta_1 FA + \mu$ .... (1)

$FP = \beta + \beta_1 FA + \mu$… .... (2)

Where: FA = Forensic Accounting; FD = Fraud Detection; FP = Fraud Prevention; μ =Error term.

IV. RESULTS AND DISCUSSION

The study administered 115 questionnaires of which 98 was returned back and valid accounting for 85% of the response rate

Hypothesis One

H_1- Forensic accounting and fraud detection in selected DMBs are not significantly related

Table 1: Model Summary

Model	R	R-squared	Adjusted R-squared	Std. Error of the Estimate
1	.501[a]	.251	.241	.43415

Source: Authors' Computation (2021)

a. Predictors: (Constant), forensic accounting

Table 2: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig
1	Regression	4.855	1	4.855	25.757	.000[b]
	Residual	14.513	77	.188		
	Total	19.368	77			

Source: Authors' Computation (2021)

a. Dependent variable: detection, b. Predictors: (Constant), forensic accounting

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.841	.412		2.044	.044
	Forensic accounting	.656	.129	.501	5.075	.000

Source: Authors' Computation (2021)

a. Dependent variable detection

Dependent Variable: Fraud Detection at 5% level of significance

Table 1 discloses an adjusted R^2 of 0.241, which implies that 24.1%, of variation in fraud detection is being explained by forensic accounting. Further, in table 2 f-statistic chi square probability in the model reveals a value of 25.78 with an associated p-value of 0.000 which is significant at less than 5% level of significance. Hence, the study rejects the null hypothesis one that there is no significant relationship between forensic accounting and fraud detection in the quoted deposit money banks.

In addition, the regression coefficient table reveals that forensic accounting has a beta value of 0.656 and a p-value of 0.000. This suggest that forensic accounting help to increase the rate of fraud detection in the quoted banks. This significant finding conforms with prior studies by Jagun (2016), Ogundaua (2018) who found that forensic accounting has assisted in fraud detection.

Hypothesis Two

H_2- Forensic accounting does not prevent fraud in the selected quoted DMBs.

Table 4: Model Summary

Model	R	R-squared	Adjusted R-squared	Std. Error of the Estimate
1	.39[a]	.019	.007	.47303

Source: Authors' Computation (2021)

a. Predictors (Constant), forensic accounting

Table 5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig
1	Regression	.341	1	.341	1.524	.221[b]
	Residual	17.229	77	.224		
	Total	17.570	78			

Source: Authors' Computation (2021)

a. Dependent variable: Prevention; b. Predictors: (Constant), forensic accounting

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.900	.448		4.237	.000
	Forensic accounting	.174	.141	.139	1.235	.221

Source: Authors' Computation (2021)

a. Dependent variable: Prevention

Dependent Variable: Fraud Prevention, at 5% level of significance

In Table 4 adjusted R^2 regarding fraud prevention reveals a value of 0.007. This implies that 0.07% of variation in fraud prevention was explained by forensic accounting, which is very minimal. Furthermore, the f-statistic value of 1.542 with a related p-value of 0.221, which is not significant at 5% level of significance. Hence, the study fails to reject the null hypothesis one that there is no significant relationship between forensic accounting and fraud prevention in the quoted DMBs. The insignificant p-value suggests that DMBs has not been adopting the principle of forensic accounting in fraud prevention, they probably still operate at traditional audit method.

Discussion and Findings

In testing hypothesis one which centers on forensic accounting and fraud detection in DMBs, the R^2 of 0.241 implies that 24.1% of variations in fraud detection is being explained by forensic accounting. The f-statistics chi square probability further revealed a value of 25.78 with an associated p-value of 0.000, which is significant at less than 5% level of significance. The conclusion here is that there is a significant relationship between forensic accounting and fraud detection in DMBs in Nigeria.

The second hypothesis centers on forensic accounting and fraud prevention. The adjusted R^2 revealed a value 0.007. This implies that 0.07% of variation in fraud prevention was explained by forensic accounting, which is a minimal one. Equally the result of the f-statistics is not significant. The conclusion drawn here is that forensic accounting has no effect on fraud prevention.

V. CONCLUSION AND RECOMMENDATION

It is very important to note that the role of a forensic accounting expert under the emerging technological driven financial fraud in the corporate organization and DMBs is in no doubt very vital because they help lawyers, courts, regulatory bodies and other law enforcement institutions in investigating and documenting frauds. The expertise of a forensic accountant in the modern day business operation is very important as it helps to unearth complex fraudulent activities within and outside the organization. Also, the continued institutional failure over the decades even after which audit have been carried out has prompted a paradigm shift in accounting and investigation of fraud related issues. External auditors are meant to perform tests to detect errors and material defalcation if they exist. However, forensic accountants as an expert are now being hired in advanced economies to investigate cases of fraud and help with evidences that will help in the law court. The finding of this study indicates that there is a significant relationship between forensic accounting and fraud detection while forensic accounting has no effect on fraud prevention in quoted deposit money banks. The study also indicates that forensic accounting has not been able to prevent fraud occurrence in the branch operations of deposit money banks in Nigeria.

Therefore, the study recommends that the CBN and Chartered Institute of bankers of Nigeria should enforce the application of forensic accounting principle and method to tackle fraud and irregularities in DMBs. The institute Chartered Accountants of Nigeria and the training schools of the DMBs should encourage policies and special training in the field of forensic accounting, investigation and its application.

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Application of Forensic Accounting as a Tool for Fraud Prevention in the Nigerian Deposit Money Banks

Abstract: **This study examined the application of forensic accounting as a tool for fraud prevention in Nigerian deposit money banks. Ex-post facto research design was used as data was sourced from published annual report of Nigerian Deposit Insurance Corporation (NDIC) for the period covering 1994 to 2019. The population of this study is made up of all the twenty (20) listed deposit money banks in Nigerian Stock exchange. The entire population was used as sample size for the study. The study made use of Automated Teller Machine Related Fraud (ATMF), Web Based Fraud (WBF) and Foreign Currency Fraud (FCF) as independent variables, while dependent variable for the study was Forensic Accounting (FA). Time series analysis was conducted using Autoregressive Fractionally Integrated Moving Average (AFRIMA) Model, and analysis was conducted with the aid of STATA 14.2. The results revealed that forensic accounting have significant effect on all the variables used in the study, in the short run, however, on future prediction, the study predicts that forensic accounting will have no significant effect on fraud prevention based on evidence of increased fraud cases in the data collected from one period to the other. The study recommends amongst others that appropriate sanctions should be applied when fraud is detected. Where prosecution is considered to be the appropriate sanction, proper Forensic procedures need to be followed during investigation and trained experts like the Professional Forensic accounting.**

***Key words*: Forensic Accounting, Fraud and Deposit Money Bank.**

I. INTRODUCTION

Fraud is a universal financial word. Its occurrence or perpetration is not limited to Nigeria. The incidence of fraud in the Nigerian banking industry has assumed an alarming proportion of late (Uzoka, 2001). With the deregulation of the banking system in the early 1980s, the pace at which banks were established increased in an unprecedented manner. This development brought in its wake physical expansion and growth, both in structure and manpower. The Banking consolidation exercise which commenced in 2005 further accentuates rapid development and expansion of Nigerian Banks within and outside the country. Poaching of experienced and seasoned workers across all cadres to fill the ever increasing job openings in the banking sector became the order of the day (Nwaze, 2006). With this development, all manner of staff with questionable characters were employed.

General poverty amongst the citizenry coupled with high degree of unemployment in the larger society made survival a herculean task. Corruption and other forms of vices became easily identifiable with Nigerians, irrespective of their gender, social status and professional callings. Under this dispensation, frauds have grown in scope, nature, methodology and dimensions as the banking industry advances. The rate, frequency and volume of financial losses have been a major source of concern to the regulatory agencies. Government and public statements have been issued because of this cankerworm, which has eaten the fabrics of the society. Unfortunately, the bane of society is greed and the philosophy to get rich quick is now the order of the day. According to Nwaze (2006), it would almost amount to an understatement to say that fraud has come to stay. It has been around since the beginning of time and would certainly continue to be an issue until the end of time.

Frauds occur in almost all facets of human endeavor. Employee dishonesty is as old as the work place itself. Frauds have assumed different dimensions, albeit with increased sophistication. Hence forgeries, deceit and other unwholesome practices have continued to be a way of life and the practitioners have flourished overtime at the expense of the larger society. Incidentally, banks are their major targets in recent times notwithstanding the increased use of technology in banking operations. No bank appears safe from the menacing epidemic.

World economy have been on the rise in the near past of which countries are fast developing economically and those that were already developed being more industrialized. These increasing economic activities and industrialization has on the negative side led to increase in the issue of fraud, money laundering and other corrupt practices in business and government organizations. This has necessitated the application and practice of forensic or investigative accounting by both the public and private institutions. The harsh global environment has also made it necessary for the forensic auditors and accountants to establish controls and procedures to aid the detection, prevention and prompt response to such crimes with fraud as crime being at the forefront (Opiyo, 2017). In the modern era of trade globalization, characterize with the high level acquisition and adoption of technology as a business enabler, increase in fraud and corrupt practices, and new and complicated legislation which offers new opportunities for both perpetrators of fraud and forensic accountants (Muse Johnson, AyoibChe-Ahmad and Rose Shamsiah, 2014).

The prevalence of forensic accounting fraud and audit failures has caused an erosion of public trust in the auditing profession (Nicolaisen, D.T.,2005; Silverstone and Davia,2005; Hogan et al, 2008). In addition, it has also caused a higher expectation from the public for auditors to detect fraud thus calling for the need of use of forensic accounting techniques to fulfill this high expectation. As per the global economic crime survey of PWC (2014), fifty four percent of respondents reported that, their companies experienced frauds in excess of $100,000 with eight percent reporting fraud in excess of five percent. Sixty six percent of respondent indicated that the financial impact of economic crime on their organization remained the same or increased in the last 2 years. This indicates that fraud can impact organization`s revenue just like any other market forces and businesses. The ability to prevent, detect and swiftly respond to fraud can be a crucial cost saving tool. Use of investigative and more improvised techniques will help organizations detect and prevent frauds from occurring.

Nowadays modern frauds such as white collar crimes which includes; embezzlement, bankruptcies, contract disputes and possibly criminal financial transaction; It is however the responsibility for a forensic accountant who have the necessary ability to investigate and provide litigation support.

1.2 Objective of the Study

The general objective of this study is todetermine whether the use of Forensic Accounting will help to reduce fraud cases. Specifically, the objective of the study is to:

i. Determinethe effect of forensic accounting on automated teller machine/card related fraud in the Nigerian Deposit Money Banks.
ii. Examine the effect of forensic accounting on web base/internet related fraud in the Nigerian Deposit Money Banks
iii. Assess the effect to which forensic accounting has on foreign currencies theft in the Nigerian Deposit Money Banks.

II. REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter introduces the review on the conceptual framework of this study, that is, fraud and forensic accounting. The rest of the chapter outlines the theoretical framework, empirical review and points out the gap in knowledge.

2.2 Conceptual Framework

The concepts to be discussed are the forensic accounting, fraud, and fraud prevention.

2.2.1 Forensic Accounting

Forensic accounting also called investigative accounting or fraud audit is a merger of forensic science and accounting (Kasum, 2009). Forensic science, as Crumbley (2003) put it may be defined as the application of laws of nature to the laws of man. A forensic scientist is one who examines and interprets evidence and facts in legal cases and also offers experts opinions regarding their findings in the court of law. In the present context, the science is accounting, hence the examination and interpretation will be of economic information.

According to Bologna and Lindquist (1987), forensic and investigative accounting is the use of financial skills and investigative mentality to unresolved issues, applied within the context of the rules of evidence. Zysman (2004) defined forensic accounting as integration of accounting, auditing and investigative skills. Other definitions have been given by Joshi (2003), Mehta and Mathur (2007) and Crumbley (2001). Coenen (2005) avers that forensic accounting uses accounting concepts and techniques in solving legal problems. Evazzadeh and Ramazani (2012) considers it as a specialized field in accounting frequently concern with legal problems and complaints.

2.2.2 Fraud

Literature is replete with various definitions of fraud. It varies between organizations and jurisdictions (Adewale, 2008). Although it is not the intention of this research to enter into the debate on definition of fraud as several studies (Robertson, 1976; Stanley, 1994; Özkul&Pamukçu, 2012) have done that, a proper understanding of fraud is necessary to situate the present study. For instance, Oxford (2006) defines fraud as a false representation by means of a statement or conduct, in order to gain a material advantage.

The Association of Certified Fraud Examiners (2008) defined fraud as the use of one‟s occupation for personal enrichment through deliberate misuse or misapplication of the employing organization‟s resources or assets. It is therefore any act of misappropriation, theft or embezzlement of corporate assets in a particular economic environment. It has been considered as any act of deception performed by somebody to cheat or deceive another person to his detriment or the detriment of any other, or to cause injury or loss to another person while the perpetrator has a clear knowledge of his intent to deceive, falsify or take advantage over the unsuspecting and innocent victim (Robinson, 1976) resulting to suffering loss or damage (Stanley, 1994).

2.2.3 Automated Teller Machine

Meaning and Nature of ATM Automated teller machine (ATM) is an electronic communication device that enables customer of financial institutions to perform financial transactions such as cash withdrawals, deposits, funds transfer and account information inquiries at anytime and without the need for direct interaction with the bank staff.

It is a cash dispenser which is designed to enable customers enjoy banking services without coming into contact with cashiers. ATM combines a computer terminal, record keeping system and cash vault into one unit permitting customers to enter into the bank book keeping system with a plastic card containing a personal identification number (PIN). Once access is gained, it offers several retail banking services to customers. An ATM has also been described as an electronic outlet that allows customers to complete basic transaction without the aid of a branch representative. ATMs are known by a variety of names Many ATMs have a sign above them indicating the names of the bank or organization that owns the ATM, and possibly including the networks to which it can connect. ATMs that are not operated by a financial institution are known as a white label ATMs

2.2.4 Web Fraud/Cybercrime

Cybercrimes in the Banking Sector The life wire of the banking sector is the internet. Currently, banks all over the world are taking advantage and incorpo- rating opportunities brought about by e-banking which is believed to have started in the early 1980‟s (Shandilya, 2011). As the security level in this sector becomes stronger, the strength and tactics of these fraudsters increases also. Vari- ous lucrative attacks have been launched and unfortunately, many have succeeded. In general, cybercriminals execute fraudulent activities with the ultimate goal of accessing a user‟s bank account to either steal or/and transfer funds to another bank account without rightful authorisation. How- ever, in some rare cases in Nigeria, the intention of cyber- criminals is to cause damage to the reputation of the bank by denying service to users (Parthiban, 2014) and sabotaging data in computer networks of organizations.

Bank Verification Number (BVN) Scams: The BVN is a biometric identification system which consists of an 11-digit number that acts as a universal ID across all the banks in Nigeria. BVN was implemented in 2015 by the Central Bank of Nigeria. It was introduced to link various accounts to the owner thereby ensuring that fraudulent activities are mini- mised. For fraudsters, opportunities to extort money and to carry out other fraudulent activities arose from the imple- mentation of the BVN. It was detected that fake and unau- thorised text messages and phone calls were sent to various users demanding for personal information such as their ac- count details. In addition, phishing sites were created to ac- quire such information for insalubrious activities on the bank account.

2.2.5 Foreign Currencies Fraud

Investments in the foreign currency exchange market (FOREX) is a relatively new fraudulent promotion being developed and sold across the country. You are led to believe that you are investing in a currency futures market which is highly regulated, and a market traded in by large banks and financial institutions whose commissions for trades are no more than two or three points.

The foreign currency "spot market" is commonly referred to as the "Forex".

Foreign currency contracts may be legitimately traded either on a recognized futures exchange or in the "interbank market," which generally involves trading between large institutions such as banks and corporations, rather than individual or retail customers.

Fraudulent currency trading firms often tell customers that their trading is done in the "interbank market" on your behalf.

"With a $10,000 deposit, the maximum you can lose is $200 to $250 per day."

Many currency traders ask customers to give them money known as "margin," often sums in the range of $1,000 to $5,000.

These amounts, which are relatively small in the currency markets, actually control far larger dollar amounts of trading.

Margin trading can make you responsible for dollar losses that greatly exceed the margin amount you deposited.

2.3 Fraud Prevention

Prior to 2006, most research on fraud prevention and detection methods has addressed „red flags‟ (Bierstaker, Brody &Pacini 2006). The “red flags” (or anomalies) are set of circumstances, which are unusual by nature, or varies from the normal activity. It is a signal that something is out of ordinary and to be looked into (Drew & Drew 2010 Albrecht and Romney (1986) discovered 31 red flags related to internal control out of the list of 87 of such as better predictors of fraud. In another study, Loebbecke, Eining and Willingham (1989) using the red flags approach developed a conceptual model to evaluate fraud probability and concluded that auditor‟s assessment of internal controls is critical in evaluating the possibility of fraud. In an experimental setting however, it was discovered that auditors who did not use red flags outperformed those who did (Pincus, 1989). Different views concerning the effectiveness of various red flags have been expressed in literature. For example, Hackenbrack (1993) observed that auditors with divers client experience have different views of the importance of a given red flag indicator.

2.4 Theoretical Framework

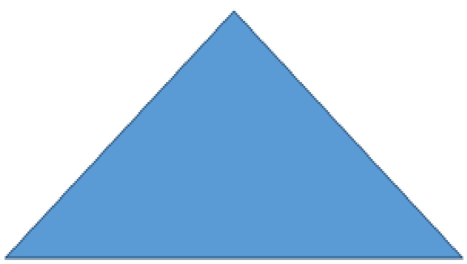
A theoretical definition gives the meaning of a word in terms of the theories of a specific discipline. This type of definition assumes both knowledge and acceptance of the theories that it depends on. To theoretically define is to create a hypothetical construct (Wikipedia Encyclopaedia, 2013).

2.4.1 Theory of Fraud Triangle

Cressey (1971) postulated the theory of fraud triangle. He observed that fraud is likely to occur given a combination of three factors; namely- Pressure (Motivation), Opportunity and Rationalization. Pressure here refers to needs or desires that have to be satisfied. It could be divided into financial pressure, vices, work-related pressure and other pressures (Adeniji, 2012). Opportunity to commit fraud, conceal the fraud or avoid being punished forms the second element of the fraud triangle. The third element is rationalization which entails giving unnecessary explanation(s) to justify one‟s involvement in fraud. There exists pressure, motivation or compulsion on the fraudster who identifies opportunity which he utilizes and tries to justify his actions by unnecessary rationalization.

Fig.1: Classical Fraud Motivation Model

OPPORTUNITIES



PRESSURE RATIONALIZATION

Sources: Wells, Joseph T. (1997). Occupational Fraud Abuse. In Albrecht, W. Steve (Ed.). Fraud Examination. Thomson: South-Western Publishing, 2003.

Every fraud executor is confronted with some kind of pressure or "need". Pressures that motivate individuals to commit fraud are financial pressures (high medical bills or debts), vices (drugs, gambling, alcohol), work-related pressures (high pressure for good results at work or a need to cover up someone‟s poor performance, or to report results that are better than actual performance compared to those of competitors) and other pressures (frustration with the nature of work, or even a challenge to beat the system). This „need‟ or greed usually has a combination of other factors such as the opportunity and the attitude to commit the fraud.

The executor of fraud must believe that he or she can commit the fraud without being caught (or if caught, nothing grave will happen). The opportunity to commit fraud is possible when employees have access to assets and information that allow them to both commit and conceal fraud. Opportunities are provided by a weak internal control environment, lack of internal control procedures, failure to enforce internal controls and various other factors such as apathy, ignorance, lack of punishment and inadequate infrastructure. Access must, therefore, be limited to only those systems, information, and assets that are truly necessary for an employee to complete his or her job.

The third driver of fraud is ability of the perpetrators to find a way to rationalize their actions as acceptable. Rationalization/Absence of guardians refers to the manner in which people think about their work, performance and contribution within the workplace. They, therefore, attach a value that they should derive from the company for being productive or delivering something of value. Absence of guardians, on the other hand, refers to the situation where there are limited or no processes in the organization to test the integrity of the financial information or processes. The absence of the integrity process includes an absence or ineffective role of internal auditors, external auditors, Board of Directors and reporting requirements – banks, regulators and appropriate management review. The study adopted the Fraud Triangle Theory as its framework because it explains the factors that cause individuals to commit fraud and best describes fraud in the context of the banking industry.

2.4.2 White Collar Crime Theory of Fraud

Edwin Sutherland in 1939 was the first to coin the term White collar crime. It means, a crime committed by a person of respectability and high social status in the course of his occupation (Sutherland, 1949). Crimes committed by corporations were also included. Sutherland originally presented his theory in an address to the American Sociological Society in an attempt to study two field, crime and high society which had no previous empirical correlation. White collar criminals attributed different characteristics and motives than typical street criminals. He used the concept to challenge conventional stereotypes and theories.

Assumptions of this theory is that prosecutors and judges are more lenient on white-collar as opposed to street criminals. The legal case which advanced this was; He noted that in his time, less than two per cent of the persons committed to prison in a year belong to the upper class. His goal was to prove a relation between money, social status and likelihood of going to jail for a white collar crime, compared to more visible, typical crimes.

Criticisms of White collar crime theory

Sutherland‟s definition of white collar Crime has evoked criticism from certain quarters. Coleman and Moynihan pointed out that the lack of definite criteria for determining who are „persons of respectability and status‟ has made Sutherland‟s definition of white collar crime most controversial.

It seems likely that what Sutherland meant by this is absence from convictions for crimes other than white collar crimes. The element of „high social status‟ as used in the definition also leads to confusion: Clearly it has far narrower meaning than is given to that term in everyday usage.

Sutherland himself did not stick to this meaning and included thefts and frauds committed by middle or even lower middle-class workers in the course of their employment or work. Some critics have suggested that such crimes should have been called as „occupational crimes‟ instead of being termed as „white collar crime‟.

It is further argued that in fact the important element in the definition of white collar crime is not the socio-economic status of the individual, but rather the type of crime and the circumstances of its commission. These usually include pilfering, false accounting, bribery, embezzlement among others.

Tax-evasion is not an authentic white collar crime, at least in terms of Sutherland‟s definition because although associated with work, it is not committed in the course of an occupation. Some critics further allege that such violations come within the purview of the Special Commissions, Tribunals and Boards instead of normal criminal justice administrators.

2.5 Empirical Studies

There are several empirical studies on forensic accounting and fraud detection and prevention. Many of these studies draw evidence from developed economies like the United States of America, the United Kingdom and Canada. Empirical evidence also exists on the relationship between forensic accounting and fraud detection. The following studies show the methodology, sample and main findings of these studies.

Bassey, (2018), This research focused on forensic accounting as it affects the management of fraud in microfinance institutions in Cross River State. Study adopted a survey research design. Data were collected from both primary and secondary sources and analysed using the ordinary least square technique. It is concluded that forensic accounting plays a significant role in the prevention of crimes and corruption in the selected micro finance banks in Calabar, Cross River State. Managements of micro finance banks in Calabar should develop more interest in forensic accounting for monitoring and investigating suspected culprits in fraud cases. Managers appointed to manage and run microfinance banks should be tested and the integrity ad trustworthiness should be proven before they are appointed to manage and oversee the affairs and the activities of the banks.

Okafor and Agbiogwu (2016) conducted a study on the effect of forensic accounting skills on the management of Bank fraud in Nigeria. In their research work, they adopted non-probability sampling technique to select the five (5) commercial Banks used as population for the study. Based on the analysis of variance (ANOVA) the findings of their study reveals that possession of basic forensic skills significantly reduces the occurrence of fraud cases in the banking sector and that there is a significant difference between services of forensic accountants and External auditors, and that the presence of forensic accountants in Banks can aid in reducing fraud cases.

Adeniy, (2016),examined the effect of forensic auditing on financial fraud in Nigerian (DMBs). The study adopted cross sectional survey design. The population of the study comprised the staff of banks and audit firms in Abeokuta, Ogun State. The study used purposive sampling technique for questionnaire administration while logistic regression analysis was used for data analysis. The study concluded that the application of forensic audit to tackle financial fraud in Nigerian (DMBs) is still at the infant stage.

Onodi, Okafor, and Onyali (2015), examined the effect of forensic investigation methods in corporate fraud deterrence in Nigerian Banks. This study adopted a survey research design and data from primary source were collected through interviews and administration of questionnaires, while secondary source consists of reports on fraud and forgery in the banking sector. Statistical tools used to analyze the data include percentages, mean score, frequency tables, regression analysis and Z-test. The result revealed that there is a significant relationship between the forensic investigative methods and corporate fraud deterrence. The finding revealed that expert services of forensic investigators are normally required in the prosecution of fraud, but majority of the audit and accounting personnel in Nigeria are suffering from poor perception and knowledge of forensic investigative methods.

Akenbor and Ironkwe (2014) examined the relationship between forensic auditing and fraudulent practices in Nigerian public institutions. The survey method of research design was adopted in generating the necessary data. Population of the study consisted of 12 public institutions in Rivers State, Nigeria. In order to gather the data for the study, a structured questionnaire was administered on the internal auditors and chief accountants of the selected public institutions. The data generated for the study were analyzed with frequencies and percentages, while the stated hypotheses were statistically tested with the Pearson Product Moment Correlation Coefficient, which was computed with the aid of the Statistical Packages for Social Sciences (SPSS) Version 17. The findings suggested that both the proactive and reactive forensic auditing techniques have a negative significant relationship with fraudulent practices in Nigerian public institutions.

Zachariah, Masoyi, Ernest, and Gabriel (2014), work on the topic titled "application of forensic auditing in reducing fraud cases in Nigeria money deposit Banks". The study analyzed the trend in fraud cases from 2001-2012, included are the amounts involved in fraud, the most frequent types of fraud, and the losses sustained by Banks. The descriptive analysis revealed that there are up and down movements in fraud cases. Since Banks continually lose huge sums of money as a result of the inability of the auditors and the supervisory regulators to curtail the trend, there is therefore the need to devise different means of tackling frauds in the Banks. The study therefore suggested employment of forensic auditing in

Nigerian Banks by amending the existing status, in such a way that forensic auditors are included in the audit team.

Okoye and Gbengi (2013), conducted a research titled "forensic accounting: a tool for fraud detection and prevention in the public sector of Kogi State". The population consists of 5 ministries with a total of 5,015 respondents of which 370 formed the sample size. The use of ANOVA was used in testing the hypotheses. It was discovered that forensic accounting significantly reduces occurrence of fraud in the public sector.

III. RESERCH METHODOLOGY

3.1 Introduction

This chapter addresses the research design, target population, sample of the study, sources of data, sampling technique and sample size, data collection techniques, data collection instruments, validity and reliability, and data analysis involved in the whole process of this research.

3.2 Research Design

This work adopted an ex-post facto research design which is undertaken after the events have taken place and the data are already in existence. It is used in a systematic empirical study in which the situation necessitating the study already exists or has taken place. It is also used because of the availability of audited financial statements of the sampled companies.

3.2.1 Population of the Study

The population to be used in any study is the number of units or elements under investigation and the population to choose also depends on the nature of the problem to be investigated. Kothari (2003) defines population as the total enumeration of the subjects under investigation.

The population of this study is made up of all the twenty (20) listed listed deposit money banks in Nigerian Stock exchange. The entire population was used as sample size for the study.

3.3 Source of Data Collection

The study made use of secondary source of data. The data for this study was collected from the Nigerian Deposit Insurance Corporation (NDIC), especially the comprehensive income statements and statements of financial position of the sampled companies submitted to the NDIC between 1994 – 2019 to arrive at the result and findings of this study.

3.4 Techniques of Data Analysis

The data obtained from these firms were tabulated and analysed by first of all calculating the various ratios which are used in carrying out the analysis of this study. Time series data was considered in this study because of the smallness of the sample size. The tools used for analyses of this study and their relevance are considered in this section. Autoregressive Fractionally Integrated Moving Average (AFRIMA) Modelwas the tools used in analysing the collected data.

Descriptive analysis will be first applied to describe relevant aspect of forensic accounting and provide detailed information about each relevant variable. Correlation models, specifically Pearson correlation will be applied to measure the degree of association between different variables under consideration while regression analysis will be applied to examine the relationship of the independent variables with the dependent variable to know the effect of the selected independent variable on fraud. By using this method, the researcher will be able to identify the significance of each explanatory variable to the model and also the significance of the overall model.

3.5 Model Specification

An empirical model is formulated which is based on the use of panel data methodology.

The model in its econometric form is shown below;

Y = X

Where;

Y = Dependent variable

X = Independent variable

The general form of the Autoregressive Fractionally Integrated Moving Average (AFRIMA) Model data analysis model is specified as:

$$Yt! = \alpha 0 + \beta\ Ft! + \mu \ldots \ (1)$$

Where:

Yt!	=	Dependent variable
α0	=	Constant
β	=	is the coefficient of the explanatory variable
Ft!	=	explanatory variable in the estimation model
μ	=	error term.

Functional Form

FA = *f*(ATMF, WBF, FCF) -(i)

Testable Form

The regression models are as stated below:

$$FA_{it} = \beta_0 + \beta_1 ATMF_{it} + \beta_2 WBF_{it} + \beta_3 FCF_{it} + \mu_{it}$$

Where:

a. Dependent Variables

FA = Forensic Accounting

b. Independent Variables

ATMF	=	Automated Teller Mechine Fraud
WBF	=	Web Based Fraud
FCF	=	Foreign Currency Fraud

β = Co-efficient of Regressors σ = Error Term

IV. DATA PRESENTATION, ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents and discusses the data collected in the course of the study. It consists of the presentation and analysis of the panel data extracted from the financial statements of the listed deposit money banks in Nigeria. Multiple regression analysis has been used to estimate the relation between the independent variables (ATMF, WBF, and FCF) and dependent variable Forensic Accounting (FA). The chapter starts with descriptive statistics, followed by diagnostic tests and regression analysis. It concludes with discussion of major findings.

4.2 Data Presentation and Analysis:

4.2.1 Descriptive Statistics

This section presents the descriptive statistics of the data for the study. It shows the Mean, Standard deviation (SD), Minimum (MIN), Maximum (MAX), and Variance (VAR) of data variables. The result of descriptive statistics is presented on Table 4.1.

Table 4.1: Descriptive Statistics

Variables	N	Mean	S.D	Min	Max
FA	26	20907.5	39364.76	782.23	199188
ATMF	26	311	552.50	20	2640
WBF	26	738.63	696.96	201	3850
FCFT	26	156.19	404.63	20	1930

Source: STATA 14.2 Output

Table 4.1 shows that the mean Forensic Accounting (FA) of ₦20.907 billion with a standard deviation (SD) of ₦39.364 billion which is higher than the mean for the period under study. The FA also has a minimum and maximum value of ₦782.23billion and ₦199.188billion respectively. The table also shows that the mean ATMF in the deposit banks for the period under study was ₦0.311 billion with a SD of ₦0.552billion which is higher than the mean, indicating a wide variation in ATMF among the banks for the period covered in the study. ATMF also has a minimum and maximum value of ₦0.020 billion and ₦2,640 billion respectively. Thurthermore, the result revealed that WBF on average for the period was ₦0.73862billion, with SD of ₦0.696 billion which is lower than the mean. This indicates a low variation in WBF among the deposit money banks for the period covered in the study. The result further revealed that WBF has minimum and maximum value of ₦0.201billion and ₦3.850billion respectively. Finally, the data for Foreign Currency Fraud (FCF) on average was ₦0.1561billion and SD of ₦0.4046billion. The SD is greater than the mean indicating a wide variation in FCF for the period under study.The statistics also revealed that FCF has a minimum and maximum ₦0.02 billion and ₦1.930 billion respectively.

4.2.2 Correlation Coefficients

This section contains the relationship or levels of association among the variables of the study. The summary of the correlation coefficients and p-values are presented on Table

Table 4.2: Correlation Matrix:

	FA	WBF	FCF
FA	1.0000		
WBF	0.3239	1.0000	
FCF	0.7466	0.5800	1.0000

Source: STATA 14.2 Output

Table 4.2 presents the strength and type of relationship that exists between the study independent variables. A correlation coefficient which is 0.90 and above is considered very high, 0.75-0.89 is considered high and could cause problems in the result (Akpa, 2011). From table 4.2, there exist no high correlation among the study variables as there exist no correlation that is above 75%.

4.3 Diagnostic Tests

To ensure that the data for this study is fit for the model, the study conducted data normality test as well as a test for multicolinearity and heteroscedasticity among explanatory variables. This section presents the result of data normality test and VIF test, while test for heteroscedasticity is presented along with the regression result in section 4.4.

4.3.1 Data Normality Test

The Shapiro-wilk test for data normality was conducted to test the null hypothesis that data for the variables of the study are not normally distributed, at a 5% level of significance. The result of the test was shown in Table 4.3.

Table 4.3: Result of Shapiro-wilk Test for Data Normality

Variables	OBS	W	V	Z	Prob>z
FA	26	0.9837	0.464	-1.576	0.9425
ATM	26	0.7325	7.650	4.170	0.0000
WBF	26	0.8019	5.664	3.554	0.0002
FCF	26	0.6727	9.360	4.583	0.0000

Source: STATA 14.2 Output

Table 4.3 has shown that FA has the W coefficient of 0.9837, which is insignificant at the p-value of 0.9425; ATM has the w coefficient of 0.7325 at an significant p-value of 0.0000; WBF has the w coefficient of 0.8019, which is significant at the p-value of 0.0002; FCF has the w coefficient of 0.6727 atsignificant p-value of 0.0000. Therefore, the study accepts the null hypothesis that data for FA is not normally distributed and accepts the alternate hypothesis which states that data for ATM, WBF and FCFp-value of 0.0000; are normally distributed. Consequently, these abnormalities in FA indicate that these data values require a more generalized regression analysis.

4.3.2 Test for Multicolinearity

The Variance Inflation Factor (VIF) test was conducted to check for multicolinearity among explanatory variables of the study. It was expected that the VIF for all independent variables should be less than 5, while their tolerance levels should be greater than 0.10. The result of the VIF test is shown on Table 4.4.

Table 4.4: Result of Variance Inflation Factor (VIF) Test for Multicolinearity

Variable	VIF	1/VIF
FCF	3.18	0.3148
ATM	2.35	0.4246
WBF	1.57	0.6367
Mean VIF	2.37	

Source: STATA 14.2 Output

Table 4.4 shows that FCF has a VIF of 3.18 and tolerance level of 0.3148; the VIF of ATM is 2.35at the tolerance level of 0.4246; while the VIF of WBF is 1.57at the tolerance level of 0.6367. The Table also shows the mean VIF is 2.37. In each case, the VIF is less than 5 and tolerance level is greater than 0.10. This result has shown that there is absence of perfect multicolinearity among the independent variables, indicating the fitness of the data variables for the model of the study.

4.4 Regression Analysis and Test of Hypotheses

This section discusses the time series analysis using the Autoregressive Fractionally Integrated Moving Average (AFRIMA) Model to test the formulated hypotheses. Results of these tests are presented on Table 4.5.

Table 4.5: Result of AFRIMA for FA

Variables	Coefficient	Z	P>/t/
ATM	-18.3158	-3.38	0.001
WBF	-5.5323	-3.52	0.000
FCF	17.8882	2.21	0.027
Cons	4.6256	12.98	0.000
ARMA ar: L1	0.5133	0.07	0.942
L2	0.3218	0.11	0.914
L3	0.0145	0.01	0.996
ma:L1	-0.0939	-0.01	0.989
Sigma	0.2891	4.86	0.000
Prob > F Obs	0.0000 26		

Source: STATA (Version 14.2) Output

Table 4.6 contains the result of Autoregressive Fractionally Integrated Moving Average (AFRIMA)for fitted values of FA. The total number of observations for the time series analysis was 26 (that is 1994to 2019). The overall equation is significant at 0.0000 (below 1%) level, indicating that the model is fit to be used for interpretation and the results can be generalised.

ATM fraud has a negative coefficient of 18.3158, z-value of -3.38 and p-value of 0.001. This showed that FA has a negative and significant affects ATM fraud. This imply that for every unit increase in forensic accounting, there isa significant reduction in ATM fraud by 3.38%. This also means that forensic accounting can significantly be used in reduction of ATM related fraudulent issues among deposit money banks in Nigeria. The study also revealed web based fraud (WBF) with a negative coefficient of 5.5323at the z-value of -3.52and p-value of 0.000. This indicates a significant decrease in WBF via the instrumentality of Forensic Accounting (FA) by 3.52%. Similarly, the study revealed positive and significant relationship between FA and Foreign Currency Fraud (FCF) with a coefficient of 17.8881, and z-value of 2.21 with p-value of 0.027<5% level of significance. This implies that any increase in FAwill lead to a corresponding increase in foreign currency fraud by 2.21%.

4.5 Test of Hypotheses

In this section, the hypotheses formulated earlier in chapter one are tested based on the OLS robust regression results presented in Table 4.7. The level of significance for this study was 5% and the decision rule for testing the hypotheses was to accept (or reject) the null hypotheses based on the P- value. If the p-value is significant at 5%, accept that the variable is significant else it is not significant.

Ho$_1$: The use of forensic accounting has no significant effect on automated teller machine/card related fraud in the Nigerian deposit Money banks.

Table 4.6 shows the z-values and the associated *p*-values for the test of this hypothesis. The critical value of z-statistics is ±1.96 at 95% confidence level. Given that the calculated z-value of -3.38 which is above ±1.96, and *p-value* = 0.001 which is below 5%. However, future projection revealed z-statistics of 0.07 and p-value of 0.942. This result reject the null hypothesis and concludes that the use of forensic accounting has significant effect on automated teller machine/card related fraud in the Nigerian deposit Money banks in the short-run but will have no significant effect on automated teller machine/card related fraud in the Nigerian deposit Money banks based on future projection**.**

Ho$_2$: The use of forensic accounting has no significant effect on web base/internet related fraud in the Nigerian deposit money banks.

Table 4.6 shows the z-values and the associated *p*-values for the test of this hypothesis. The critical value of z-statistics is ±1.96 at 95% confidence level. Given that the calculated z-value of -3.52 which is above ±1.96, and *p-value* = 0.000 which is below 5%. However, future projection revealed z-statistics of 0.11 with p-value of 0.914. This result reject the null hypothesis and concludes that the use of forensic accounting has significant effect on web base/internet related fraud in the Nigerian deposit Money banks in the short-run but will have no significant effect on web base/internet related fraud in the Nigerian deposit Money banks based on future projection**.**

Ho3: The use offorensic accounting has no significant effect on foreign currencies theft in the Nigerian Deposit Money Banks.

Table 4.6 shows the z-values and the associated *p*-values for the test of this hypothesis. The critical value of z-statistics is ±1.96 at 95% confidence level. Given that the calculated z-value of 2.21 which is above ±1.96, and *p-value* = 0.027 which is below 5%. However, future projection revealed z-statistics of 0.01 and p-value of 0.996. This result also reject the null hypothesis and concludes that the use of forensic accounting has significant effect on foreign currencies theft in the Nigerian deposit Money banks in the short-run but will have no significant effect on automated teller machine/card related fraud in the Nigerian deposit Money banks in the nearest future based on future projection**.**

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This is the last chapter of the research. The chapter presents a summary of the finding and then draws conclusions based on the research objectives and hypothesis. Recommendations are also made in this chapter. The contributions of the research to knowledge are also highlighted.

5.2 Summary of Findings

In this research, hypotheses were formulated, data were collected and analyzed using t-test. The statistical package of social science program aid was used in the computation and analysis of the data. The following findings are therefore summarized below;

i. The use of forensic accounting has significant effect on automated teller machine/card related fraud in the Nigerian deposit Money banks in the short-run but will have no significant effect on automated teller machine/card related fraud in the Nigerian deposit Money banks based on future projection**.**

ii. The use of forensic accounting has significant effect on web base/internet related fraud in the Nigerian deposit Money banks in the short-run but will have no significant effect on web base/internet related fraud in the Nigerian deposit Money banks based on future projection**.**

iii. The use of forensic accounting has significant effect on foreign currencies theft in the Nigerian deposit Money banks in the short-run but will have no significant effect on automated teller machine/card related fraud in the Nigerian deposit Money banks in the nearest future based on future projection**.**

5.3 Conclusion

This study set out to determine the application of forensic accounting as a tool for fraud prevention in the Nigerian deposit money bank. Previous studies were reviewed and responses were analyzed and tested. Based on this, the study discovered that Forensic accounting is an effective tool for addressing financial crimes in the banking system.. Thus, the forensic accounting is an effective tool for combating financial crimes in the banking system. After all, the forensic accountants are expert thus, can easily detect and prevent fraudulent activities in Nigerian deposit money banks irrespective of the challenges they faced in carrying out their professional duties.

5.4 Recommendations

Consequent upon several revelations from the research conducted, there is need to make some recommendations, which are stated below;

Action and Recovery: Appropriate sanctions should be applied when fraud is detected. Where persecution is considered to be the appropriate sanction, proper Forensic procedures need to be followed during investigation and trained experts like the Professional Forensic Accountants should conduct the investigation, where there is evidence of fraud, appropriate disciplinary action in accordance with the Provision of Public Service Rules should be implemented. Criminal prosecution may also be instituted as well as civil action to recover any losses of public money or property. Nigerian deposit money bank is hereby encouraged to learn from what others are doing on fraud prevention, detection and investigation using state-of-the-art technique called “Forensic Accounting”.

Training: Training and guidance is vital in maintaining the effectiveness of the strategy for the detection and prevention of fraud and corruption and its general credibility. The government needs to support induction and work related training, particularly for employees involved in internal control system and the accounting sector, to ensure their responsibilities and duties are regularly highlighted and reinforced and that best practices is followed across organizations service. Significantly, Forensic Accounting or any anti-fraud and corruption strategy can only work if heads of departments and senior managers are committed to it. The anti-graft agencies like the EFCC and the ICPC should ensure they have their technical, investigative and accounting staff trained in the field of Forensic Accounting. Adequate structure and mechanism must be put in place.

Standards: For Nigerian deposit Money banks to properly embrace the practice of Forensic Accounting, the standard setting process should be modernized and streamlined to ensure that guidelines can be altered, created, or eliminated as changing conditions dictate. Accordingly, the state should embrace the practice or implementation of the Nigerian Accounting Standard Board (NABS) guideline. This should be strengthened for accounting standard setting toward broad principle aimed at elevating the quality of financial report. This if done will enable the Professional Forensic Accountant to operate more independently and effectively.

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FORENSIC ACCOUNTING AND FINANCIAL REPORTING QUALITY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

Abstract

Economic volatility and stakeholder dissatisfaction such as inadequate regulatory monitoring, public sector inefficiency, corporate governance issue, financial reporting irregularities, weakness in traditional auditing widespread corruption and financial mismanagement have led requests for improved financial system protection, necessitating the implementation of forensic accounting. This research was initiated to explore the impact of forensic accounting on financial reporting quality in Nigerian listed deposit money banks (DMBs). The longitudinal research included 10 DMBs listed on the Nigerian Exchange Group as of December 31, 2022. The rationale behind selecting 10 DMBs is based on DMBs with largest asset base. The data which includes investigative accounting and litigation support services was examined by descriptive statistics and ordinary least squares regression. This study discovered that investigative accounting has a positive and significant (coefficient = 0.0034, p-value = 0.0000) effect on the financial reporting quality of listed DMBS in Nigeria. The study also discovered that litigation support services have a positive and significant effect (coefficient = 0.0007, p-value = 0.0000) on the financial reporting quality of listed DMBS in Nigeria. On overall result shows that forensic accounting has a negative and significant effect on the financial reporting quality of listed DMBS in Nigeria. This research concludes that forensic accounting assist DMBs improve financial reporting quality. It was recommended that DMBs priorities the adoption and implementation of forensic accounting practices. This can be achieved by creating a dedicated forensic accounting unit within the bank to handle all fraud detection and prevention activities, implementing a robust internal control and investing in forensic accountants' training and continuous professional development, as well as providing financial professionals with the necessary skills and tools.

Keywords: *Forensic Accounting Practices, Investigative Accounting, Litigation Support Service, Financial Reporting Quality*

INTRODUCTION

Accurate and transparent financial reporting is vital to the integrity and efficiency of financial markets in Nigeria and around the globe (Wilson, 2024). It provides stakeholders with critical information about a company's financial health, enabling them to make informed choices (Ede et al., 2024). High-profile corporate scandals, such as those involving Enron and WorldCom, highlighted fundamental flaws in typical auditing systems, underscoring the need for more effective tools to detect and address fraudulent activities (Naz & Khan, 2024). Furthermore, the

2008 global financial crisis emphasized the need for increased scrutiny and accountability in financial reporting, leading to major legislative revisions and stricter financial supervisory systems (Aliyu et al., 2024). Additionally, the scandals of Oceanic Bank and Intercontinental Bank, a prominent Nigerian bank in 2009 emphasized the need for increased scrutiny and accountability. These scandals involved massive financial fraud and mismanagement which led to the prosecution of top executives and reinforced the role of forensic accounting in safeguarding the integrity of financial systems (Esonwune & Ogiri, 2024). In same vein, the catastrophic of 2006 Cadbury Nigeria Plc case where financial misstatements were uncovered, leading to the restatement of its financial statements led to financial losses for investors, damaged reputations, and public trust in the financial system (Đukić et al., 2023). In Nigeria, inadequate regulatory monitoring, inability to comply with international rules, and lack of resources for comprehensive audits contribute to long-term concerns (Fabian & Onuora, 2022).

Forensic accounting has gained significant importance in Nigeria, particularly in the wake of global financial crises and specific corporate scandals. The need for enhanced scrutiny and accountability has driven the demand for forensic accounting practices to mitigate financial irregularities and restore trust in financial reporting. The global financial crisis exposed significant weaknesses in financial regulations and corporate governance (Oranefo & Ufaroh, 2024). Banks and financial institutions worldwide, including those in Nigeria, faced unprecedented scrutiny. The crisis highlighted the need for forensic accounting to detect and prevent fraudulent activities and financial misstatements (Kinyua, 2024). Similarly, the notable Cadbury Nigeria corporate scandals Instigated the role of forensic accounting in investigating the fraudulent activities, identifying inflated earnings, and providing evidence for legal proceedings (Offia & Ajuonu, 2024). This scandal underscored the necessity for robust forensic accounting practices to ensure the accuracy and reliability of financial information. Consequently, Offia and Ajuonu, (2024) stated that aspect of forensic accounting such as investigative accounting and litigation support helps to discovers flaws and irregularities in financial data that could otherwise go unnoticed.

LITERATURE REVIEW

Conceptual Review

Forensic Accounting Practices

Smith and Brown (2020) define forensic accounting as the practice of applying accounting, auditing, and investigative talents to detect and explore fraud and other financial misrepresentations in court proceedings. According to Adams and Suleiman (2021), forensic accounting is a specialization of accounting that focuses on scrutinizing financial data to find evidence of financial crimes such as fraud, embezzlement, or corruption. According to Jones and Patel (2023), forensic accounting is the use of accounting skills to evaluate financial statements and transactions for irregularities in order to provide evidence in legal and regulatory investigations. According to Obi and Nwankwo (2022), forensic accounting is the application of accounting principles and methods to legal concerns such as litigation support, fraud investigation, and dispute resolution.

It can be seen from various definitions that forensic accounting is a specialized field that combines accounting, auditing, and investigative skills to detect, analyze, and report financial misrepresentations and fraud. It involves scrutinizing financial data and transactions to uncover irregularities and provide evidence for legal and regulatory proceedings.

Investigative Accounting

Investigative accounting is a method that uses accounting knowledge and investigation skills to identify fraudulent activities and financial wrongdoing. It combines basic accounting skills with investigative methodologies, making it crucial for detecting financial misconduct. Investigative accountants are essential in analysing financial accounts and transactions to detect fraudulent conduct and provide evidence in court (Williams & Green, 2020). They also examine financial records using accounting and investigative skills to detect, analyze, and report fraudulent activities. Robinson and Khatib (2024) emphasize the integration of accounting and forensic investigation methodologies in investigative accounting, emphasizing the proactive role of investigative accountants in detecting and combating financial wrongdoing.

Litigation Support Services

According to Jackson and Miller (2020), litigation support services are professional services provided by accountants, financial experts, and consultants to assist legal teams in litigation proceedings. They help in examining, understanding, and presenting financial data during court procedures. Okafor and Nwankwo (2024) describe that these services include financial document preparation, analysis, asset evaluation, and expert witness evidence. They also combine accounting, auditing, and financial analysis to provide aid in legal disputes, ensuring accurate and trustworthy financial evidence. The merging of different accounting disciplines in litigation support services emphasizes the importance of accurate and trustworthy financial information in legal matters for fair and just solutions.

Financial Reporting Quality

Financial reporting quality relates to how properly financial statements depict a company's financial status, performance, and cash flows, enabling stakeholders to make informed economic decisions (Brown & Kaplan, 2020). Chukwu and Adeola (2021) define financial reporting quality as the degree to which financial reports offer clear, relevant, and verifiable information that correctly portrays the business's economic reality. Chukwu and Adeola (2021) highlight the clarity, utility, and verifiability of financial disclosures. Their idea highlights the necessity of financial statements correctly Eze and Nwankwo (2023) characterize financial reporting quality as the accuracy, consistency, and timeliness of financial information given in financial statements, enabling users to make choices based on the information. Johnson and White (2024) highlight a genuine and fair appraisal of the company's financial position.

Theoretical Review

Positive Accounting Theory (PAT)

PAT is an accounting theory that predicts businesses' reactions to innovative accounting rules based on their policy decisions. It seeks to explain the factors that influenced these decisions and anticipate their future based on facts rather than assumptions. PAT analyzes specific repercussions and reasons for spending, comparing revenue to expenditures to assess profitability. It is a departure from normative accounting, which is theory-based and allows daily practices to change while maintaining economic theories (Ball and Brown, 1968; Watts and Zimmerman, 1986). PAT analyzes accounting policy choices by studying relationships between organizations, owners, managers, and debt holders, aiming to maximize wealth rationally.

Positive Accounting Theory (PAT) and forensic accounting are interconnected through their shared focus on understanding and addressing financial behavior and reporting practices. PAT aims to explain and predict accounting choices by firms, often highlighting how management's incentives and economic consequences influence financial reporting. This theoretical framework helps forensic accountants identify patterns and motivations behind financial manipulations, making it easier to detect and investigate fraudulent activities. By applying PAT, forensic accountants can better anticipate potential areas of financial misrepresentation and devise more effective investigative strategies, thus enhancing the accuracy and reliability of their findings in legal and regulatory contexts.

Empirical Review

Akinadewo et al. (2024) conducted a longitudinal study on the impact of board qualifications on forensic accounting processes in publicly listed Nigerian Deposit Money Banks (DMBs). The study included fifteen DMBs listed on the Nigerian Exchange Group as of December 31, 2022. The results showed that board composition and skill significantly influence forensic accounting adoption, with board independence being positive but not statistically significant.

Almubaydeen et al. (2024) examined the effect of forensic accounting techniques on revealing income smoothing practices in Jordanian commercial banks. The study population consisted of all 13 Jordanian commercial banks listed on the Amman Stock Exchange from 2017 to 2021. The study found that applying proportions analysis technique had a statistically significant effect on revealing income smoothing practices in Jordanian commercial banks.

Daas and Zaid (2024) examined the impact of reactive and proactive audit methods on the quality of accounting information, with corporate governance as a moderating variable. The results indicated that reactive audit had a positive effect on all variables of the quality of accounting information, while proactive audit affected only the comparability feature.

Okorafor et al. (2024) investigated the influence of forensic accounting skills on fraud investigation in Nigerian electricity distribution firms, focusing on the Enugu Electricity Distribution Company. A descriptive survey research approach was used, with a sample size of 52. Multiple regression analysis was used to test hypotheses at a significance level of 5%.

Alaoubi and Almomani (2021) studied the influence of forensic accounting on the link between corporate governance and the quality of accounting information in Jordanian publicly listed firms. The study included certified accountants who were not associated with the organization.

Agboare (2021) explored the effect of forensic accounting on the discovery of financial wrongdoing within listed DMBs in Nigeria. The study found that implementing forensic accounting methods, such as examining financial transactions, conducting investigations, and filling up missing accounting records, considerably boosted the ability to identify financial crimes in Nigeria's listed DMBs.

Gap in Literature

Previous studies have focused on the impact of forensic accounting on financial reporting quality in Nigeria, Pakistan, Tanzania, and Nigeria. These studies used litigation support services, reactive auditing, proactive audit, corporate governance mechanisms, and investigative skills to measure financial reporting quality. However, there is a gap in the literature, as most studies only examine forensic accounting on corporate governance and accountability. Additionally, primary data collected through surveys and interviews may introduce self-reporting biases and inaccuracies. This study aims to fill this gap by leveraging secondary data sources, such as publicly available financial reports, to analyze the impact of forensic accounting on financial reporting quality in listed deposit money banks in Nigeria. By leveraging secondary data, this study aims to fill this gap and contribute to the understanding of forensic accounting in financial reporting.

Given the above considerations, the null hypotheses will be stated as follows:

H01: Investigative Accounting has no significant effect on Financial Reporting Quality of Listed DMBs in Nigeria.

H02: Litigation Support Services has no significant effect on Financial Reporting Quality of Listed DMBs in Nigeria.

Conceptual Framework

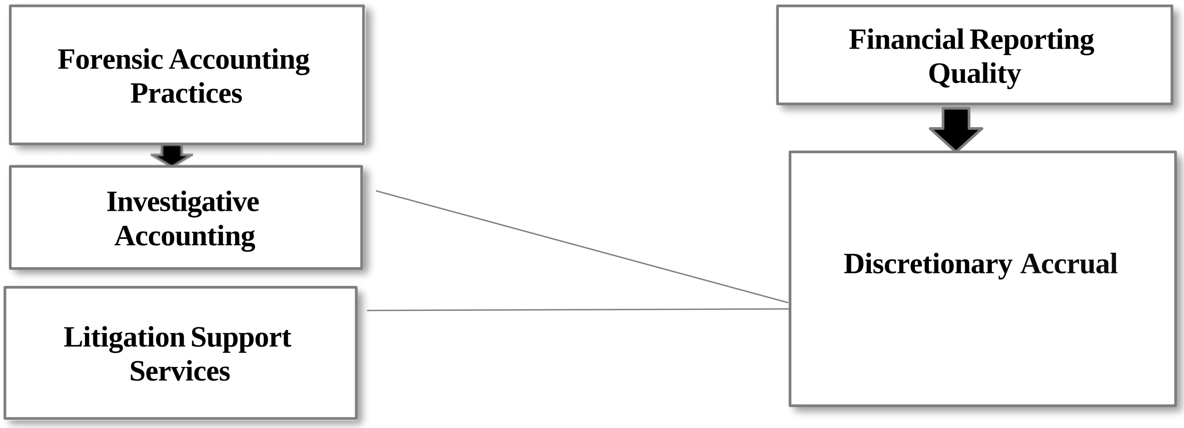

Figure 1. Conceptual framework showing the link between forensic accounting practices and financial reporting quality

Source: Author's design (2024)

METHODOLOGY

The study analyzed data from 2013 to 2022 on 10 out of 15 listed DMBs on the Nigerian Exchange Group (NGX) using an expost facto research technique. The data was gathered from administrative records, financial accounts, annual reports, and audited financial statements. The sample consisted of 10 registered DMBs in Nigeria. The data analysis included descriptive statistics, correlation analysis, and ordinary least squares regression analysis.

Model Specification

The model specification was adopted from Maec (1968) and subsequently modified to align with the specific objectives of the study as demonstrated by Ogbonna et al. (2020). This modification process is critical to ensure that the model adequately addresses the unique aspects and variables pertinent to the current research. The adoption and modification of Maec's (1968) model is justified based on its foundational framework, which allows for the inclusion of forensic accounting practices as critical determinants of financial reporting quality.

$FRQ_{it} = f(FAP)$ .... (i)

$FRQ_{it} = f\ (IA, LSS)$ .... (ii)

$FRQ_{it} = ai + \beta IA_{it} + \beta 2LSS_{it} + \varepsilon_{it}$..(iii)

Where: FRQ= Financial Reporting Quality, FAP = Forensic Accounting Practices, IA= Investigative Accounting, LSS = Litigation Support Services, B1 – β4 = coefficient of independent variables, ε_{it} = error terms of firm i and time t.

Measurement of Variables

There were two independent variables and one dependent variable to be used in this study, as defined, and measured below:

Table 1: Measurement of Variables

S/N	Variable	Description	Measurement	Source
1	Financial Reporting Quality	the degree to which financial statements accurately reflect the company's financial position, performance, and cash flows, enabling stakeholders to make informed economic decisions	Accrual Quality (AQ): Profit Before Extra-Ordinary Items – Net Operating cash flow from Statement/Average Total Assets (Modified Dechow & Dichev model,2002)	Ibanichuka et al. (2020)
2	Investigative Accounting	the practice of using accounting expertise and investigative skills to uncover fraudulent activities and financial misconduct	Monetary value of investigated fraud cases by each bank for the period under review (Natural Logarithm used to convert absolute valuesto real values)	Ibanichuka et al. (2020)
3	Litigation Support Services	specialized accounting and financial services provided to assist legal teams in the analysis, interpretation, and presentation of financial data during legal proceedings	Number of prosecuted cases in the court for or against eachbank for the period under review.	Johnson et al. (2021)

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 presents the study variable's descriptive statistics. The average FRQ of 0.0202 and median of 0.0200 suggest a relatively stable central tendency with minimal deviation, indicating that most observations are clustered around the mean. The standard deviation of 0.0035 reflects minimal variability around the mean, which implies that the FRQ values are closely distributed. This low variability suggests that the data points are consistently aligned with the central trend, potentially indicating a robust measurement of financial reporting quality. The skewness of -0.0154, close to zero, confirms a nearly symmetric distribution. This near symmetry supports the assumption of normality, enhancing the reliability of parametric statistical tests. A kurtosis value of 2.3764 indicates a distribution with a lower peak and thinner tails compared to a normal distribution. This implies fewer extreme values or outliers. While this might enhance the robustness of the analysis by reducing the impact of outliers, it also means that the FRQ data may lack extreme values that could be relevant in certain analyses.

Table 2: Descriptive Statistics

	FRQ	IA	LSS
Mean	0.0202	12.2993	10.1800
Median	0.0200	12.3000	10.0000
Maximum	0.0280	14.1000	17.0000
Minimum	0.0120	10.8500	3.0000
Std. Dev.	0.0035	0.8543	3.1953
Skewness	-0.0154	0.1468	-0.0356
Kurtosis	2.3764	1.8823	2.2035
Jarque-Bera	1.6245	5.5648	2.6645
Probability	0.4439	0.0619	0.2639
Observations	100	100	100

Source: Author's computation (2024)

The average IA of 12.2993 and median of 12.3000 indicate that the data is centred around these values, suggesting consistency in the measurement of investigative accounting practices. The standard deviation of 0.8543 signifies moderate variability. This moderate variation is important as it reflects the diversity in investigative accounting practices among the observations, which could influence the generalizability of the study's findings. The skewness of 0.1468 indicates a slight right skew. This suggests that there might be a small number of higher values, which could be relevant for understanding the distribution of investigative accounting practices. A kurtosis value of 1.8823 denotes a distribution with a flatter peak and thinner tails. This indicates a more uniform spread of data with fewer extreme values. The average LSS cost of

10.1800 and median of 10.0000 show that the central tendency is stable, with costs clustering around these values. The high standard deviation of 3.1953 indicates substantial variability in litigation support costs. This high variability can influence the robustness of the analysis by introducing a broader range of values, which may impact the reliability of any conclusions drawn regarding the effect of LSS. The skewness of -0.0356 reflects a slight left skew, suggesting that there are a few lower values in the dataset. This might indicate that a portion of the data is concentrated at the lower end of the scale. The kurtosis value of 2.2035 shows a flatter distribution with fewer extreme values. This could imply that extreme costs are rare, potentially limiting the impact of high-cost outliers on the overall analysis but also possibly missing significant anomalies.

Pre-Estimation Test

Pairwise Correlation

Table 3 presents a correlation analysis of three variables: Financial Reporting Quality (FRQ), Investigative Accounting (IA), and Litigation Support Services (LSS). The correlation coefficients show a strong positive relationship between FRQ and IA, with a probability value of 0.0000, indicating statistical significance. The correlation coefficients also show a strong positive relationship between FRQ and LSS, with a probability value of 0.0000, confirming the statistical significance of these relationships. The analysis reveals that as one variable increases, the others tend to increase as well, confirming the statistical significance of these relationships.

Table 3: Correlation Matrix

Correlation Probability	FRQ	IA	LSS
FRQ	1.0000		
IA	0.8914	1.0000	
	0.0000	-----	
LSS	0.9005	0.9242	1.0000
	0.0000	0.0000	-----

Source: Author's computation (2024)

The strong positive relationships suggest that investing in investigative accounting practices and litigation support services can significantly enhance financial reporting quality.The high correlation coefficients among FRQ, IA, and LSS raise the potential issue of multicollinearity. Multicollinearity occurs when independent variables in a regression model are highly correlated, which can lead to inflated standard errors and unreliable coefficient estimates. In this case, the strong correlations between IA and LSS, as well as between these variables and FRQ, suggest that multicollinearity might be present. Multicollinearity can affect the stability and interpretability of regression coefficients. It becomes challenging to determine the individual effect of each predictor variable on the dependent variable (FRQ) when the predictors are highly correlated. To diagnose and address multicollinearity, the study carried out a

Variance Inflation Factor (VIF) for each independent variable in the regression model. A VIF value above 10 typically indicates problematic multicollinearity

Unit Root Test

The Augmented Dickey Fuller (ADF) was used to conduct a unit root test on all variables, ensuring that each firm in the panel was treated as different from others. The results showed that all selected data series were stationary at level, rejecting all null-hypotheses, as each series' probability value consistently yielded less than 5%.

Table 4 Unit Root Test

Variable	T-Statistics	P-Value	Order of Integration	Decision
FRQ	-10.1410	0.0000	I(0)	Stationary
IA	-8.29172	0.0000	I(0)	Stationary
LSS	-5.29572	0.0000	I(0)	Stationary

Source: Author's computation (2024)

Multicollinearity Test

The study tested for multicollinearity, affecting model consistency and efficiency. Using variance inflation factor (VIF), all variables had a VIF below 10, indicating no multicollinearity issue.

Table 5. Variance Inflation Factor

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
IA	1.97E-07	4.4190	6.85688
LSS	1.41E-08	7.1599	6.85688
C	1.91E-05	9.6450	NA

Source: Author's computation (2024)

Model Estimate of The Effect of Forensic Accounting on Financial Reporting Quality in Listed Deposit Money Banks in Nigeria.

The study examines the impact of forensic accounting on financial reporting quality in Nigerian listed deposit money banks. The results show that the explanatory variables jointly explain 85.8% of the total variations in financial reporting quality. The Hausman-specification test, serial correlation, and Panel Cross-section Heteroskedasticity test were used to determine the model's robustness. The results indicate a negative and significant effect between forensic accounting and financial reporting quality in Nigeria. The regression analysis was subjected to an in-depth test using panel corrected standard error (PCSE) regression to address the heteroskedasticity problem. The results suggest that forensic accounting has a negative impact on financial reporting quality in Nigerian banks. The results reveal a significant negative effect of forensic accounting on financial reporting quality, which contradicts the hypothesis that forensic accounting practices would positively impact financial reporting quality. The negative effect might be due to challenges in the implementation of forensic accounting practices. These practices are poorly executed and there is a lack of integration with the overall financial reporting system which made their intended positive impact on reporting quality to be undermined.

Test of Hypotheses

Hypotheses 1: Investigative Accounting has no significant effect on Financial Reporting Quality of Listed DMBs in Nigeria.

As shown in Table 6, investigative accounting has a significant positive impact on the financial reporting quality of listed Deposit Money Banks (DMBs) in Nigeria. This is in line with theoretical expectations and empirical evidence in forensic accounting literature. Investigative accounting involves a thorough examination of financial records to uncover fraud, mismanagement, or inaccuracies, enhancing the quality and reliability of financial reports. This process identifies fraudulent activities, leading to their rectification and prevention, which enhances the accuracy of financial statements. Investigative accounting often reveals weaknesses in internal controls, prompting banks to strengthen these controls and improve overall financial reporting. Recent studies support the significant impact of investigative accounting on financial reporting quality. Enofe et al. (2022) found that Nigerian banks utilizing investigative accounting techniques experienced a notable reduction in fraud incidents, leading to more reliable financial statements. Akenbor and Ibanichuka (2021) found that banks employing robust investigative accounting practices reported higher financial reporting quality due to the detection and rectification of financial discrepancies.

Hypotheses 2: Litigation Support Services has no significant effect on Financial Reporting Quality of Listed DMBs in Nigeria.

As shown in Table 6, litigation support services significantly improve the financial reporting quality of listed Deposit Money Banks (DMBs) in Nigeria. These services provide financial expertise during legal disputes, identifying and correcting inaccuracies or fraudulent activities in financial statements. This enhances the quality of financial reporting and acts as a deterrent against fraudulent activities. The involvement of forensic accountants in litigation processes increases the accountability of financial managers, who are more likely to adhere to accurate reporting practices to avoid legal consequences. Forensic accountants also provide critical insights during the discovery phase of legal proceedings, presenting expert testimonies that highlight inconsistencies or confirm the integrity of financial information. This process aids in resolving disputes and sets a precedent for stringent financial practices within the organization. Empirical studies have shown that Nigerian banks receiving litigation support services reported higher financial reporting quality due to the thorough examination of financial records during legal proceedings.

Table 6: Panel Corrected Standard Error Regression.

Eq Name:	Pooled OLS	Fixed Effect	Random Effect	PCSE
Method:	LS	LS	LS	LS
Dep. Var:	FRQ	FRQ	FRQ	FRQ
IA	0.0017	0.0034	0.0017	0.0034
	[0.0003]	[0.0000]	[0.0002]	[0.0000] *
LSS	0.0006	0.0007	0.0006	0.0007
	[0.0000]	[0.0000]	[0.0000]	[0.0000] *
C	-0.0062	-0.0290	-0.0062	-0.0290
	[0.1595]	[0.0002]	[0.1485]	[0.0000] *
Observations:	100	100	100	100
R-squared:	0.8349	0.8581	0.8349	0.8581
Adjusted R-Squared	0.8315	0.8404	0.8315	0.8404
F-statistic:	245.3299	48.3893	245.3299	48.3893
Prob(F-stat):	0.0000	0.0000	0.0000	0.0000
Hausman test	14.379312 (p=0.0008)			
Heteroskedasticity LR Test	909.1256 (p=0.0000)			
Autocorrelation test	443.4451 (p=0.0000)			

**** Signify significant at 0.05 level, p-value in parenthesis***
Source: Author's computation (2024)

CONCLUSION AND RECOMMENDATIONS

This study investigates the impact of forensic accounting on financial reporting quality within listed deposit money banks in Nigeria. The analysis reveals that forensic accounting practices, including investigative accounting and litigation support services, significantly influence financial reporting quality. This finding corroborates earlier research suggesting that forensic accounting is a crucial factor in enhancing financial transparency and accuracy. However, the study also uncovers nuances that warrant further exploration, such as variations in the effectiveness of forensic accounting across different banks and types of financial reports. It was recommended that management should of large banks with complex operations should focus on advanced forensic accounting measures and technologies, while smaller banks might prioritize basic forensic practices and training. Banks should establish a clear reporting lines and accountability measures can enhance the effectiveness of forensic accounting practices and promote a culture of openness where employees feel empowered to report unethical behaviour can strengthen internal controls. This study has a policy implication to management and policy maker. Findings of this study serve as an insight to management on how to set measures that will improve the accuracy and reliability of financial statement. Management will gain insight on how the implementation of robust internal control and fraud prevention will reduce the likelihood of financial discrepancies and irregularities. For policy makers and government bodies, findings of this study provide an insight to government on how to design an effective compliance framework for all banks and other sector in the economy. Future study on forensic accounting and financial reporting quality can look at how other forensic accounting measures not captured in this study influenced financial reporting quality in the banking sector or other sector of the economy. Additionally, direction for future study can also be centred on the qualitative characteristics of financial reporting as stated by the IASB framework. This study is limited to selected deposit money banks in Nigeria and it only captured two proxy for forensic accounting. However, the results would have been robust and generalized if all firms in the banking sector are captured in the study.

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IMPACT OF FORENSIC ACCOUNTING ON THE PREVENTION OF FINANCIAL FRAUD IN NIGERIAN BANKING INSTITUTIONS

Abstract

Financial fraud poses a significant threat to organizations worldwide, leading to substantial financial losses, reputational damage and legal consequences. In Nigeria, where the prevalence of financial fraud is a pressing issue, there is a critical need to enhance fraud prevention measures within organizations, particularly within the banking sector. This study seeks to investigate the effects of forensic accounting on the prevention of financial fraud in organizations in Nigeria, with a specific focus on First Bank. The specific objectives include identifying challenges in implementing forensic accounting in Nigeria and proposing solutions, explaining the concept of forensic accounting, highlighting its role in addressing financial issues like fraud in corporate settings, utilizing forensic accounting to combat fraud and malpractice and assessing the importance of internal control systems in this field. The study utilized an ex-post facto research design, gathering data from primary and secondary sources. Findings emphasize that improving forensic accounting systems can effectively reduce financial fraud, particularly within First Bank. Recommendations include organizations investing in forensic accounting through technology, data analytics tools and fraud detection training.

Keywords: Forensic Accounting, financial fraud, fraudulent activities, Internal Control and Fraud Detection and Prevention.

Introduction

In the increasingly digitized and globalized world, financial fraud has become a widespread problem especially in the banking industry. Even with its notable advancements in recent years, financial fraud, including money laundering and embezzlement has plagued Nigeria's banking industry. These fraudulent practices seriously jeopardize the stability and reputation of banking institutions, eroding investor trust and impeding the advancement of the economy. A potent strategy involves the use of forensic accounting, a specialized field combining auditing and investigative skills to detect and prevent fraudulent transactions (Mukoro et al., 2014). Due to global technological advancements, both banks and their customers increasingly conduct business through electronic means, leading to shifts in the nature of fraud and fraudulent activities. Addressing these risks promptly and professionally is crucial to mitigate potential losses (Agboare 2021). First Bank PLC's efforts in combating financial fraud offer valuable lessons on effective strategies and emphasize the importance of thorough financial examination. This underscores the essential role of forensic accounting in identifying and preventing fraudulent activities that jeopardize the financial integrity of key institutions.

Since its inception in the United States in the late 19th century, forensic accounting has become widely acknowledged as a vital instrument in the fight against financial crime. Organizations can strengthen their financial procedures, improve transparency and rebuild the trust necessary for the economic sector to thrive by implementing cutting-edge forensic accounting approaches. Nevertheless, the full potential of forensic accounting has not yet been reached in Nigeria. This can be ascribed to a number of things, such as the prevalence of corruption, insufficient regulatory frameworks and lack of trained forensic accountants. The rate of financial fraud in Nigeria's banking industry is still rising, resulting in large financial losses and harming the industry's reputation. Despite its origins dating back to the early 1800s, forensic accounting is not well known to most people. Mitrić, Stanković, and Lakićević (2012) proposed that the origin of forensic accounting practice can be traced as far back as 1817, when an accountant's testimony was used to support a court's bankruptcy ruling. They added that in the 1820s, a Scottish accountant supported arbitration proceedings by providing an opinion based on his knowledge and experience. Although forensic accounting is not a new profession, many nations still lack it, despite their dire need for it.

Recent data indicates that only 1% of Nigerians enjoy the benefits of 80% of the country's oil wealth. Because 99% of the population struggles with only 20% of the country's total wealth, fraud is systematic in Nigeria, where the average person is forced to be a liar, a cheater or blatant thief. The country's values and norms have been undermined, fraud has hindered growth and development, fostered a culture of illegality and impunity in public service and squandered the nation's potential for future progress.

The trauma that the country is currently experiencing is that of a State whose destiny has been postponed due to entirely avoidable and self-made circumstances. Given the increasing number of fraud and malfeasance cases in businesses and states, it is critical to conduct an empirical analysis of these "Fraudulent reporting messiahs" and their methods in order to assess their effectiveness in achieving their goals of eradicating the stigma associated with the accounting profession and bringing "financial reporting real" to the public.

The major objective of this study is to evaluate the impact of forensic accounting on the prevention of financial fraud in Nigerian banking institutions, with focus on the First Bank of Nigeria. while the specific objectives include to:

i. identify the challenges and barriers to the effective implementation of forensic accounting in Nigeria and propose viable solutions.

ii. know and discuss the concept of Forensic Accounting.

iii. explore the need and role of forensic accounting in solving financial problems like frauds and malpractice in corporate world.

iv. understand and utilize Forensic accounting as a weapon against accounting frauds and malpractices.

v. ascertain the need of internal control system in forensic accounting.

Review of Literature

Conceptual Review

Forensic Accounting

Forensic accounting utilizes accounting principles and methodologies to address legal matters (Dhar and Sarkar, 2010). It involves producing reports to ascertain accountability for fraud and ensuring these reports are admissible as evidence in administrative or legal contexts. Leveraging their expertise, forensic accountants play a crucial role in fraud prevention, legal proceedings support and detection of financial irregularities. Forensic accounting has developed specific models and methodologies to conduct investigations aimed at providing legal evidence, focusing on assurance, attestation and advisory aspects. The discipline deals with the evidential value of accounting data and addresses practical issues such as forensic auditing, accounting fraud, tax evasion, bankruptcy and valuation studies. It also covers areas like compliance, due diligence, risk assessment and violations of accounting regulations (Dhar and Sarkar, 2010). According to Curtis (2008), forensic accounting is relevant to fraud because fraud involves acquiring property or financial advantages through deception, whether through concealment or misrepresentation. On the other hand, Bhasin (2007) highlighted that forensic accounting aims to determine asset valuations in divorce cases, gather evidence for criminal investigations, evaluate damages resulting from auditor negligence and gather facts to establish whether embezzlement has occurred and its extent.

Financial Fraud

Financial fraud in the banking sector can range from simple embezzlement to sophisticated money laundering schemes. Financial fraud comprises of activities aimed at illicitly acquiring wealth through unlawful means that contravene existing laws. he EFCC Act of 2004 states that these activities include drug trafficking, fraud, embezzlement, bribery, corruption, money laundering, illicit mining, illicit oil bunkering, tax evasion, foreign exchange fraud (including currency manipulation and counterfeiting), theft of intellectual property, piracy, illegal market manipulation and the unlawful disposal of hazardous waste and restricted goods. Cotton (2003) attributes corporate malfeasance to the collapse of companies like Enron, WorldCom, Tyco, and Adelphia.

Global losses amounted to $460 billion, according to reports. In Nigeria, Cadbury Nigeria Plc allegedly lost 15 billion Naira due to illicit accounting practices by its management. Additionally, an estimated one trillion Naira was reportedly lost in nine commercial banks in Nigeria due to various financial misconducts leading to their failure. n accordance with the guidelines of the EFCC Act of 2004, the Economic and Financial Crimes Commission (EFCC) is presently looking into these allegations. Financial fraud is extensive and involves misconduct by both individuals and organizations.

Internal Control

nternal control was originally defined in 1949 by the American Institute of Certified Public Accountants (AICPA) as an organised set of plans and processes used by an organisation to protect its resources, verify the reliability and correctness of information, improve operational effectiveness, and guarantee compliance with set management policies. Over time, this definition has evolved significantly, leading to a comprehensive range of concepts that now describe internal control systems as essential for guiding enterprise leadership in protecting assets and fostering sustainable growth. The introduction of the CoSo model in 1992 further refined these concepts by distinguishing between risk management and internal control. Today, internal control encompasses not only the prevention of accounting errors but also a contemporary approach that identifies areas of management control, processes and promotes thorough analysis for continuous improvement.

Financial Investigation

A financial investigation is an examination into the financial operations of a business, focusing on gathering evidence and analyzing information to ascertain whether there have been any illegal activities or misuse of funds. The goal is to uncover any issues that may have occurred, identify those responsible and ensure accountability. Specialized techniques such as forensic accounting and data analysis are employed by financial investigators to trace the movement of money between individuals or entities involved in the investigation. They scrutinize various documents, such as bank statements, tax filings, invoices and contracts, for discrepancies that could indicate fraud or violations of financial regulations.

Financial Accounting

The primary objectives of accounting include determining the profit or loss over a specified period, presenting the financial position of the business at a specific date and ensuring effective management of the firm's assets. Maintaining accurate accounting records is essential for assessing the business's income and facilitating the communication of financial information to managers, owners and other stakeholders. Accounting is a systematic discipline that records, categorizes, summarizes and interprets financial data related to the operations of a business, enabling informed decision-making about its affairs.

Theoretical Review

The fraud triangle theory

The theory introduced by Cressey (1953) is crucial in comprehending and preventing fraud. According to this theory, fraud requires the presence of three key elements: pressure, opportunity and rationalization. In forensic accounting, particular emphasis is placed on mitigating the 'opportunity' factor through the implementation of rigorous controls aimed at detecting and discouraging fraudulent behaviors.

The Fraud Triangle Theory is shown in fig. 1

Figure 1 Image above shows The Cressy Fraud Triangle. Source: Adapted from Coenen (2008, p. 10) and Wells (2011, p. 8).

Pressure

Pressure, according to Cressey (1953), is the motivating factor that can drive an individual to engage in fraud. It may stem from personal issues such as financial difficulties or addiction, or it can be induced by the work environment. In organizational settings, pressures might arise when management or peers incentivize or coerce individuals to commit fraudulent acts. For instance, when compensation or career advancement heavily depends on meeting performance targets, individuals may feel compelled to manipulate results or encourage others to do so. Additionally, external pressures from stakeholders like investors or financial institutions demanding unrealistic expectations can also contribute to creating a climate conducive to fraud (Gupta, 2015).

Opportunity

Pressure provides the motivation for committing a crime, but for an employee to engage in fraud, they must also believe they have the opportunity to do so without detection. This perceived opportunity forms the second element. Cressey states that there are two primary components to the chance of committing a breach of trust: technical capability and general awareness. The term "general awareness" describes the knowledge that a worker's dependable position may be misused or exploited. Technical competence refers to the particular aptitudes required to carry out the task; these aptitudes frequently align with the aptitudes required to be hired and promoted within the company.

Rationalisation

The third component of the fraud triangle, as highlighted by Cressey, is rationalization. It's not merely a post-hoc justification for theft after it occurs; rather, it is a crucial part of the motivation before the crime takes place. Rationalization allows the perpetrator to justify their actions internally before committing them. This mental process is essential because the individual does not perceive themselves as a criminal; they must rationalize their misconduct to maintain their self-image as a trustworthy person.

The Control Theory

According to this theory, the risk of fraud can be reduced through effective implementation of robust internal control systems. Forensic accounting plays a vital role in enhancing these systems by pinpointing weaknesses and suggesting enhancements. Internal accounting controls encompass the diverse methods and procedures that organizations adopt to uphold the accuracy and integrity of their financial records. Senior management and the board oversee the establishment, upkeep, and supervision of these controls within the company. While specific internal accounting controls vary based on the company's specific activities, they generally fall into three primary categories: detective, preventive, and corrective measures.

Detective Internal Accounting Controls

The purpose of detective internal accounting controls is to find mistakes or anomalies in the accounting processes that have already occurred. They enable corporate accounting teams to recognise and address these problems quickly. These controls include, for instance, unexpected checks of cash balances and internal and external audits of inventory.

Preventive Internal Accounting Controls

Preventive internal accounting controls are designed to proactively minimize accounting errors and irregularities. They focus on improving accuracy in administrative tasks, preventing employee fraud and anticipating accounting issues that could disrupt organizational operations. Examples of preventive controls include dividing responsibilities among different individuals, managing access to accounting systems, implementing double-entry accounting methods, minimizing managerial participation in financial statement preparation, validating expenses, restricting physical access to assets and maintaining comprehensive documentation while adhering to authorization procedures like invoice approvals.

Corrective Controls

Corrective controls are activated when detective controls identify issues within the accounting process, aiming to rectify errors and prevent their recurrence to avoid further complications. Typical corrective controls include:

- Conducting physical audits of assets and inventory.
- Making adjustments or rectification entries in the accounting system.
- Verifying ledgers for accuracy.
- Implementing disciplinary actions against employees involved in misconduct.

- Updating policies or procedures to enhance control and compliance efforts.

Empirical Studies

The following empirical studies by different authors as they relate to the objectives of the study were reviewed.

A study on forensic accounting and fraud management was carried out in Nigeria by Ehioghiren and Atu (2016), who gathered primary data. According to what they found, forensic accounting significantly improves fraud management and identification. In contrast to conventional external auditors, the study also highlighted the unique tasks and responsibilities of professional forensic accountants. Agbaje and Adeniran (2017) conducted research to examine how forensic accounting services contribute to reducing fraud within the Nigerian banking sector. Their study focused on assessing the effects of these services on treasury and forex operations, as well as loan processing and cash management. Utilizing a survey-based approach, primary data were gathered through distributed questionnaires. The study utilized correlation regression models to analyze data, examining the impact of forensic accountants in banking operations and their adherence to internationally recognized practices for detecting and investigating fraud. The results showed that forensic accounting services are pivotal in decreasing fraud within the banking sector. Furthermore, the study recommended emphasizing customer interests while ensuring compliance with regulatory standards established by the Central Bank of Nigeria.

Using a survey-based research design, Ogundana et al. (2018) investigated how forensic accounting affected the identification and prevention of fraud in the Nigerian banking industry. After developing and testing three theories, the study came to the conclusion that forensic accounting greatly improves the ability to identify and stop fraud. The findings also recommended that for forensic accounting to gain broader acceptance and effectiveness in Nigeria, the government should enforce adherence to legislative frameworks.

A study by Suleiman, Yahaya, and Abba (2018) looked into how forensic accounting expertise affected publicly traded companies in Nigeria's efforts to avoid fraud.A total of 177 auditors from these firms were sent questionnaires, and 105 of them responded. The study employed multiple regression analysis to evaluate its assumptions and discovered a significant relationship between the efficacy of fraud prevention and forensic accounting skills. The findings suggest that enhancing the forensic accounting knowledge among auditing staff in listed companies can effectively deter and prevent fraudulent activities within these organizations and across Nigeria.

Nwaiwu and Aaron (2018) investigated the role of forensic accounting in enhancing fraud detection processes and performance in selected listed companies in Nigeria. They utilized a standardized questionnaire for data collection and analyzed the data using correlation and descriptive statistics. The study revealed significant positive and negative associations between the proxies used for the variables under investigation.

Asusu (2019) conducted research to explore how forensic auditing contributes to reducing and preventing fraud in Deposit Money Banks (DMBs) in Nigeria. Through the use of questionnaires, in-person interviews and document reviews, data for the study was gathered using a survey research design. There were 48 participants in the sample, including general managers, internal auditors, and operational managers from sixteen banks in Nigeria.

The findings of the study highlighted a significant correlation between forensic investigation and auditing services and the effectiveness of internal control systems and cash management practices implemented by DMBs.

Agboare (2021) studied how forensic accounting affected the identification of financial crime in Nigerian Deposit Money Banks (DMBs). Structured Likert scale questionnaires were used to gather primary data for the study, which used a survey research methodology. Using the Statistical Package for Social Sciences, descriptive statistics and regression analysis were used to analyse the data (SPSS version 20.0). The report claims that financial fraud at Deposit Money Banks (DMBs) in Nigeria can be found largely through the use of forensic accounting techniques, including investigation procedures, financial transaction analysis and reconstruction of inadequate accounting records.

The effect of forensic accounting on fraud identification and prevention in a subset of Nigeria's publicly traded Deposit Money Banks (DMBs) was examined by Ojo-Agbodu, Abiola, and Ndubusi (2022). 115 people from prestigious banks, including Access Bank, First Bank, GT Bank, Union Bank, UBA, and Zenith Bank, participated in their poll. These participants included internal control officers, branch operation managers and cash officers/head tellers. Questionnaires were distributed as part of the study using basic random sampling procedures that were proportional. The results of the basic linear regression analysis showed a significant correlation between fraud detection and forensic accounting. However, The study found that forensic accounting had little effect on preventing fraud in Deposit Money Banks'

(DMBs') Nigerian branch operations. In order to more successfully incorporate forensic accounting principles and practices, the study recommended that regulatory bodies such as the Central Bank of Nigeria (CBN) and the Chartered Institute of Bankers of Nigeria revise their operational directions. This modification aims to improve DMB fraud detection and irregularity mitigation efficaciousness.

In summary, the literature evaluation provides a thorough theoretical and conceptual framework for the significance of forensic accounting in combating financial crime. However, it emphasizes the need for more investigation, with a special emphasis on banking institutions in Nigeria. This study aims to close this knowledge gap and add fresh perspectives to the corpus of current research on this subject.

Methodology

Data from primary and secondary sources were gathered for the study using an ex post facto research design. For primary data collection, the researcher utilized a 16-item questionnaire named "Ensuring Quality Control of Forensic Accounting for Efficient and Effective Corporate Management" (EQCFAEEM). The researcher developed this instrument to explore variables pertinent to the study, drawing on existing literature on forensic accounting and corporate governance.

Method of Data Collection

Structured questionnaires were utilized as the primary method of data collection. The questionnaires were designed to gather information on the perceptions, experiences, and practices related to forensic accounting and financial fraud prevention. The questionnaires were administered either electronically or in a paper format, to the 291 participants having a designated time frame to complete them. Additionally, semi-structured interviews were conducted with key bank officials and forensic accountants to gather more in-depth insights into their experiences and perspectives on the role of forensic accounting in fraud prevention. These interviews will be recorded and transcribed for analysis.

Operationalization of variable

The independent variable, forensic accounting, is defined through three variables: fraud investigation, expert consultancy and litigation support.

y = f(x)

Y = Fraud Detection and Prevention (FDP)

X = Forensic Accounting (FA)

The independent variable is classified into X = (x1, x2, x3), therefore;

x1= Fraud Investigation (FI)

x2= Expert Consultancy (EC)

x3= Litigation Support (LS)

Functional Relationship

y1 = f (x1)....................................Hyp 1

FDP1 = f (FI)

y2 = f (x2).....................................Hyp 2

FDP2 = f (EC)

y3 = f (x3)....................................Hyp 3

FDP3 = f (LS)

Data Analysis and Results

The primary data for the study were obtained from the field study according to the responses given by the respondents. In all, 291 questionnaires were distributed to the respondents. More so, the responses from the respondents are presented and analysed hereunder.

The response rate is shown below.

Well-filled and returned	110 (28.57%)
Not filled and returned	55 (14.29%)
Unreturned	126 (57.14%)
TOTAL	291 (100%)

DATAANALYSIS AND RESULTS

Out of the 291 copies of questionnaires distributed to the respondents, a total of 110 were well filled. The questionnaire items were evaluated based on respondents' opinions, focusing on their perceptions of the roles of forensic accountants and the use of accounting tools in combating financial fraud. Responses were assessed using scales ranging from strongly agree to strongly disagree, as well as yes or no answers.

Section A:

Table 2: Shows the Gender Demographic Information.

RESPONSE:

Male Employees	88	**80%**
Female Employees	22	**20%**
Total Respondents	110	**100%**

Table 3: Shows the Various Demographic Age Groups.

RESPONSE:

18 – 24	10	**9.09%**
25 -34	50	**45.45%**
35 – 44	38	**34.55%**
45 – 54	12	**10.91%**
55 & above	0	**0%**
TOTAL	110	**100%**

Table 4: Shows the Various Employees Position in the Organization.

RESPONSE:

Entry level employees	20 employees	**18.18%**
Mid-level management	87 employees	**79.09%**

Senior level management	3 employees	**2.73%**
TOTAL	110 employees	**100%**

Section B:

Table 5: Shows the Forensic Accounting and Financial Fraud Preventative & Question Asked

Question 1:

Have you ever participated in any training or workshops related to forensic accounting?

RESPONSE:

Respondent	Yes	48	**43.64%**
Respondent	No	62	**56.36%**
TOTAL		110	**100%**

Question 2:

Do you believe that the introduction of forensic accounting can significantly reduce financial fraud?

Table 6: Shows the ITEM Number of respondents percentage.

RESPONSE:

Strongly Agree	95	**86.36%**
Agree	10	**9.09%**
Neutral	5	**4.54%**

Disagree	0	**0%**
Strongly Disagree	0	**0%**
TOTAL	110	**100%**

<u>Question 3:</u>

In your opinion, which of the following forensic accounting tools are most effective in fraud detection? **(You can select one or more)**

Table 7: Shows the ITEMS: Strongly agree, Neutral, Disagree, strongly disagree and Total.

RESPONSE:

Data mining 90	81.8% 10	9.09% 0	0% 0	0% 10	9.09% 110	**100%**
Analytical Procedure 35	31.81% 55	50% 0	0% 10	9.09% 10	9.09% 110	**100%**
Computer-assisted audit tools 95	86.36% 6	5.45% 0	0% 0	0% 9	8.18% 110	**100%**
Bank & cash analysis 100	90.90% 0	0% 2	1.81% 0	0% 8	7.27% 110	**100%**

<u>Question 4:</u>

Does First Bank employ a dedicated team of forensic accountants?

RESPONSE:

Yes	**100%**
No	**0%**

<u>Question 5:</u>

How frequently does the bank review its forensic accounting policies?

RESPONSE:

Monthly	0%
Quarterly	99%
Bi-annually	0%
Annually	0%
Not sure	0%

<u>Question 6:</u>

In your opinion, are detective internal accounting controls such as inventory counts and checks, surprise cash counts, internal and external audits effective in the curbing of financial frauds in banks.

RESPONSE:

Yes	100%
No	0%

<u>Question 7:</u>

Are corrective controls such as ledger verification, employee disciplinary action and policy or procedure updates necessary in the effective management of financial frauds in banks?

RESPONSE:

Yes	100%
No	0%

Question 8:

Which of the following do you believe is more effective in minimizing, managing and controlling financial fraud:

ITEMS % RESPONSE:

Strongly Agree	Agree	Neutral	Disagree	Strongly agree	Total
Implementation of internal control	90. (81.8%)	10. (9.09%)	2. (1.81%)	8. (7.27%)	110. 100%
Bonding employee	20. (18.18%)	5. (4.54%)	75. (68.18%)	10. (9.09%)	110 99.9%
Raise fraud awareness	80. (72.73%)	30. (27.27%)	0. (0.0%)	0. (0.0)	110. 100%
Fraud triangle	70. (63.64%)	30. (27.27%)	4. (3.64%)	6. (5.44%)	110. 99.9%
Risk-management strategies	66. (60.00%)	24. (21.82%)	10. (9.09%)	10. (9.09%)	110. 100%

Question 9:

Does first bank have a strong internal control system against financial fraud management

RESPONSE:

Yes	100%
No	0%

SECTION B:

Challenges to Implementing Forensic Accounting

Question 10:

What challenges does First Bank face when implementing forensic accounting techniques. Thus, is there resistance from any internal department or staff when introducing forensic accounting procedures?

RESPONSE:

Strongly Agree	0
Agree	5
Neutral	0
Disagree	10
Strongly Disagree	95

Question 11:

Do you think the bank has adequate technological infrastructure to support advanced forensic accounting procedures?

RESPONSE:

Yes	**90. (81.8%)**

Somewhat	**10. (9.09%)**
No	10. (9.09%)
TOTAL	110. (100%)

From the interview conducted which includes 2 key bank officials and 2 forensic accountants, the findings of the study indicate that the more insights into the practical application of forensic accounting control systems prevents financial fraud, specifically in the case of First Bank. They all agreed that forensic accounting techniques, such as data analysis, fraud risk assessment, and internal control evaluation, are effective in detecting and preventing financial fraud. These techniques enable organizations to identify red flags, irregularities, and suspicious activities that may indicate fraudulent behaviour.

Additionally, feedback from the interviews indicates that the successful implementation of forensic accounting leads to a notable decrease in financial fraud occurrences at First Bank. The interviewees reported that the bank has established robust internal control systems, implemented regular forensic audits and reviews and employed a dedicated team of forensic accountants. As a result, instances of financial fraud within the bank have decreased, leading to enhanced trust and confidence among stakeholders and customers which has placed First bank of Nigeria at the number 4th largest bank in Nigeria with a capital base of 1.287 trillion naira according to nairametrics (Olujinmi 2023)

Conclusion and Recommendations

Based on the results, it is evident that forensic accounting plays a critical role in preventing financial fraud by employing data analysis and assessing fraud risks to identify suspicious activities. Effective implementation, along with robust internal controls and regular audits, enhances detection and deterrence of fraud. The study emphasizes fostering an ethical organizational culture through ethics promotion and employee training, crucial for proactive fraud prevention and reporting. The study recommended that organizations should invest in forensic accounting by allocating resources to technology, data analysis tools and training for fraud detection. Strengthening internal control systems through ongoing monitoring and audits is crucial to identify and address vulnerabilities. Collaboration with regulatory bodies and law enforcement agencies enhances fraud prevention by sharing information and best practices. This cooperative approach helps organizations stay vigilant against evolving fraud tactics and improves overall fraud detection capabilities.

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THE IMPACT OF FORENSIC ACCOUNTING ON MITIGATING TAX FRAUD IN NIGERIA: AN ANALYSIS OF CURRENT TRENDS AND ORGANISATIONAL IMPLICATIONS

Abstract

Financial crimes, particularly tax fraud, pose significant challenges to Nigeria's economic stability and public trust. Despite establishing regulatory frameworks and anti-corruption laws, the growing sophistication of fraud schemes has outpaced traditional auditing methods. This research explores the effectiveness of forensic accounting in detecting and preventing financial crimes in Nigeria. A case study approach was employed, involving in-depth analysis of specific instances of financial fraud and interviews with forensic accounting professionals to evaluate current practices and their impact on fraud detection. The findings indicate that while forensic accounting techniques, such as documentation review and financial statement analysis, significantly enhance fraud detection, notable gaps exist in stakeholder awareness, training and implementation. Additionally, the study highlights the necessity for improved collaboration among regulatory agencies and the adoption of advanced technologies like big data analytics to bolster forensic accounting efforts. In conclusion, the research emphasises the importance of integrating forensic accounting into existing financial practices to combat financial misconduct effectively. This study contributes valuable insights into the challenges and opportunities associated with forensic accounting in Nigeria, offering practical recommendations for stakeholders to refine their practices. Ultimately, it underscores the potential of forensic accounting as a crucial tool for promoting transparency and accountability in Nigeria's financial landscape.

Keywords*: Forensic Accounting, Tax Fraud, Financial Compliance, Organizational Integrity*

INTRODUCTION

The increasing prevalence of tax fraud in Nigeria has raised significant concerns regarding the effectiveness of traditional accounting practices in detecting and preventing financial misconduct. Tax fraud involves deliberately falsifying information to evade tax obligations and harms government revenue and economic development (Lederman, 2019). In Nigeria, where tax compliance is often low, the need for robust mechanisms to combat tax fraud is more pressing than ever (Adekoya et al., 2020). Forensic accounting has emerged as a critical tool in addressing these challenges. Defined as applying accounting principles and investigative skills to analyse financial information for legal purposes, forensic accounting combines elements of auditing, accounting, and investigative techniques to uncover fraudulent activities. The role of forensic accountants is particularly vital in the Nigerian context, where the complexities of financial transactions and the prevalence of Corruption necessitate specialised skills to detect irregularities. Research indicates that implementing forensic accounting practices can significantly enhance the detection and prevention of tax fraud. Odeyemi et al. (2024) highlight that forensic accountants possess the expertise to identify discrepancies in financial records that may indicate fraudulent behaviour. The authors emphasise the importance of forensic accounting in improving tax revenue generation by enhancing the accuracy of financial reporting and compliance. Moreover, integrating technology into forensic accounting practices has further strengthened its effectiveness. Data analytics and digital forensics allow forensic accountants to analyse vast amounts of financial data quickly, enabling them to detect anomalies that may suggest tax fraud (Daraojimba et al., 2023). This technological advancement is crucial in a rapidly evolving financial landscape where traditional methods may fall short. Despite the potential benefits, adopting forensic accounting in Nigeria faces several challenges. Issues such as inadequate training, high costs of implementation, and resistance from organisational culture can hinder the effectiveness of forensic practices. Pham and Vu (2023) state that the success of forensic accounting is often contingent upon the willingness of organisations to embrace change and invest in the necessary resources.

Each problem highlights specific challenges and gaps in the current understanding and practice of forensic accounting, ultimately framing the investigation's objectives and significance. Despite its potential, stakeholders, including business leaders, accountants and regulatory agencies in Nigeria, lack awareness and understanding of forensic accounting. Professionals may not fully grasp the scope and benefits of forensic accounting, leading to the underutilisation of its techniques in combating financial crimes. This gap in understanding can result in insufficient training and resources allocated to forensic accounting practices, diminishing their effectiveness. Mandal (2025), a lack of awareness limits the ability of organisations to implement proactive measures against financial misconduct. Addressing this problem is crucial for enhancing the overall integrity of financial systems. Forensic accounting is often viewed as a separate discipline rather than an integral part of the accounting profession (Van Akkeren et al., 2016). This separation can lead to a lack of synergy between traditional auditing practices and forensic techniques, hindering the detection of financial crimes. Failing to integrate forensic accounting into standard accounting practices means that organisations may miss early signs of fraud or misconduct (Kranacher & Riley, 2019). As a result, they may struggle to respond effectively when issues arise. This research problem emphasises the need for a holistic approach that combines traditional accounting with forensic methodologies to enhance fraud detection capabilities. Organisations and regulatory agencies in Nigeria face significant resource constraints, limiting their ability to implement comprehensive forensic accounting practices. This includes financial limitations, a lack of skilled professionals and inadequate technological infrastructure. Without sufficient resources, organisations may struggle to conduct thorough investigations or adopt advanced technologies that could enhance their forensic capabilities. This problem affects individual organisations and hampers national efforts to combat financial crimes. Addressing this issue is vital for creating a more robust framework for forensic accounting in Nigeria.

Although Nigeria has established various regulatory bodies and frameworks to combat financial crimes, the effectiveness of these measures remains questionable. Corruption, bureaucratic inefficiencies and lack of enforcement can undermine the impact of regulatory efforts. The limitations of the regulatory framework can create an environment where financial crimes flourish, as perpetrators may perceive a low risk of detection or punishment (Hashim et al., 2020). This research problem highlights the need to critically evaluate existing regulations and their enforcement to determine how they can be strengthened to support forensic accounting practices. The nature of financial crimes is continuously evolving, with perpetrators employing increasingly sophisticated techniques to evade detection (Sarkar & Shukla, 2023). This dynamic landscape challenges forensic accountants, who must stay ahead of emerging fraud schemes. The rapid evolution of financial crimes necessitates ongoing education and adaptation within forensic accounting. Failure to keep pace with these changes can render existing practices ineffective, leaving organisations vulnerable to new types of fraud. This research problem underscores the importance of continuous professional development and the adoption of innovative techniques in forensic accounting. Compelling and combatting financial crimes requires collaboration among various stakeholders, including forensic accountants, law enforcement agencies, regulatory bodies, and the private sector. However, communication and cooperation among these groups are often lacking. The absence of a coordinated approach can lead to fragmented efforts in addressing financial crimes, making it challenging to share vital information and resources. This research problem emphasises the need for establishing collaborative frameworks that facilitate information sharing and joint initiatives to enhance the effectiveness of forensic accounting practices. By investigating these issues, this study contributes to developing more effective forensic accounting practices to combat financial crimes and promote greater transparency and integrity in the financial system. Understanding and addressing these problems is essential for fostering Nigeria's more resilient economic environment.

Forensic accounting applies accounting principles and investigative techniques to analyse financial information for legal proceedings. According to Odeyemi et al. (2024), forensic accountants are trained to investigate financial discrepancies and irregularities, often involving fraud, embezzlement or other financial crimes. Forensic accounting encompasses various activities, including financial statement analysis, fraud detection, litigation support and collaboration with law enforcement agencies. The relevance of forensic accounting in today's financial landscape cannot be understated. As financial crimes become more sophisticated, traditional auditing methods may fail to detect fraudulent activities. Forensic accounting offers specialised tools and techniques to identify and analyse financial discrepancies, providing a critical defence against financial fraud (Haddad et al., 2024; Kranacher & Riley, 2019). Financial crimes are unlawful acts that involve the misuse of financial assets for personal gain. These crimes encompass various activities, including tax evasion, money laundering, fraud, and Corruption. Haken (2011) categorises financial crimes as activities that undermine the economic stability of a nation and erode public trust in financial institutions. The impact of financial crimes extends beyond individual victims; they can destabilise entire economies, contribute to inequality and create a culture of impunity. Understanding the various forms of financial crimes is crucial for developing effective forensic accounting practices for detection and prevention. Fraud detection techniques refer to the methodologies employed by forensic accountants to identify fraudulent activities within financial records. These techniques can include data analysis, forensic audits, review of financial statements, and investigative interviews. The importance of these techniques lies in their ability to uncover hidden patterns of fraud that may not be evident through standard accounting practices. Demirhan (2024) highlights ratio analysis, trend analysis, and variance analysis as practical tools for detecting anomalies in financial statements. The selection and application of these techniques are critical in enabling forensic accountants to address financial crimes effectively.

The regulatory framework encompasses the laws, regulations and guidelines established by governmental and professional bodies to govern financial practices and combat financial crimes (Syaufi et al., 2023). In Nigeria, key regulatory bodies include the Economic and Financial Crimes Commission (EFCC) and the Central Bank of Nigeria (CBN). A robust regulatory framework is essential for creating an environment that deters financial crimes and supports the work of forensic accountants. The strength and enforcement of these regulations often influence the effectiveness of forensic accounting practices. According to Oniwinde (2024), effective regulation reduces financial misconduct and ensures accountability. Technology in forensic accounting refers to the use of advanced tools and software to analyse financial data and detect fraudulent activities. This includes big data analytics, automated data collection, and predictive analytics. The integration of technology enhances the efficiency and effectiveness of forensic accounting practices. Rezaee et al. (2018) discuss how big data analytics enables forensic accountants to process vast amounts of data quickly, identify patterns and uncover potential fraud. Technology adoption is increasingly considered necessary in the modern era of financial crime prevention. By exploring these elements in detail, this study shed light on the challenges and opportunities associated with forensic accounting practices in Nigeria, ultimately contributing to a more practical approach to financial integrity and accountability.

Statement of the Problem

The increasing prevalence of financial crimes in Nigeria poses a significant threat to economic stability and public trust in financial institutions. Despite the potential of forensic accounting to detect and prevent these crimes, several challenges hinder its effective implementation. One of the primary challenges is the lack of awareness and understanding of forensic accounting among stakeholders, including business leaders, accountants and regulatory agencies. Professionals are not fully aware of the scope and benefits of forensic accounting, leading to its underutilisation. According to Hersel et al. (2019), this lack of awareness limits the ability of organisations to implement proactive measures against financial misconduct. Forensic accounting is often treated as a separate discipline rather than an integral part of the accounting profession. This separation can lead to a lack of synergy between traditional auditing practices and forensic techniques, crucial for effective fraud detection. The failure to integrate these practices means that organisations may miss early signs of fraud, resulting in significant financial losses. Organisations and regulatory bodies in Nigeria face significant resource constraints, including financial limitations, a lack of skilled professionals and inadequate technological infrastructure (Abdullahi et al., 2016). The Association of Certified Fraud Examiners (ACFE) reported that organisations with limited resources are less likely to conduct thorough investigations or adopt advanced technologies that could enhance their forensic capabilities (Adeniyi, 2025). This situation hampers the overall effectiveness of forensic accounting in combating financial crimes. While established to fight financial crimes, Nigeria's existing regulatory frameworks often suffer from Corruption and bureaucratic inefficiencies (Onuigbo & Eme, 2015).

The Economic and Financial Crimes Commission (EFCC) has faced criticism for its inability to effectively enforce anti-corruption laws, which undermines the impact of regulatory efforts (Adeniran, 2019). Levi (2015) highlights that the lack of enforcement creates an environment where financial crimes can thrive, as perpetrators perceive a low risk of detection. The nature of economic crimes is continuously evolving, with perpetrators employing increasingly sophisticated techniques to evade detection. This dynamic landscape challenges forensic accountants, who must stay ahead of emerging fraud schemes. Alharasis et al. (2023) and Muthusamy (2011) indicate that 47% of organisations reported experiencing fraud in the past two years, emphasising the need for forensic accountants to adapt their practices to address new threats effectively. Compelling combatting financial crimes requires collaboration among various stakeholders, including forensic accountants, law enforcement agencies, regulatory bodies and the private sector. However, communication and cooperation among these groups are often lacking. The absence of a coordinated approach can lead to fragmented efforts in addressing financial crimes, making it difficult to share vital information and resources. Addressing these challenges is essential for enhancing forensic accounting practices' effectiveness and combating financial crimes in Nigeria.

Research Question. How does implementing forensic accounting practices influence the prevalence of tax fraud among organisations in Nigeria?

Research Hypothesis

H1: The implementation of forensic accounting practices significantly reduces the incidence of tax fraud in organisations operating in Nigeria.

The research on the impact of forensic accounting on tax fraud in Nigeria contributes to the existing body of knowledge in several innovative ways. First, it addresses a relatively underexplored Nigerian accounting and taxation literature area. While there is substantial research on tax fraud and accounting practices separately, integrating forensic accounting as a pivotal tool for combating tax fraud offers a fresh perspective. This study provides empirical evidence on how forensic accounting methodologies can enhance the detection and prevention of tax fraud, thus filling a significant gap in the current literature. Additionally, the research utilises contemporary case studies and data analysis techniques that reflect Nigeria's current economic and regulatory environment. By focusing on real-world applications of forensic accounting in combating tax fraud, this study enriches academic discourse and offers practical insights for policymakers, accountants, and organisations. The findings may lead to the development of new forensic accounting frameworks tailored to the Nigerian context, promoting better compliance and transparency in the taxation system.

The urgency of this research is underscored by the increasing prevalence of tax fraud in Nigeria, which poses a significant threat to the nation's economic stability and growth. As the government seeks to boost revenue collection and enhance fiscal responsibility, understanding how forensic accounting can mitigate tax fraud becomes critical. Recent reports have highlighted a rise in tax evasion and fraudulent activities, leading to substantial revenue losses for the government and undermining public trust in financial institutions. Furthermore, the evolving regulatory landscape, including implementing new tax laws and compliance requirements, necessitates examining practical tools and strategies to combat tax fraud. The urgency is also accentuated by the need for organisations to adapt to these changes while maintaining ethical financial practices. This research provides timely insights that can inform policymakers, enhance regulatory frameworks, and encourage organisations to adopt forensic accounting practices as a proactive measure against tax fraud. Ultimately, the results of this study could play a crucial role in shaping the future of tax compliance and forensic accounting in Nigeria.

The significance of this study lies in its potential to impact various stakeholders in the realm of accounting, taxation, and governance in Nigeria. By analysing the effect of forensic accounting on tax fraud, the research addresses critical issues that have far-reaching implications for the economy, organisations, and the overall integrity of financial systems. One of the primary contributions of this study is its potential to enhance tax compliance among organisations in Nigeria. By demonstrating the effectiveness of forensic accounting in detecting and preventing tax fraud, the research can encourage businesses to adopt these practices proactively. Improved compliance leads to increased government tax revenues, which are essential for funding public services and infrastructure development. The findings of this study can provide valuable insights for policymakers and regulatory bodies in Nigeria. By understanding the role of forensic accounting in mitigating tax fraud, the government can develop more robust policies and regulations that promote transparency and accountability in financial practices. This study may also highlight the need for specialised training and resources for tax authorities, enabling them to utilise forensic accounting techniques in their operations better. The study serves as a guide for organisations to implement adequate internal controls and forensic accounting practices. By showcasing best practices and successful case studies, the research can help organisations design and implement frameworks that reduce the risk of tax fraud and improve their overall financial management. This could enhance trust among stakeholders, including investors, customers, and the public. The study contributes to the academic literature on forensic accounting and tax fraud by comprehensively analysing their intersection in the Nigerian context. It adds to the theoretical understanding of how forensic accounting can be operationalised to combat tax fraud, thus serving as a foundation for future research. Academics and students can build upon this work to explore related topics, further enriching the discourse on accounting practices and fraud prevention. By emphasising the importance of forensic accounting in preventing tax fraud, the study advocates for higher ethical standards within the accounting profession. It highlights the responsibility of accountants and financial professionals to uphold integrity and transparency in their practices. This focus on ethics can foster a culture of accountability, leading to more responsible corporate behaviour and improved public confidence in financial reporting. By addressing the pressing issue of tax fraud through the lens of forensic accounting, the research has the potential to drive meaningful change, improve compliance, and foster a more transparent financial environment in Nigeria.

Literature Review

Forensic Accounting

Forensic accounting is vital in combining accounting principles with investigative techniques to address financial misconduct. As organisations face increasing scrutiny over their financial practices, the demand for forensic accountants has grown, highlighting the importance of this discipline in promoting transparency and accountability (Hossain et al., 2024; Talha et al., 2024). Forensic accounting is the application of accounting, auditing, and investigative skills to analyse financial information and present it in a manner suitable for legal proceedings (Emmanuel et al., 2018). It encompasses a range of activities, including fraud detection, litigation support, and financial investigations. According to Kaur et al. (2023), forensic accounting is specifically designed to uncover financial crimes, ensuring that financial reporting is accurate and compliant with regulations. Forensic accountants are trained to investigate discrepancies, analyse financial statements and provide expert testimony in court when necessary. Forensic accountants utilise various techniques to identify and prevent fraudulent activities. This includes analysing financial statements, conducting interviews, and using data analytics to detect anomalies. Forensic accountants often serve as expert witnesses in legal cases, providing testimony and analysis related to financial disputes (Preber, 2014). Their expertise is crucial in cases involving fraud, embezzlement and financial misrepresentation (Okoye & Jonathan, 2019). Forensic accounting also plays a role in assessing and managing organisational financial risks. By identifying vulnerabilities in financial processes, forensic accountants help organisations implement controls to mitigate fraud risk. Ensuring compliance with legal and regulatory requirements is a critical function of forensic accounting. This includes adherence to tax laws and financial reporting standards, which is particularly relevant in the context of tax fraud.

The historical development of forensic accounting can be traced back to the early 20th century when the need for specialised financial investigations began to emerge (Kranacher & Riley, 2019). Historically, forensic accounting was primarily associated with fraud detection in criminal investigations. The term "forensic accounting" gained popularity in the 1980s, mainly as high-profile corporate fraud cases garnered media attention (Baba, 2019). The infamous Watergate scandal in the 1970s prompted a reevaluation of accounting practices, leading to increased demand for forensic accounting services (Berghoff & Spiekermann, 2018). Bhasin (2015) stated that the growth of corporate fraud during the late 20th century highlighted the inadequacies of traditional auditing methods, leading to the establishment of forensic accounting as a separate field of study and practice. These developments underscored the importance of forensic accountants in ensuring compliance and detecting fraud. As forensic accounting has evolved, so too have its methodologies and tools. Integrating technology, particularly data analytics and digital forensics, has transformed the practice, allowing forensic accountants to analyse vast amounts of data quickly and efficiently. This evolution is particularly relevant in the digital age, where financial transactions are increasingly complex and susceptible to fraudulent activities. The historical development of forensic accounting underscores its evolution from a niche practice to a fundamental aspect of modern accounting, particularly in the wake of significant corporate scandals and regulatory changes.

Forensic Accounting and Financial Crime

Forensic accounting plays a pivotal role in addressing financial crimes by providing the necessary tools and methodologies for detection and prevention. The relationship between forensic accounting and financial crime, detailing the types of financial crimes and the specific role forensic accounting plays in combating them. Financial crimes encompass illicit activities involving financial systems' misuse for personal gain (Turner, 2011). Understanding these types is crucial for forensic accountants to detect and prevent such crimes. The following are some of the most common financial crimes: Fraud includes various deceptive practices intended to secure an unfair or unlawful gain. Typical forms of fraud include financial statement fraud, which is the manipulation of financial statements to present a false picture of a company's financial health. This can involve overstating revenues or understating liabilities (Kwok, 2017). Asset Misappropriation: Theft of company assets by employees or management, including embezzlement and misuse of company funds. Money Laundering conceals the origins of illegally obtained money, typically through transactions that make the funds appear legitimate. Money laundering is often associated with organised crime and drug trafficking (Levi & Soudijn, 2020). Tax Evasion is the illegal act of not paying taxes owed to the government, usually achieved through underreporting income, inflating deductions, or hiding money in offshore accounts (Mineva & Stefanov, 2018). Bribery and Corruption involve the offering, giving, receiving or soliciting of something of value to influence the actions of an official or other person in a position of authority (Basabose & Basabose, 2019). Corruption can severely undermine public trust and economic stability. Cybercrime, the rise of digital transactions, has become a significant concern. This includes hacking into systems to steal data or funds, identity theft and using online platforms for fraudulent schemes (Alsayed & Bilgrami, 2017). Understanding these various forms of financial crimes is essential for forensic accountants, as each type may require different investigative techniques and methodologies for effective detection and prevention.

Forensic accounting serves a critical function in preventing and detecting financial crimes. The role of forensic accountants can be categorised into several key areas. Forensic accountants are trained to conduct thorough investigations into financial discrepancies and irregularities. They use data mining, trend, and financial statement analysis to identify potential fraud. According to Javaid (2024), effective investigative techniques can uncover hidden fraud patterns, enabling organisations to respond proactively. One of the forensic accountants' primary roles is establishing and implementing fraud prevention programs. These programs often include the development of robust internal controls, employee training, and regular audits. By fostering a culture of transparency and accountability, organisations can significantly reduce the risk of financial misconduct (Efunniyi et al., 2024). Forensic accountants often work closely with law enforcement agencies to provide expertise in criminal investigations. Their ability to present financial data clearly and understandably is crucial for legal proceedings. This collaboration ensures that findings are documented accurately and can be used effectively in court (Adeusi et al., 2024). Forensic accountants may serve as expert witnesses in legal cases involving financial crimes, providing testimony regarding their findings and the methodologies used in their investigations. This role is vital in helping judges and juries understand complex financial issues. The evolving nature of financial crimes necessitates that forensic accountants remain informed about emerging trends and techniques. Ongoing education and training enable forensic accountants to effectively adapt their practices to address new challenges (Daraojimba et al., 2023). By understanding the various types of financial crimes and the critical role forensic accounting plays in their detection and prevention, stakeholders can better appreciate the importance of this field in maintaining the integrity of financial systems. This foundation sets the stage for further exploration of the challenges and opportunities associated with forensic accounting practices in Nigeria.

Forensic Accounting Techniques

Forensic accounting employs various techniques to investigate financial discrepancies and uncover fraudulent activities. These techniques are essential for forensic accountants to enhance financial integrity and accountability—the two critical forensic accounting techniques are documentation review and financial statement analysis (Đukić et al., 2023). Documentation review involves systematically examining financial documents and records to identify irregularities, inconsistencies or signs of fraud (Wells, 2024). This technique is foundational in forensic accounting, providing evidence to support investigations and legal proceedings. The documentation review process typically includes the following steps. Forensic accountants gather relevant documents such as invoices, receipts, bank statements, contracts and internal reports. This comprehensive collection is crucial for establishing a complete financial picture. Ensuring that documents are legitimate and not tampered with is critical to the review process. Forensic accountants may use various techniques, including forensic document analysis, to ascertain the authenticity of the documents. Documentation is cross-referenced against other financial records to identify discrepancies. For example, comparing invoices with purchase orders and payment records can reveal inconsistencies that may indicate fraudulent activities. The documentation review technique is vital for several reasons: It provides concrete evidence that can be used in legal proceedings. The thorough examination of documents helps build a strong case against fraudulent activities. By identifying anomalies in documentation, forensic accountants can detect patterns of misconduct, such as duplicate payments, inflated invoices, or unauthorised transactions. The documentation review process can also highlight weaknesses in an organisation's internal controls. This insight allows organisations to implement improvements that can prevent future fraud incidents. Financial statement analysis evaluates an organisation's financial statements to assess its financial health and identify potential red flags indicative of fraud (du Toit, 2024). This technique involves using various analytical methods and ratios to interpret financial data. Forensic accountants utilise ratio analysis to assess the relationships between different financial statement items. Common ratios include current, quick, and debt-to-equity ratios (Azham, 2024). This method involves examining financial statement data over multiple periods to identify trends and patterns. A sudden spike or drop in revenues, expenses, or profits may warrant further investigation. For instance, a consistent increase in revenue without a corresponding increase in sales activity could indicate revenue manipulation.

Forensic accountants compare a company's financial statements against those of similar organisations or industry averages. This benchmarking can help identify unusual discrepancies that may suggest fraudulent activities. For example, if a company's expense ratios are significantly lower than its competitors, it could indicate an underreporting of expenses. By identifying unusual patterns or anomalies in financial data, forensic accountants can detect potential fraud before it escalates. This proactive approach is essential for mitigating financial risks. Stakeholders, including management and investors, rely on financial statement analysis to make informed decisions. Accurate analysis can aid in identifying areas of concern that require immediate attention. Ensuring that financial statements are correct and comply with regulatory standards is vital for maintaining stakeholder trust. Forensic accountants play a key role in ensuring that organisations adhere to these standards, thereby reducing the risk of legal repercussions. By systematically examining documents and analysing financial data, forensic accountants can uncover irregularities, provide evidence for legal proceedings, and enhance the overall integrity of financial reporting. These techniques are essential for organisations to maintain transparency and accountability in their financial practices.

Advanced Technologies in Forensic Accounting

The landscape of forensic accounting is rapidly evolving, driven by technological advancements. The integration of advanced technologies has significantly enhanced the ability of forensic accountants to detect, prevent and investigate financial crimes—the two critical technological advancements in forensic accounting: big data analytics and predictive analytics. Big data analytics examines large and complex datasets to uncover hidden patterns, correlations and insights that can inform decision-making (Vassakis et al., 2018). In forensic accounting, big data analytics is pivotal in analysing vast amounts of financial and operational data to identify potential fraud or anomalies. Forensic accountants utilise data mining techniques to sift through large datasets to discover patterns or irregularities that may indicate fraudulent activities (Thomas, 2024). This can involve the analysis of transaction records, customer data and operational metrics. Advanced algorithms can identify unusual patterns or behaviours within financial data that deviate from expected norms (Hilal et al., 2022). For example, if an employee consistently processes unusually high reimbursement claims, this can trigger further investigation. Big data analytics often incorporates visualisation tools that help forensic accountants interpret complex data sets more effectively. Visualisation techniques, such as heat maps and dashboards, provide explicit representations of data trends and anomalies, aiding in identifying potential fraud (Dilla & Raschke, 2015). The ability to quickly analyse large volumes of data allows forensic accountants to conduct investigations more efficiently, reducing the time required to identify potential fraud. By leveraging advanced analytics, forensic accountants can minimise human error and bias, leading to more accurate investigations and findings. Big data analytics enables organisations to implement real-time monitoring systems that can flag suspicious transactions as they occur, allowing for immediate investigation and mitigation of potential fraud (Ekundayo et al., 2024). Despite its benefits, implementing big data analytics in forensic accounting faces challenges, including the need for skilled personnel, data privacy concerns, and the complexities of integrating disparate data sources.

Predictive analytics involves statistical algorithms and machine learning techniques to analyse historical data and predict future outcomes (Rajeshwari & Mishra, 2021). In forensic accounting, predictive analytics can be instrumental in identifying potential fraud risks before they materialise. Forensic accountants can use predictive models to assess the likelihood of fraudulent activity within an organisation. By analysing historical fraud cases and identifying common characteristics, they can create profiles of high-risk areas that require closer scrutiny (Aivaz et al., 2024). Predictive analytics can help develop fraud detection models that use historical data to identify patterns indicative of fraud. These models can continuously learn and adapt as new data is introduced, improving their effectiveness. Forensic accountants can utilise predictive analytics to conduct scenario analyses, exploring various "what-if" situations to understand potential fraud risks under different conditions (Kranacher & Riley, 2019; Nigrini, 2020). This can inform strategic decisions and resource allocation for fraud prevention efforts. Predictive analytics enables organisations to adopt a proactive approach to fraud detection, allowing them to implement preventive measures before fraud occurs. By identifying high-risk areas through predictive modelling, organisations can allocate resources more effectively, focusing their efforts on the most vulnerable aspects of their operations. The insights gained from predictive analytics can enhance decision-making processes, enabling organisations to respond swiftly to potential fraud risks. However, using predictive analytics in forensic accounting is not without challenges. These include the need for high-quality data, the complexity of model development, and the potential for false positives, which may lead to unnecessary investigations. By leveraging these technologies, forensic accountants can analyse vast amounts of data, identify potential fraud risks, and make informed decisions that enhance organisational integrity. Understanding these advancements is crucial for improving the effectiveness of forensic accounting practices, particularly in addressing the challenges posed by financial crimes in Nigeria.

Regulatory Framework in Nigeria

The regulatory framework in Nigeria plays a crucial role in combating financial crimes, including tax fraud and Corruption. This framework comprises various laws, agencies and initiatives to promote transparency, accountability and ethical conduct in financial practices. The two significant aspects of Nigeria's regulatory framework are anti-corruption laws and the role of the Economic and Financial Crimes Commission (EFCC) and other agencies. Nigeria has enacted several anti-corruption laws to address Corruption and promote integrity in public and private sectors. These laws provide the legal foundation for investigating and prosecuting financial crimes.

Key Legislation:

- The Corrupt Practices and Other Related Offences Act (2000) establishes the legal framework for combating Corruption in Nigeria. It defines various forms of corrupt practices and prescribes penalties for offenders. The act empowers the Independent Corrupt Practices and Other Related Offences Commission (ICPC) to investigate and prosecute corruption-related offences (Aliyu, 2024).
- The Economic and Financial Crimes Commission (EFCC) Act (2004): This Act established the EFCC, which is tasked with enforcing laws against financial crimes, including fraud, money laundering, and terrorism financing (Bello et al., 2022). The EFCC is empowered to investigate and prosecute offences related to economic and financial crimes.
- The Money Laundering (Prohibition) Act prevents money laundering by requiring financial institutions to implement robust customer identification and reporting mechanisms (Chong & Lopez-De-Silanes, 2015). It establishes frameworks for investigating and prosecuting money laundering offences.
- The existence of these anti-corruption laws is essential for several reasons:
- Legal Framework for Prosecution: These laws provide the necessary legal basis for holding individuals and organisations accountable for corrupt practices, thereby fostering a culture of compliance and integrity.

- Deterrence: The stringent penalties prescribed by these laws deter potential offenders, reducing the likelihood of corrupt practices.
- Promotion of Transparency: By mandating disclosures and accountability measures, anti-corruption laws promote transparency in financial transactions, making it more difficult for fraud and Corruption to thrive.
- Economic and Financial Crimes Commission (EFCC): The EFCC is a pivotal agency in Nigeria's fight against economic and financial crimes. Established under the EFCC Act of 2004, its primary responsibilities include:
- Investigation and Prosecution: The EFCC investigates cases of financial crimes, including fraud, money laundering, and public Corruption. This agency has the authority to arrest and prosecute offenders, making it a critical player in enforcing anti-corruption laws (Adeniran, 2019).
- Collaboration with Other Agencies: The EFCC collaborates with various national and international agencies to combat financial crimes. This includes partnerships with financial institutions, law enforcement agencies, and international organisations to share intelligence and resources.
- Public Awareness and Education: The EFCC also engages in public education initiatives to raise awareness about the consequences of financial crimes and the importance of integrity in economic practices.
- Other Regulatory Agencies:
- Independent Corrupt Practices and Other Related Offences Commission (ICPC): Alongside the EFCC, the ICPC plays a critical role in enforcing anti-corruption laws. Its focus is primarily on public sector corruption, and it conducts investigations and prosecutes offenders.
- Central Bank of Nigeria (CBN): The CBN has regulatory authority over financial institutions and plays a significant role in preventing money laundering and financial fraud through implementing the Money Laundering (Prohibition) Act. It establishes guidelines for banks and financial institutions to ensure compliance with anti-money laundering regulations.
- Nigerian Financial Intelligence Unit (NFIU): The NFIU is responsible for receiving, analysing, and disseminating financial intelligence to combat money laundering and terrorism financing. It collaborates with the EFCC and other agencies to enhance the effectiveness of financial crime investigations.

The EFCC and other regulatory agencies are crucial in the fight against financial crimes for several reasons. The collaboration among various agencies ensures a comprehensive approach to combating financial misconduct and addressing public and private sector corruption. These agencies provide training and resources to enhance the capabilities of law enforcement and financial institutions in detecting and preventing financial crimes. Effective enforcement of anti-corruption laws and the visible activities of regulatory agencies contribute to restoring public trust in governance and financial systems. By strengthening these regulations and agencies, Nigeria can enhance its efforts to deter financial misconduct and foster a culture of integrity in its economic landscape. By examining the specific practices and techniques used in forensic accounting within the Nigerian context, this study provides valuable insights into how these methods can effectively combat tax fraud. The focus on Nigeria addresses a critical gap in the literature regarding forensic accounting and tax fraud in developing economies. This research highlights the unique challenges and opportunities organisations face in Nigeria, enriching the global discourse on forensic accounting. The findings of this research can inform policymakers and regulatory bodies about the effectiveness of forensic accounting practices in reducing tax fraud. This knowledge can guide the development of more robust tax compliance frameworks and training programs for accountants and auditors. The research provides actionable recommendations for organisations implementing effective forensic accounting practices. By identifying best practices and potential barriers, the study enhances the overall effectiveness of fraud detection and prevention strategies in the Nigerian context. This study lays the groundwork for future research in forensic accounting and tax fraud, encouraging further exploration of related topics such as the impact of technology on fraud detection and the role of organisational culture in fostering compliance.

RESEARCH METHOD

The research methodology employed in this study utilises a case study approach to investigate the impact of forensic accounting on tax fraud in Nigeria. The study adopts a qualitative case study design, which allows for an in-depth exploration of the complexities surrounding forensic accounting practices and their effectiveness in mitigating tax fraud. This approach is particularly suitable for understanding the contextual factors and nuances influencing the implementation and outcomes of forensic accounting in Nigerian organisations. The case study focuses on selected organisations in Nigeria that have implemented forensic accounting practices. The criteria for selection include Organisations with a record of facing tax fraud issues. Companies that have integrated forensic accounting into their operational framework. A mix of public and private sector organisations to provide a comprehensive view. The study utilises a combination of primary and secondary data collection methods: Primary Data: Interviews: Semi-structured interviews were conducted with forensic accountants, internal auditors, tax compliance officers, and management personnel in the selected organisations. These interviews gather insights into their experiences, challenges and the perceived effectiveness of forensic accounting in preventing tax fraud. Focus Groups: Focus group discussions were organised with financial management and compliance stakeholders to encourage a dialogue about forensic accounting practices and their impacts. Secondary Data: Document Review: The researcher analyses relevant documents, such as internal reports, financial statements, and regulatory compliance records. This provides context and supports the findings from primary data. Literature Review: Existing literature on forensic accounting, tax fraud, and related case studies was reviewed to support the research framework and identify gaps in current knowledge. The data collected was analysed using qualitative analysis methods. Thematic Analysis: Interview and focus group transcripts were coded thematically to identify patterns, themes, and insights related to forensic accounting practices and tax fraud mitigation. This involves Reading transcripts to familiarise myself with the data and coding relevant segments that align with the research objectives. Grouping codes into broader themes that capture key findings. Content Analysis: Secondary data from documents was analysed to extract relevant information regarding implementing forensic accounting and its outcomes in the selected organisations. The researcher ensured that participants were informed about the study's purpose, the nature of their involvement and their right to withdraw at any time. The identities of participants and organisations were kept confidential, and data was stored securely. The researcher ensures an accurate representation of participants' views and avoids data collection and analysis bias. By employing a case study approach, the research seeks to generate rich, contextual insights that contribute to understanding the effectiveness of forensic accounting practices in combating financial crimes.

RESULTS AND DISCUSSION

The data collected for this study was derived from a combination of qualitative interviews and quantitative assessments of financial crime cases in Nigeria. The qualitative interviews involved key stakeholders, including forensic accountants, regulatory agency officials, and business leaders, who provided insights into their experiences and perceptions regarding forensic accounting practices. The quantitative data encompassed statistics on reported financial crimes, the frequency of forensic investigations, and the outcomes of such investigations over recent years. This multifaceted approach allowed for a comprehensive understanding of the current landscape of forensic accounting in Nigeria and its effectiveness in addressing financial misconduct. The analysis of the collected data revealed several key themes that highlight the critical aspects of forensic accounting in Nigeria. One prominent theme from the data is the importance of documentation review in forensic accounting. Stakeholders emphasised thoroughly examining financial records, contracts, and invoices is essential for identifying discrepancies and potential fraud. The findings indicated that many successful fraud investigations began with meticulous documentation reviews, which often uncovered irregularities that prompted further inquiry. This theme underscores the necessity for forensic accountants to be proficient in documentation analysis as a foundational skill. Another significant theme is the role of financial statement analysis in detecting fraud. Participants noted that analysing financial statements helps identify unusual trends and anomalies that may indicate fraudulent activity. Techniques such as ratio, trend, and common-size analysis were highlighted as practical tools for forensic accountants. The findings suggest that financial statement analysis not only aids in detecting fraud but also serves as a preventive measure as organisations become more vigilant in monitoring their financial health. The integration of technology into forensic accounting practices emerged as a crucial theme. Respondents expressed that advanced technologies, such as big data analytics and predictive modelling, enhance the ability to analyse vast amounts of data quickly and accurately. The findings indicate that technology facilitates anomaly detection and trend analysis, allowing forensic accountants to identify potential fraud scenarios more effectively. However, challenges related to adopting these technologies, such as high costs and lacking technical expertise, were also noted.

The data revealed a significant theme regarding the types of financial crimes prevalent in Nigeria, including fraud, money laundering, and Corruption. Stakeholders identified these crimes as significant impediments to economic growth and stability. The findings highlighted that the complexity and sophistication of these crimes require robust forensic accounting practices and a collaborative approach among various stakeholders, including regulatory agencies and law enforcement. The implications of these findings are multifaceted. Firstly, the emphasis on documentation review and financial statement analysis suggests that training programs for forensic accountants should prioritise these skills to enhance their effectiveness in fraud detection. Secondly, the positive impact of technology on forensic accounting practices indicates that investing in advanced analytical tools can significantly improve investigative outcomes. Organisations should consider allocating resources to acquire and implement such technologies. Furthermore, identifying prevalent financial crimes underscores the urgent need for a stronger regulatory framework and collaborative efforts among stakeholders to combat these issues effectively. Enhanced communication and cooperation between forensic accountants, regulatory agencies, and law enforcement could lead to more successful investigations and prosecutions. Overall, the findings indicate that while forensic accounting is a vital tool in the fight against financial crimes in Nigeria, addressing the identified challenges and leveraging the strengths of forensic accounting practices can lead to more effective prevention and detection strategies.

Thematic Analysis

The thematic analysis of the data collected from interviews, focus groups and document reviews revealed several key themes that illuminate the impact of forensic accounting on tax fraud in Nigeria. The analysis highlights the experiences and perceptions of stakeholders and identifies the challenges and benefits associated with forensic accounting practices. Participants consistently emphasised the role of forensic accounting in uncovering financial irregularities. Many respondents noted that forensic accountants possess specialised skills to detect subtle signs of tax fraud that might escape traditional auditing methods.

- Quote from Participant: "Forensic accounting has helped us identify discrepancies that we would have never found through regular audits. It's like having a magnifying glass for financial data."
- This theme underscores the belief that the investigative nature of forensic accounting enhances the integrity of financial reporting and compliance. The ability to scrutinise complex financial transactions was highlighted as a critical factor in mitigating tax fraud. The analysis revealed a significant trend towards using advanced technological tools in forensic accounting. Participants discussed how big data analytics, predictive modelling, and automated data collection systems have transformed their approach to detecting fraud.
- Quote from Participant: "With the help of data analytics software, we can sift through thousands of transactions in minutes. It's a game-changer for us."
- This theme illustrates that technological integration improves efficiency and enhances fraud detection efforts' accuracy. Respondents noted that these technologies allow for real-time monitoring of financial transactions, enabling quicker responses to suspicious activities. Despite the advantages, participants identified several challenges associated with implementing forensic accounting practices. Key issues included the high costs of technology, the need for specialised training, and resistance from staff who may be wary of increased scrutiny.
- Quote from Participant: "While we see the benefits, the costs associated with training and technology can be overwhelming for smaller firms. Not everyone is on board with the changes, either."
- This theme highlights organisations' barriers to adopting forensic accounting practices, suggesting that these measures' effectiveness may be compromised without adequate support and resources. Another prominent theme emerged around the importance of collaboration between forensic accountants and law enforcement agencies. Participants noted that effective communication and partnership with regulatory bodies enhance the overall impact of forensic accounting.
- Quote from Participant: "When we work closely with the EFCC, it amplifies our efforts. We can share information and coordinate investigations, which leads to more successful outcomes."
- This theme indicates that collaboration facilitates information sharing and strengthens the framework for combating financial crimes, creating a more unified approach to tax fraud prevention. The findings also revealed that implementing forensic accounting practices positively influences organisational culture. Participants reported that the focus on transparency and accountability fosters a culture of integrity within their organisations.

- Quote from Participant: "Since we started prioritising forensic practices, there's been a noticeable shift in how employees view compliance and ethics. It's become part of our culture."

This theme suggests that forensic accounting serves as a tool for detection and plays a vital role in shaping an organisation's values and ethical standards. While the effectiveness of forensic practices in detecting fraud is evident, challenges related to implementation and collaboration remain. Furthermore, integrating technology and fostering an ethical organisational culture contribute to forensic accounting efforts' success. These findings provide valuable insights that can inform practitioners and policymakers in enhancing Nigeria's fight against tax fraud.

Discussion of findings

The findings of this research highlight the critical role of forensic accounting in scrutinising financial documents to identify inconsistencies indicative of financial misconduct. Similar to previous studies, such as those by Vutumu (2024), this research confirms that forensic accountants are essential in uncovering fraudulent activities through meticulous documentation reviews. However, while Vutumu emphasised the collaborative relationship between forensic accountants and law enforcement, this research elaborates on the methodologies employed, such as cross-referencing financial records and leveraging legal frameworks to enhance investigative outcomes. The significance of these findings extends beyond individual cases of fraud; they reflect a broader need for integrating forensic accounting into standard accounting practices. As financial crimes become more sophisticated, traditional auditing methods may prove inadequate (Roszkowska, 2021). This research underscores the need for a paradigm shift within the accounting profession, advocating for training that encompasses accounting principles and investigative techniques. By recognising the importance of forensic accounting, organisations can better mitigate financial risks and foster a culture of accountability, ultimately contributing to economic stability. The study's results indicate that forensic accounting significantly enhances financial statement analysis, enabling the detection of data manipulation and fraudulent activities. This aligns with findings from Dalwadi (2023), who highlighted the effectiveness of forensic accounting in uncovering discrepancies in financial reports. However, while their research primarily focused on the techniques used, this study delves deeper into the implications of these findings for stakeholder confidence and investment decisions. The ability to detect fraudulent activities through financial statement analysis signifies a critical safeguard for domestic and foreign investors. As financial markets become increasingly interconnected, the integrity of financial reporting is paramount. This research highlights that robust forensic accounting practices enhance the reliability of financial statements and protect stakeholders from potential losses, reinforcing trust in the financial system. Moreover, the findings suggest that improving the skills and expertise of forensic accountants is essential for maintaining the quality of financial reporting, which ultimately contributes to a more resilient economic environment. Integrating advanced technology with massive data analytics became a key theme in enhancing forensic accounting practices. This finding is consistent with the literature reviewed by Challoumis (2024), emphasising how technological advancements facilitate the analysis of complex financial datasets. However, this research expands on the discussion by illustrating specific technological tools that improve the efficiency of forensic investigations, such as automated data collection and predictive analytics. The significance of these findings lies in the transformative potential of technology within the forensic accounting domain. As financial crimes evolve, adopting cutting-edge technology becomes a necessity rather than a luxury. This research suggests that organisations must invest in technological infrastructure and training to leverage these advancements effectively. By doing so, they can enhance their investigative capabilities, thereby contributing to a more secure financial landscape. The findings also indicate a broader trend toward digitalising accounting practices, which aligns with global movements toward transparency and accountability in financial reporting. The study identified various financial crimes in Nigeria, including tax evasion, money laundering, and foreign exchange malpractice. These findings resonate with previous research by Ali and Saha (2016), which highlighted the systemic nature of Corruption and its implications for economic development. However, this research delves deeper into the specific causes of these financial crimes, linking them to broader socio-economic factors, such as materialism and wealth inequality. The implications of these findings reflect a critical understanding of the systemic challenges facing Nigeria's financial landscape. The persistence of financial crimes undermines economic growth and erodes public trust in institutions. This research signifies the urgent need for comprehensive reforms that address the regulatory framework and the socio-economic conditions that foster Corruption. By recognising the interconnections between these factors, stakeholders can develop more targeted strategies to combat financial crimes effectively. This broader perspective emphasises the importance of addressing underlying issues like poverty and inequality to create a more just and equitable financial system.

CONCLUSION

This study has examined the role of forensic accounting in combating financial crimes, particularly tax fraud, within the Nigerian context. Financial crimes, including tax fraud, remain significant in Nigeria, exacerbated by inadequate traditional auditing methods and the increasing sophistication of fraudulent schemes. Forensic accounting techniques, such as documentation review and financial statement analysis, have enhanced the detection and prevention of financial misconduct. Integrating advanced technologies like big data analytics and predictive analytics further strengthens these efforts. Although Nigeria has established a robust regulatory framework with various anti-corruption laws, the enforcement of these laws is often hindered by resource constraints, lack of coordination among agencies, and insufficient training for law enforcement personnel. There is a notable lack of awareness and understanding of forensic accounting practices among stakeholders, which limits the effective implementation of these techniques in organisations. The findings of this study underscore the critical need for enhanced forensic accounting practices to address financial crimes in Nigeria effectively. The traditional methods of financial oversight are insufficient in combating sophisticated fraudulent activities, necessitating a shift towards more specialised approaches. The regulatory framework, while comprehensive, requires better implementation and coordination among agencies to ensure that financial crimes are effectively prosecuted. Additionally, fostering a culture of transparency and accountability within organisations is essential for reducing the risk of fraud. Overall, the study concludes that integrating forensic accounting into existing financial practices and a stronger regulatory framework can significantly enhance Nigeria's detection and prevention of financial crimes.

Based on the findings and conclusions of this study, the following practical recommendations are proposed: Implement comprehensive training programs for accountants, auditors, and regulatory agency personnel on forensic accounting techniques and the use of advanced technologies. This will improve their capacity to identify and combat financial crimes effectively. Foster greater collaboration and information sharing among regulatory agencies like the EFCC, ICPC and NFIU. Establishing joint task forces can enhance the effectiveness of investigations and prosecutions. Encourage organisations to invest in advanced technologies, such as big data and predictive analytics, to improve their ability to detect irregularities and potential fraud in real-time. Conduct public awareness campaigns to educate stakeholders about the importance of forensic accounting and its role in promoting financial integrity. This will help create a culture of compliance and ethical behaviour in economic practices. Review and strengthen existing anti-corruption laws to close loopholes and ensure more stringent offender penalties. This will serve as a deterrent to potential fraudsters

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Combating Economic and Financial Crimes in Nigeria: The Role of the Forensic Accountant

Abstract

Economic and financial crime has been a clog in the wheel of progressand a majorproblem bedevil economic prosperity and growth

modelsof most nations of the world. Due to this government in some quarters have had the reason to set upinstitutions to unravel as well asdispels themenace. Despite this,fewer than muchsuccess mayhave been achieved by the respective anti-corruption agencies as a result of not identifying with therole of forensic accounting science in planning, investigating and representing expert witness testimony onbeforelawsuit. This paper attempts toappraisethe role of forensic accountant in combating economic and financial crimes in Nigeria. The paper explored relevance components of economic and financial crimes and extensively discussedconcepts of crime and criminality, corruption, white collar and cybercrimes. Specifically, the study reviews the historical antidotes of forensic accounting, emphasizes on the role of forensic accounting science in litigation and forensic accountantensuring economic and financial crime immersed. Moreso, the study identifies basis for future research, some potential crimes factors and forensic accounting science expert's opinion in crime scene as well as reviewed prior studies and gap envisaged. Essentially, the study reviewed theoretical issues using qualitative approach thereby involving a survey of literature to decipher relevant issues. Itthereforesought that forensic accounting serves the basis forinvestigation, expert witness testimonyand opinion of expert in lawsuit so as to unravel crimes, and reachresolution for recovering. However, concludes that there is need to involve and embrace accounting expert science in all facets of crime investigation in order to accelerate detections and ameliorate incidences of failed attempt on crime recovery related to economic and financial crimes. Therefore, propose that public and private sectors should engage, recruit and employservices of and/or stationed forensic accountant to review,strengthen, reappraises records and internal control on routine basis. Also to check incidences of crime perception as well as anti-corruption agencies saddled with the responsibilities of fighting economic and financial crimes to employ and adopt engagement of forensic accountant on regular basis among others for all-inclusiveness works of planning, investigating, detecting,and recovering.

Keywords: Economic and Financial Crimes, Corruption, Forensic Accountant, Blue Chip, Cybercrimes, Litigation, Forensic Evidence.

1. Introduction

Crime is a socially correlated phenomenon. It has been described as a global phenomenon, a scourge to socio-economic liberalization and prosperity, and a major drawback to socio-justice, political dynamism and economic growth and development.Economic and financial crime has resulted to institutional shock, bankruptcy, failure and fall of potential and great institutions.It has also been found in the loss of output, industrial capacity, investment and employment[1] opportunities. Economic and financial crime i0s a menace, and a global phenomenon which has raises tremendous concern among countries of the world. In the world over, economic and financial crime has posed serious threats and challenges in mitigating poverty and economic problems in most developing and under developing countries. The challenges of economic and financial crime hampers economicaggregate output, and cause a redundant in average prosperity to investand do business in real term in those countries' economy. The effect of economic and financial crime cannot be overemphasized. Financial crime poses a serious threat to the integrity and security of legitimate businesses and institutions, and to the safety and prosperity of private citizens and communities. Experts argue that the profile of financial offenders is extremely diversified and includes individuals who may be motivated by greed or ideology.[2]

Accordingly, majorityof the state's economyare on stampede, with great losses to potential outputdue to economic and financial crimes throughkickbacks, bribery and corruption.The incessant and alarming rate of rising incidence of high profile economic and financial crime cases worldwide raises the need for tools combatting the menace. Accordingly, observers have suggested that crime is more endemic in the financial sector than in any other sector of the economy. Therefore, illegality and fraudulent activities is more or less major ubiquitous in today's economic and financial space.[3] However, in the emerging economic scenario, forensic accounting is an essential integral tool for uncovering and inquiring into financial crime and direction of justice. Providing decisive information, expert opinion, testimony and forensic analysis about the facts found related to financial crime. Though, forensic accounting is a new area, it has in the recent times unraveled sound opinion judgment in both banking and insurance industries, including government agencies in Nigeria and world at large. The police institution has also taking the usefulness help of forensic accountant to resolve litigations and settle claims due to the scope and wide spread spectrum of financial scourge. The increasing concern in marital devoicing, corruption, blue chip scam, white collar crimes, illicit and money laundering, cybercrime, internet and computer related fraud, misappropriation of funds and insider dealings among others, and the difficulties faced by law enforcement agencies uncovering fraud strides had contributed to the growth of the profession.

Furthermore,forensic accounting is perceived as an encapsulating all other investigating related aspects in uncovering financial fraud.[4] It is a systematic scientific method of examination of evidence by a specialist to be used by a court or public debate ultimately for dispute resolution. It is the action of identifying, recording, setting, extracting, sorting, reporting and verifying past financial data or other accounting activities for settling current or prospective legal disputes or using such past financial data for projecting future financial data to settle legal disputes.[5] Forensic accounting is a strategic approach whereby financial and non-financial information are congregated, analyzed and reported to determine the cause and effect of an event as an evidence of misconduct. It is the branch of accounting that deals with the application of accounting methodology to legal information, problems and proceeding to the users of accounting information.[6] The general expectation is that forensic accounting may offer some respite to the seemingly vulnerability of conventional accounting and auditing systems to financial fraud. [7]

Moreso, forensic accounting is the application of financial skills and investigative mentality to unsettle issues, conducted within the context of the rules of evidence.[8] Forensic accounting is a viable tool in combating economic crime, and can be described as the application of accounting techniques to explain financial and non-financial transitions in a statements, judgment, order, attestation, evidence and exhibit for litigation and investigation supports.[6] Suffice to say that the increasing sophistication of financial fraud requires that forensic accounting be added to tools necessary to bring about the successful investigation and prevention of these individuals involved in criminal actions.[9] Forensic accounting as the application of financial skills and investigative mentality to unresolved issues, conducted within the context of the rules of evidence. Forensic accounting involves the application of accounting and auditing, financial and investigative skills, to unsettled issues, conducted within the context of the rules of evidence.[10] Following this, the focus of forensic accounting is to identify and review fraudulent transactions to identify the real intent of the perpetrator.Such review may take the form of document reviews, interviews, examination of electronic documents.

Financial forensics is a field that combines criminal investigation skills with financial auditing skills to identify criminal financial activity coming from within or outside of an organization. Financial forensics may be used in prevention, detection, and recovery activities to investigate terrorism and other criminal activity, provide oversight to private sector and government organizations. Consequently,it assesses organizations› vulnerability to fraudulent activities. In the world of investments, financial forensics experts look for companies to short or try to win whistleblower awards. Financial forensics is similar to forensic accounting, which utilizes accounting, auditing, and investigative skills to analyze a company›s financial statements for possible fraud in conjunction with anticipated or ongoing legal action. Therefore, forensic accountant is asked to calculate economic damages occurring as result of breach of contract or provide insight into a case based on a claim of professional negligence.[11] Forensic accountant can be seen as those who are specialist in fraud detection. As an investigator specialize in documenting exactly the kind of evidence required for successful criminal prosecution and which are able to work in complex regulatory and litigation environments with reasonable accuracy and reconstruct missing destroyed or deceptive accounting records.[12] Hence, this study attempts to assess the role of forensic accountants in combating economic and financial crime in Nigeria.

2. Concept of Crime and Criminality

Crime is a socially correlated global phenomenon, and menace to socio-economic prosperity, progress, security and liberation. Crime is a major drawback to political dynamism, economic emancipation and social justice.[1] Experts have argued that the profile of financial offenders is extremely diversified and comprises individuals who may be motivated by greed or ideology.[2] In that regard, financial crimes pose a serious threat to the integrity and security of legitimate businesses, institutions, and safety and prosperity of private citizens, organization, government and community at large.[13] Asserts that criminality or fraudulent practice includes frauds and crimes of all other illegal means of acquiring and possessing an asset to the disadvantages of another person. Frauds are acts of dishonest, deceit, falsifications and manipulations perpetuated to gain undue advantage either monetary and/or non-monetary benefits. [14]

Fraud can be seen as an intentional misrepresentation, concealment or omission of the truth for the purpose of deception or manipulation to the financial detriment of an individual or an organization including embezzlement, theft or any attempt to steal or unlawfully obtain or misuse the asset of the business.[15] Admit that fraud[16] means obtaining something of value or avoiding an obligation by means of deception. This varied forms of conduct, ranging from false claims against insurance policy to some corporate frauds that are meticulously planned and intricate in their execution. According to Economic and Financial Crime ACT [17], fraudis an illegal act that violates existing legislation and these comprise of any form of frauds, narcotic drugs, money laundering, embezzlement, trafficking, bribery, looting and any form of corrupt malpractices and child labour, illegal oil bunkering and illegal mining, tax evasion, foreign exchange malpractice including counterfeiting, currency, theft of intellectual property and piracy, open market abuse, dumping of toxic waste and prohibited good, and so on.

Adds [18] that fraud can increase the operating cost of a business concern such as bank because of the added cost of installing the necessary machinery for its provision, detection, and protection of assets. Thus, the incidence of fraud continues to increase across private and public sector organization amongst nations. Universal problem as no nation is immune although delivering states and their various components suffers the most pain[19] said fraud has continues to be a source of linkage on the resources of businesses and a threat to the livelihood of individuals. [20] Advances that fraud usually involves a complex web of conspiracy and deception that often mask the actual cause and classified into two as the nature or method employed by fraudsters in carrying out the very act. However, the nature of carrying out fraud by the fraudsters could either be internal, external or mixed frauds reaction. He noted that internal fraud is committed by persons in the organization such as staff, directors or co-efforts of both director and staff.While external fraud is done through persons not connected with the organization, and mixed fraud involves outsiders colluding with the organization staff member, director or directors.

Against this backdrop, fraud is a crime, a crime either to organization, state, or individual. Fraud is encapsulated in crime. Crime encompassescorruption, frauds, violent and non-violence. Frauds are all kindsof robbery, heinous and scandalous act, economic and financial crime, blue chip crime such as white-collar crime, cybercrime, illicit crime, money laundering, scandal, internet and computer frauds, stock manipulation,embezzlement, misappropriation, financial statement fraud, kickbacks, theft orcash larceny. It is also a crime to unduly taken possession of someone's asset, property; tangible or intangible, act of selfish gains or engagesin homicide, illicit drugs, terrorism, and suicide, massacre or commit murderto mention but few. These are violence crimes. They aretypes of crimes whichare carried out to accomplish or aidsextra or one crime or the other. While some areexclusively carried out for personal greed andgains others are collectively carried out for group interests or relevance. As a result of this, incidences of crimein the recent past in Nigeria havebeen so alarming, prevalence, endemic and lingering wherefore eating deep into the fabrics of society. Ithasworsened by the day suggesting hence dictates societalnorms, vibes and space of growth. The tenacity of it pervasiveness isnow also appealing and solicitingfor concerted efforts tolessenit decimal on those caught on the web (victims) with the combine mandateof the agencies of government saddle with the responsibility of mitigating crimesinvolving experts opinion from the accounting forensic science point of view.

2.1 Economic and Financial Crime

Economic crime is an illegal act in which beneficiary, perpetuators or offenders' major motivation appears to be economic gain.[21]Describes it as a crime that does not involve violence which is equivalence to normal economy disruption resulting in financial loss or earning that is deliberately earned by a person or group of persons in organization in a way that is not permissive or acceptable to legislative enactment which govern the economic activities violated. The manifestation of economic and financial crime can be comfortably described as wild and endemic.[22]Noted that economic and financial crimes comprise a broad array of activities ranging from fraud to actively manipulating stock market or proceeds from crime laundering. Economic and financial crime has resulted to institutional shock, bankruptcy, failure and fall of potential and great output thereby leading to economic comatose, disruption and deprivation, crises and saboteur.[1] These include bribery, illicit monies, nepotism, cronyism, kickbacks, political donations, artificial pricing and frauds of all kinds.[23]

Assert [24] that financial crimes which may involve frauds are crime against property. It involves the unlawful conversion of the ownership of property belonging to another to one's own personal use and benefit. It may be carried out by individuals, corporations or by organized crime groups, government, government agency or representative and which victims may include individuals, corporations, governments, or world at large. Therefore fraud is a predetermined planned tricky process or device usually undertaken by a person or group of persons with the sole aim of cheating another person or organization to gain ill-gotten advantage which would not have occurred in the absence of such deceptive procedure.[25]

Argued [26] that financial fraud has also been perceived as the reason for the sudden failure of many reputable organizations.

Accordingly, economic and financial crime is a crime involving the unlawful conversion of the ownership of property belonging to another to one's own personal use and benefit [27], thus a crime against property. It may involve additional criminal acts such as burglary, computer crime, aiding, elder abuse, including violent such as theft, armed robbery or murder, hence, carried out by an individual, groups, organization, corporations, government, states or community. This include according to International Monetary Fund (IMF) [28], a range of activities which are not legal such as money laundering and evasion of tax. Therefore, the quantum of loss that have been involved in economic and financial crimes is huge, and cannot be qualified, it as grievous as tsunamis and/or economic recession, expert says if not checked can lead to partial close down of business as a result of collapse of current incremental economic gains in potential output.Fraud included wide varies of practices out of law to possess or change the existed financial conditions for the benefit of third party.[13] The increasing in number of fraud and fraudulent activities peculiarly Nigeria and around the world has emphasized the need for forensic accountants.

This technique can be employed to effectively investigate and detect cases of corruption in Nigeria.[14] Fraud and fraudulent cases in some countries increased the demand for forensic accounting.[29] In Nigeria, the present and past governments have made commitment, enacted several laws with the aim of combating economic and financial crime. [21] noted that none has made any significant improvement, neither has it impact felt among Nigerians.[30] Agreed thatcrime is a universal constraint as no nation is exempted, although, developing countries like Nigeria and severalother states which suffers of the scourge as it oppose and negatively affected the nation economy. In Nigeria today, there is alarming and increasing number of frauds and fraudulent activities. This emphasizes and informed the visibility of forensic accounting services. [13] Gbegi and Habila[31] admit that nowadays series of economic and financial frauds and other fraudulent activities are evolving, as well being committed barely in all organizations including private and public sectors of global economy.

It follows therefore that if these are not effectively addressing the menace of economic and financial crime has potential of greatly negates the nation economic stability. Consequently, rate of it occurrence is highly disturbing and growing rapidly especially in Nigeria economy. Though, with the involvement of forensic accountant in fraud evaluation, management and prevention, fraud still hold to its beam and being committed on daily basis. Modern organized corporate fraud are sophisticated thereby the need to response to the charging criminal tendencies and threats with the skill of investigation, and to rigorously tackle the menace by forensic accountant and legal experts. However, the increasing sophistication of financial fraud requires that forensic accounting assume or be added to tools necessary to bring the successful investigation and prosecution of these individuals involved in criminal activities.[32]Nevertheless, financial crimes aim of serving financial/economic advantages either directly or indirectly [33], thus, identifying the causes of fraud is very difficult because modern day's organizations frauds involve a complex web of conspiracy and deception that often mast the actual cause.[34]

2.2 Concept of Corruption

Corruption involves with blue-chip, white - collar, cybercrime,internetfrauds,computerpaddingorstuffingrelated crimes, embezzlement, misappropriation;kickbacks, malpractice, bribery, nepotism, egocentric, tribalism, window dressing, religious sentiments, unwholesome heinous acts and so on. It depends on where it surfaced. They are all economicand financial crimes.Asset misstatement, stock manhandling, padding and manipulation, illicit money laundering, scandal, concealment, recordspadding or manhandling, under or over invoicing, payroll theft, payoff inflation, purchase or sales misstatement, receipts over inflated,theft or cash larceny are all forms ofcorruption, economic and financial crimes. They are pervasive and endemic. Although they are almost becomingway of life, theyhave never beenencouraged by all standards and societal norms.Corruption according to, [34] has been identified as a costly diversion of scarce resources and an impediment to development change or effectiveness, a symptom of deeper problems in how a political leadership administers the key financial functions of state.

However, corruption has ability of undermining people and corporate organization integrity.[35]Noted that Nigeria tolerance for the scourge has led to it to having very high rates of poverty, conflict, insecurity and disease, and a threat to security of human lives, as oppose to infrastructural decay, poor healthcare services, education and social amenities and services.[36] Infer that it is the abuse of publication trust for private gain, and a form of stealing. The Independent Corrupt Practices and other related offences commission [20] (ICPC ACT)

, sees corruption as include vices such as bribery, fraud and the other related offences. Also, it is abuse of power or position of trust for personal or group benefit which can be for monetary or otherwise.Transparency [38] International describes corruption as a private or public sector cankerworm, misuse of entrusted powers for individual gains, which including breaches to formal rules where there are violations of formal rules of conduct in pursuit of personal benefits, whether for wealth in the form of bribes or political advantage.

The United Nations Convention against corruption (UNCAC)[39] admits that corruption is a multifaceted, dynamic and flexible problem which encumbrance selfishness, dishonesty. Therefore, deprives a vast majority of desire benefits. According to economic and financial Crime Commission (EFCC ACT) [17], corruption is the non-violent criminal and illicit activity committed with objective of earning wealth illegally either individually or in a group or organized manner thereby violating existing legislation governing the economic activities of government and it administration. Adding, [40] considers corruption as a major challenge to its twin goals of ending extreme poverty by 2030 which anchored on boosting shared prosperity for the poorest among 40% (Percent) of people in developing countries. It noted that corruption has a disproportionate impact on the poor and most vulnerable thereby increasing cost and reducing access to services such as health, education and justice. Hence, a most services developmental challenges to states.

Posit [41] that corruption has fierce impacts on economic and societal development and permeated through entire portions of society and economy. It is a complex social phenomenon and the motivations to engage in corrupt behaviour are multifaceted as a result of interaction at the mico-, meso-, and macro level. Corruption is driven by official tolerance for illicit enrichment, concentration of wealth and economic power in the hands of a few, blending of political and economic interest and total dependence attention on specific economic resources. [35]

Posits[42] that corruption manifests in the form of misappropriation, tribalism, nepotism, kickback, bribery, outright looting of treasuring, over invoicing, embezzlement, money laundering and so on. It is misuse of power or a dishonest use of one's privilege, office or position for personal gains, and thus cancerous global phenomenon which has continued to cripple the developmental efforts of Nations.

Against this backdrop, corruption is a global phenomenon which has raises concern world over. It related to social, economic and political conditions and being considered to be the dangerous and destabilizing phenomenon.[43] Considerably, is in public and private sectors which include other crimes such as bribery, embezzlement, infringement on public properties, evasion of public bidding in public contract, nepotism, favourites, ravishment in awaiting public contract, sub-contracting, illicit enrichment, illegal payment, trading in influence, money laundering, false declaration of assets, window dressing of books of account, undue payment, concealment, record padding, aiding and abetting of all kinds of the detriment of another person, parties, communities and/or nation. Hence, it is a fundamental problem of the third world countries [7,8] said corruption is a form of antisocial behaviour by an individual or a social group which fixate unjust or fraudulent benefits on its perpetuators against established legal norms and agreed moral ethos of the society.

Admit [45] that corruption expresses itself in various forms such as extortion and bribery, fraud and embezzlement, illegal use of public assets for personal gains, over and under invoicing, payment for goods not supplied or services not rendered, under payment of taxes and dues on exports and imports through false invoicing or other declarations, purchase of goods at inflated prices, misappropriation of assets, court decisions awaiting monetary damages will in excess of any injury suffered, removal of documents or even whole case files, nepotism and patronage. In Nigeria, there have been embezzlementsof public fund through corrupt means by government official.Corruption is not a strange word to the ears of citizens. It has become a norm when discussing about the state of the Nation.[46] It is not now clear whether it is poverty or weakness of government institutions. There are in existence several institutions and large body of legislation aimed at addressing the problem of corruption. Despite the large body of legislation, gargantuan proportions of the cankerworm havestill been eaten very deep into the fabric of the society.[35]

Said that it is the greatest challenges facing the nation right from the 80s (eighties). He noted that several governments have come up with different programmes and strategies to curb this menace by ensuring good governance, accountability, transparency and set up anti-corruption agencies to enforce the law against corruption and persecute offenders despite the objective and functions of these agencies, corruption still tending lives of the Nigerian citizens. Suffice to say the effect of this could be as a result of inappropriate inclusion of expert opinions or lack of synergy between anti-corruption agenciessaddle with the responsibility to curtails the scourge and relevant expert knowledge or skill accountant who has to detail recordsand profound relevance future solution in that curbing the vice. Boswelladvances that corruption pernicious impact on government accountability, business integrity, effective economic development, and national security has led to a burgeoning global demand from the public, private and non-governmental sectors for skilled practitioners.[48]

It therefore follows that one of the peculiar dimensions of the anti-corruption agencies' independence is their organization set up and culture. This resulted in a different organizational culture and a lack of forensic expert experience at the early stages.[49,50] Assert that to check this anomaly of corruption, economic and financial crimes, and help the poor economy of Nigeria, perhaps world economy at large to grow, accounting and auditing have to go beyond their normal routine and techniques of accounting and examination of records. The ability of anti-corruption investigators and prosecutors to come up with legally acceptable evidences is very vital and fundamental to successful prosecution of corruption cases. On that regard, consensus among scholars, researchers and practitioners suggested that forensic accounting investigation techniques offers some respite to successful prosecution of corruption cases in the court that the conventional accounting and auditing system can do [43-51] acknowledges that it takes an accountant to catch a corrupt or fraudulent accountant, as a man is expected to know the trick of a monkey in order to catch it. Apparently, strict ethnical conduct must be applied by an auditor in order to carry out forensic accounting successfully. However, forensic or investigative accounting is that branch of accounting that deals with recovering proceeds of fraud, money laundering and other related corrupt practices that occur in an organization.[31]

2.3 White-Collarand Cyber Crimes

White-collar crime is orchestrated scientific and professional involvement of crime, which requires high level language, skills and techniques to perpetuate and detected. White-Collar Crime (WCC) is also called blue-chip or blue-collar crime. It is a kind of crime that is highly sophisticated and need coherent and intellectual knowledge to carry out. It is a crime involve by and/or against individual, state, organization, government, economic and financial institutions. White collar crime is a fraud as well as financial crime. White collar crimes are refer to those financial crimes offenses that are aimed at or against financial institutions. It is a crime against property which involved the unlawful conversion of assets, investment or property becoming to another, organization, government to one's own personal use or benefits. White collar crimes are committed using peculiaror particular techniques. It is a criminal act under gone by abusing one's job or profession to gain specific access to a crime target, also by a person of respectability and highly status in the course [3–85] of legal occupation activities. According to Edelhertzcited in [10], white collar crime is an illegal act or series of illegal acts committed by nonphysical means and by concealment or guile, to obtain money or property, to avoid the payment or loss of money or property or to obtain business or personal advantage. White-collar crime is the use of deception for illegal gain thereby involves breach of trust and some concealment of the true nature of activities.

Meanwhile, cybercrime is a crime with the use of computer and internet.Though, both crimes are high profile crimes and with the aids of involving technology. Cybercrime is mainly embarked uponthrough the use of website, internet. It is also called blue chip or white-collar crime and including all forms of corruption involvements. It incriminatedall fraudulence vice.Ittypes of crime deeply rooted in illicit drugs dealings, money laundering, stock manipulations, misstatements of financial records, financial statements fraud, and all forms of embezzlement, kickbacks through e-re-invoicing, e-robbery, e-crimes, e-mail stuffing, e-massages fraud, e-commerce fraud, e-business fraud, e-government fraud, e-transaction theft, e-drugs sales, Facebook thefts, yahoo boys, 419ers (advance free fraud), blogger, e-buying or purchasing theft, e-sales, e-transfer fraud, burglary, e-pocketing but to name a few. The effect of cybercrime is grossly, exclusively direct, external, grievous, corrosive and huge as well as disruptive to the economy of those caught on the web. Cybercrime is described as those computer mediated activities which are either illegal or considered illicit by certain parties and which can be conducted through global electronic networks [86].

It is an unlawful act where in the computer is used either as a tool or target or both. According to the Oxford Dictionary, cybercrime is a criminal action committed or carried out by means of a computer or the internet[65] asserts that commentators have suggested that crime is more endemic in the financial sector than in any other sector of the economy.[54]

Admits that the technology is ubiquitous and increasingly easy to use by ensuring its availability to both offenders and victims.[87] Adds that the proliferation of digital technology and the use, convergence of computing and communication devices has transformed the ways in which everyone socializes and do business. Therefore, virtually every advance has been accompanied with corresponding niche to be exploited for criminal purpose.Considerably, the forensic expert accountant will be interested in transaction under computer related investigations which are similar to electronic discovery (or e-discovery). These forensic investigations recover data from computers and hard drives to solve a crime or find evidence of misconduct.

Computer investigators can uncover things like sale of black market goods, fraud, and sex trafficking. Some other common situations that require computer investigation are divorce, wrongful termination, employee internet abuse, unauthorized disclosure of corporate information, and other illegal internet activity. Forensic computer investigations discover information on cell phones and hard drives including emails, browsing history, downloaded files, and even deleted data. It followed that among the recent cases in which computer forensics lead to a conviction involved the messages exchanged in an online chat room. Against this backdrop, to conduct a forensic computer investigation, the forensic accountant sizes up situation, log every detail, conduct an initial survey and assess the likelihood of ongoing undesirable activity regarding the information technology and systems, thereby powering down the computers to checked for booby traps. The forensic accountant however duplicate the computer hard drive or other permanent storage unit and thereafter analyze the hard drive.

2.4 Historical Development of Forensic Accounting

Forensic accounting is one of the oldest professions and dates back to the Egyptians. Maurice E. Peloubet first time used the term Forensic Accountant in 1946 in his essay «Forensic Accounting: Its Place in Today›s Economy”. [56]Writing on the same issue opined that a form of forensic accounting can be traced back to 1817 court decision and that in 1824, a young Scottish accountant issued a circular advertising his expertise in arbitration support, but Peloubet was probably the first to publish the phrase forensic accounting. Formalized procedures for the practice were not put in place until the 1980s when major academic studies in the field were published.[55]Archaeological studies disclose that, during 3300-3500 BC, accountants of Egypt were involved in the prevention and detection of fraud. During 18th century close relationship developed between accountancy and legal profession.

Many amendments to financial statement disclosure can be attributed to frauds in the corporate world. In 1930s, an American Eliot Ness was credited to bring down gangster Al-Capone, but his case was based on the investigative work done by Elmer Irey, an accountant with the Internal Revenue Service that ensured Capone's conviction for tax evasion. He was probably America's first high-profile forensic accountant.[76] Admits that the origin of forensic accounting is Kutilya, the first economist to openly recognize the need for the forensic accountant, whom he said mentioned forty ways of embezzlement centuries ago. He, however, stated that the term forensic accounting was carried by Peloubet in 1946. Investigation of fraud and corruption is confirmed thus, not to be new even in Nigeria. It is only gaining prominence because of the growing wave of crime under the seemingly new nomenclature in the last few years.[88] Albrecht iterates that fraud is rarely seen, maintaining that the symptoms of fraud are usually observed. The symptoms do not necessarily mean fraud is being undergone as it may be caused by mistakes. But the act might also be deliberated.[89]

Defines [56] forensic accounting as the application of the laws of nature to the laws of man, describes forensic scientists as examiners and interpreters of legally admissible evidence and facts in cases that also require expert opinions regarding their findings in law court. According to [52], the primary orientation of forensic accounting is explanatory analysis of phenomenon including discovery of deception, and its effects, introduced into the accounting domain. On his part, [79] defines forensic accounting as the combination of accounting, auditing and investigation skills to a standard that is acceptable by a court of jurisdiction to address issues in dispute in the context of civil and criminal litigation.[90] Define forensic accounting as the practice of utilizing accounting, auditing and investigation skills to assist in legal matters and the application of specialized body of knowledge to evidence of economic transaction and reporting suitable for the purpose of establishing accountability or valuation of administrative proceeding.

Forensic accounting as documented in literature is an offshoot of forensic science and accounting.[91] Forensic accounting provides an accounting analysis that is suitable to the organization in the resolution of dispute and in this vein differs from the orthodox accounting practice [88]. Many audit firms employ «forensic accountants» some even market the fact that they include a forensic accountant on each audit engagement. However, in our opinion, this does not change the fact that an audit is not designed to detect fraud. For that reason, audit provides reasonable assurance not absolute assurance that the financial statements are free of material misstatementsnot all misstatements. This is an important distinction many novice users of financial statements overlook. In the case of United States of America (USA), to express an opinion on financial statements, one must be a Certified Public Accountant (CPA). Many forensic accountants in US are CPAs and Certified Fraud Examiners (CFE), although technically neither is required to say one is a forensic accountant or does do forensic accounting work. Nevertheless, to be a credible expert witness in a court of law, one would probably want to at least be an accountant either with an Institute of Chartered Accountants of Nigeria(ICAN) or Association of National Accountants of Nigeria(ANAN).Therefore, both ANAN and ICAN are accredited, certified as well as recognized by extant law and relevance legislationwith reference to carry out such mandates. There are several other credentials and certifications used in US and UK among others internationally.

2.5 The Role of Forensic Accountants in curbing economic and financial Crimes

The role of forensic accountant in curbing economic and financial crime cannot be overstressed in the 21 st century,in the wake of the heinous fraudulent activities in world economy. Thefailure of the major corporate governance mechanism to reduce financial fraud and the increasing sophisticated inclinationforfinancial fraud poses serious threats to investors, government, general public and organization.[92]

This has also prompted the need for relevance in expert opinions in curbing the menace.[58]Noted that forensic accountants are essential to the legal system; providing expert services such as fake invoicing valuations, record review, suspicious bankruptcy valuations and analysis of financial documents in fraud schemes. An expert witness, who analyses, interprets, summarizes, and presents complex business and financial dealings in logical, understandable manners which are supported with facts[46-76] study evaluated forensic accountants as a combination of an auditor and private investigators, knowledge and skills. Therebyemphasizes on investigative skills, law enforcement officer insights, research, law, quantitative methods, auditing, finance,and accounting. The results confirmed that forensic accountants have been employed by the Federal Bureau of Investigation (FBI), Federal Trade Commission (FTC), Internal Revenue Service (IRS), Central Intelligence Agency (CIA), and some other agencies of government to deal with fraudulent practices.

Forensic accountants are trained to look beyond the numbers and deal with the business realities of situations; analysis, summarization, interpretation and the presentation of complex financial business related issues are prominent features of the profession. There developing computerized applications to assists in the analysis and presentation of financial evidence, involves investigating and analyzing financial evidence, assisting in legal proceedings, including testifying in courts as an expert witness and preparing visual aids to support trial evidence, and communicating findings in the form of reports, exhibits and collections of documents.[14] adds that a forensic accountant [73] is required to analyze, interpret, summarize and present complex financial information in a manner which understandable, andhighlighted that the role of forensic accountants in solving corporate failure menace is as giving preliminary advice as an initial appraisal of the pleading as evidence available at the start of proceedings; identifying the key documents which should be made available as evidence, which is very crucial when the forensic accountant is acting for the defence and lawyers are preparing lists of documents to tender in court; preparing a detailed balanced report on quantum of evidence written in a language readily understood by a non-accountant; reviewing expert accounting reports submitted by the other party which may have impact on the quantum of evidence and advising lawyers on these reports; and briefing legal counsels on the financial and accounting aspects of the case during pretrial preparation.

Forensic accountant may be asked to calculate economic damage that may occur as a result of a breach of contract or provide insight into a case base on a claim of professional negligence. A forensic accountant assignment must be of such a quality which it can withstand scrutiny by judges, attorneys and juries.[65] A forensic accountant is an investigator, and can be seen as those who are specialized in fraud detection, in documenting exactly the kind of evidence required for successful criminal prosecution and able to work in complex regulatory and litigation environments with reasonable accuracy hence reconstruct missing destroyed or deceptive accounting records.[16]Forensic accountant will play key significance role with economic and financial crime agencies. He can be useful in crime scene, evidence gathering, and determine object in dispute. Forensic accountant can also help in valuation, quantifying of confiscated item such as property, investment, illicit money, and also represent estimated figure as expert testimony support in oath in law suit.

According to National Association of the Academics[66] (NAA) , the forensic accountant employs a much higher degree of professional skepticism when conducting his or her work.

Suffice to say forensic accountant is not apt to accept explanations and documents at face value. Thus, burrow much deeper into the facts and issues than a tradition auditor, is more familiar with how employees can abuse and misuse controls processes, types of fraud schemes, methods used to circumvent internal controls. Forensic accountants have been described as experienced auditors, accountants and investigators of legal and financial documents that are hired to look into possible suspicious of fraudulent activity within a company.[97] It can be hired by a company who may want to prevent fraudulent outcomes or actions or activities ahead occurring. Forensic means suitable for use in a court of law. This involves the standard and potential outcome that forensic accountants generally have to work.[76] A forensic accountant uses his knowledge of accounting, law, investigative auditing and criminology to uncover fraud, find evidence and present such evidence in court if required to Carried [98] out fraud survey on worldwide, it was found that only 20% (percent) organizations employed forensic accountants although the satisfaction level of their services was rated 88% (percent) as against use of statutory auditors, therefore, led to higher advocacy that auditor to acquired forensic skills in the discharge of their jobs or duties.

Moreso, forensic accountant uses forensic accounting method for inquiries, investigation and determine root cause of claim.[64] admit that forensic which means evidence or material required to be used in a court of law has been incorporated into accounting and finance as a result of hyper increase in white collar crimes.[43] Assert that once fraud is perceived or suspected in an organization set up, a professional set up people invited the forensic accountants to help investigate and possibly detect the fraud and unravel the fraudsters so as to furnish the management of the organization with related and substantial evidence that can be presented and admitted in the court of law as a basis of litigation for prosecution of those involved in crime. [71] Found that forensic accountant should be involved in the risk of management of fraud assessment process than consulting them. Therefore effectively modify the extent and nature of audit test when the risk of management fraud is high. These day detectives and attorneys have to team up with forensic accountants to track down clues in financial records or to find victims and suspects.[36] Investigative services use forensic accountant’s skills and may also require possible courtroom testimony. This skill is thereby required to collect, analyze, and evaluate financial evidence, and the ability to interpret and communicate findings.

Posit [72] that the spates of corporate failures have place greater responsibility and function on accountants to equip themselves with the skills to identify and act upon indicators of poor corporate governance, mismanagement, frauds and other wrong doings. The duo noted that as a respite of this, it is important for accountants at all levels to have the require skills and knowledge for identifying, discovering, preserving the evidence of all forms of irregularities and fraud. Forensic accountant’s services have been used in divorces, bankruptcy, insurance claims, personal injury claims, construction, and tracking terrorism by investigating financial records. Also, forensic accountant utilizes its services in area of accounting antitrust, damages, analysis, valuation and general consulting.[61] The most important skills of a forensic accountant arise from experience in accounting, internal controls, auditing, taxation management, interpersonal relationship, business operation and communication[48-100] saw that forensic accountants must be well trained in the rules of evidence, financial data, accounting information system and software and commutation skills. Forensic accountant is a trained expert who has the commutation skills to take forensic accounting oral evidence and administer in the court of law.[101] Empirical evidence from a study showed that forensic accountants could detect significantly higher number of fraud than auditors.

Forensic accountant presents facts in simple language, communicate findings in the form of a report and supporting documents, assist in any legal proceedings, obtain documents in best interest and necessary to support litigation or refute claim, review relevant documentation to form an integral part or initial assessment of the case and identify areas of loss, assist and attend the examination for discovery, review processes, formulation of questions regarding financial evidence to be asked, review of the opposing expert's damages report, negotiate on settlement, attend trial, listen to testimony of opposing expert, and cross examining.

According Dada et al [90-102], a forensic accountant's primary duty is to analyze, interpret, summarize and present complex financial and business related issues in a manner that is both readily understandable even by the layman thereby properly supported with evidence. However, the forensic accountant activities or services is mainly relevant to various types of business, personal legal disputes, evaluation of past and projected profits, appraising and preparing business valuations whereby making useful of its expertise in litigation processes and involving losses of profits, breaches of contracts, frauds, tax investigations and professional negligence.

Against this backdrop, there are numerous opinions on the skill a forensic accountant should have[13] noted that forensic [38] accountant is a professional accountant who has tripod dimensional role in eradicating economic and financial crimes through preventive detective and punitive. However, being a professional accountant assist in knowledge of forensic accountant. A professional accountant is a person who has experience in the field of accounting, achieved through formal education and practical experience and who demonstrates and maintains competence, complies with a code of ethics. Professional accountant is held to high professional standards and subject to enforcement by a professional accountancy organization or other regulatory mechanism (International Federation of Accountant Committee [IFAC].[55] A professional accountant is a trained individual who practices accounting either in the public or private sector and is also a member of any legally recognized professional accounting body.Forensic accountant is a professional accountant who requires some sets of competencies and deductive analysis ability;special legal knowledge; analytical proficiency; investigative flexibility; creative thinking skill; unstructured problem solving competence;oral communication ability; written communication ability; and good composite skills.[27]Analyzed the qualities [51] of a forensic accountant by identifying specialized skills and abilities that is required to be possessed by an expert of their nature. It therefore found that a forensic accountant should be conversant with civil and criminal law. Hence, stressed that there is need for understanding of court room procedures and expectations, investigative skills, creative thinking, clear and precise communication skills.

2.6 Forensic Science and Litigation Services

Forensic science is the application of laws of nature to the laws of man. Forensic scientist is examiners and interpreters of evidence and facts in legal case that offers expert opinions regarding their findings in court of law.[22] Forensic science and forensic accounting method are applied by forensic accountants to investigate and inquire into economic and financial criminality enquiring or arrived resolution. Therefore, forensic accounting is the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets standards required by courts of law [25], thus, the integration of accounting, auditing and investigating skills. Forensic science includes artificial intelligence, the use of computer to navigate and stimulate some amounts of intelligence. Artificial intelligence is the building resources of interactive, independent, and often self-learning mechanism that can handle tasks that would otherwise require human intelligence to be performed successfully[41]whereby encapsulated machine learning mechanism. However, the skill and sound knowledge of technology will assist accountants in analyzing various critical problems.[33]

Against this background, a method in artificial intelligence is ways whereby through which a computer teaches itself the solution to a query discovering patterns in sets of data, and matching fresh parts of data to them on the basis of probability (Institute of Chartered Accountants of England and Wales [ICAEW].[54] This machine learning field accordingly, involves more than one branches of knowledge and therefore focused on dealing with pattern recognition issues and developing interdisciplinary prognostic models to make decision that are based on data.[59] Posit that forensic [64] accounting has become a building theme of great significance for academic, research and businesses, and a means of responding to the continued rise in accounting fraud around the World. Forensic accounting is the application of science into solving, enquiring, investigating and resolving, solving, examining, determining, and preparing litigation services as well as interpreting, preserve, analyses, reach expect opinion, testimony, justify claim, fine tune records and to bring relevance to a disputing criminally allegation among parties in dispute. Forensic accounting science provides forensic framework for accounting analysis which is suitable to the court, hence, form the nexus or basis for discussion, debate and ultimate dispute resolution. [36]

It is the application of science accounting concepts and techniques to legal problem which demands reporting, where accountability of the fraud is established, ensuring the report services evidence in court of law or in administrative proceedings.[26]

Forensic science uses Deoxyribonucleic acid (DNA) as well as finger print analysis for litigation; forensic accounting evidence plays a significant role in litigation services based on the expert witness function of a forensic accountant.[4] Forensic accountant is a secret weapon to some attorneys, best kept secret in the litigation support world. They also place consulting role, experience forensic accountant can assist in routine incorporate white collar defense work or civic litigation matters particularly where the fraud is of concern. Hence, forensic accountant must be who have significant training and experience with accounting principle, methodologies, procedures, standards and rules.[50] They can make case economically viable, giving sworn expert testimony and the objectiveness of their investigations, carry out preliminary damage estimate result in written, forensic investigation where it require DNA or finger print.

They act as an expert witness in litigation process with prudency, objectivity and probity. Their report ultimately determines the outcome of the civil litigation.[37]Asserts that expert [60] examiner is separated from other scientists by the likelihood that they will be called upon to present and explain their findings under oath in a count of law. The single feature that distinguishes forensic scientists from any other scientist is the expectation that they will appear in court and testify to their claims, evidence or findings and offer an opinion as to the significance of those claims. Sworn expert testimony and the offering of sworn expert testimony are testimony that are distinctive traits possessed by the forensic examiner.[47] Advocated that the best science is conducted in a scientific setting as oppose to a law enforcement setting. This means that scientists should function independently of law enforcement administrators, because it is often driven in their work by a need to answer a particular question related to the issue of a particular case, and sometimes face pressure to sacrifice appropriate methodology for the sake of expediency. Thus, among the findings in this watershed evaluation of the forensic sciences was the resolution that a true scientific culture cannot develop,nor even exist subordinate to law enforcement agency. However, from the publication of the National Academy of Science (NAS) reports, the resulting conflicts are fiscal, organizational, and cultural, hence, resulting wrong kind of examiner pressure. Scientific and medical assessment conducted in forensic investigations should be independent of law enforcement efforts either to prosecute criminal suspects or even to determine whether a criminal act has indeed been committed. Litigation support represents the factual presentation of economic issues relating to existing or pending litigation. Litigation often involves complex accounting tax and financial matters requiring the specialized knowledge and expertise of highly trained accounting, finance and tax professionals. Forensic accounting provides accounting analysis that is suitable to the court whereby form the basis for discussion, debate and ultimately dispute resolution [NAA].[66] By that,it provides assistance of an accounting nature in a matter involving existing or pending litigation and which could be calculating economic loss resulting from breach of contract, professional damage sustained, and legal dispute etcetera.

On that regard, forensic financial evidence servesas an expert witness for a lawsuit or criminal case in a court.The forensic accountant applied reliable principles and methods with sufficient data or facts. The expert witness is a recognized specialist relative to the principles and methods applied to the sufficient facts or data. Therefore, when investigating computer-related evidence, the forensic accountant ensures that evidence is not altered, damaged, contaminated, or destroyed by investigative process. The forensic accountant also ensures malicious software is not permitted to infect or corrupt system or records. Consequently, relevant evidences are extracted and fully preserved. This suffice to say that some types of forensic financial evidence are genetic material such as blood, hair, skin, fingerprints, witness testimonies, bullets or other potential weapons (ballistics), shoe and tire marks, illicit substances, trace chemicals, dental history, documents, files, damage records, pieces of paper, and records such as hospital records, tax forms, job history, computers and phones contacts, videos or photographs, prototype and so on.

3. Theoretical Underpinning

This study anchored on the relevance theory propounded and developed by eminent theorists such as Fraud Scale Theory by (Albrecht, Home and Romey [8]) Differential Association Theory (Edwin Sutherland [92]).

The Anomie Theory (Merton [62]; Chinoy [17]); and Stewardship Theory (Davis Schoovman and Donaldson [99]). The theories were domesticated to explain what is responsible and constitute criminality and ways by which those entrusted with people interest ought to behaveensuring the role of a forensic accountant enshrined. Fraud scale theory was developed by [8]. The theory emphasizes on the use of an element known to be personal integrity instead of rationalization. Highlighting their position on the view point of both the forensic accountant and employee, noted that personal integrity element is associated with each individual's personal code of ethical behaviour. The proponent advocates thatpersonal integrity can be observed in both an individual's decision andthe decision making process which can help in assessing integrity and determine the chances that an individual willcommit fraud. They however admitted that fraud and other unethical behoviour often take place in regard to an individual dishonesty or lack of personal integrity or other moral reasons. The theory provides for possible avenue for such fraud happening but that the services of a trained and experience investigator such as forensic accountant or auditor should be highly required.

Differential Association Theory[102]was propounded by. Southerland postulated in his book titled Principle of Criminology "what motivate people to commit crimes." In his assertion, criminal behaviour is associated to an individual social influenced by criminal environment. He noted that those who perpetrated fraud must have accumulated enough feelings and rationalization for fraud that overshadows their value for integrity. The proponent believed that people face social influence in their everyday life. Therefore, social engagement with those individuals having such criminal tendencies could influence someone else to become criminal as a result of friendship or association. However, explain [92] further that criminality is learnt not inherited, and individual trained in crime easily absorbs criminal behaviourfrom daily interactionwith people through verbal communication and practical experience. They admitted that the principle of criminal behavour is persuasive within group intimate individuals. Hence, crime begins with the learning of its techniques, absorbing its attitude and accepting its rationalization. Thereby becomes delinquent in response to the environmental influences advantageous to violation of law.Thus, could be reinforced or rendered useless or weaken by essence at the basis. Suffice to say therefore that the proponents of this theory are forerunner of the fundamental foundation of fraud triangle theory.

The Anomie Theory waspropoundedby [62]; expounded by. [17] Mertonpostulated that criminality is a functionof an overemphasis on the goals associated with accumulation of wealth and the disjuncture between the goals valued by society and the means available for individuals to achieve them [62] and[17] advocated that the society sets goals for individuals and groups and the same society prescribes the means of attaining these goals. There are persons whose means of achieving those goals set by the society are not enough thereby leading them to social standing ofunethical conducts and be corrupt.Merton [62]noted that those under the societal pressure are conditioned to enact corrupt behaviours. Thus that thepressure from social institutions such as the expectations associated with the societal goal can lead someone to engage in nonconforming or unethical behaviouramong which is corruption than conforminggood conduct.The duo asserted thatover and over again,these individuals in the society receive sign, message which symbolizes and seems what is normal and acceptable behaviour from the societal institutions, and most of them abide by these societynorms, rules of behaviour which they presumenormal; normal in the sense of which ispsychologically expectable. This Anomie theory by Merton sought to expoundthat the pressure that society exerts on its fellow among many other as the reasons an individual or groups engage or are prone to be indolent or antisocial illegal behaviour.

The stewardship theory was traced toDavis Schoovman and Donaldson.[99] Their preposition originated from psychology and sociology. The origin of the theory postulates that a steward protects and maximizes shareholders wealth through firm performance thereby also maximizing steward utility functions by doing so rather than portraying egocentric and criminally inclined. Consequently, stewards are company executives and managers whose role as top management is interacting their goals as part of the organization therebyworking for the shareholders whose aims are to protects and make profits. The theory admits that steward is satisfied and motivated when organizational goals success is attained. However, the proponents advice to accommodates the important structures that empower the steward and offers maximum autonomy built on trust. Therefore, the theory stresses on the position of employees and agrees to act more autonomously so that shareholder returns are enhanced or maximized.

4. Review of Prior Studies

Examine [1] the extent in which forensic accounting enhancing detecting of economic and financial crimes as well as improving Nigeria economy stability. The study used both secondary and primary sources of data with sample size of 116 responses out of population of 164 and employed analysis of variance (ANOVA) testing, Taro Yamane Statistical Techniques and five likert scale of descriptive statistics to test the hypothesis. The result showed forensic accounting has impact on the economic stability in Nigeria.Therefore lead to reduction of financial crime in the public sector. Another study carried out by [13] investigated how to effectively prevent and manage fraud in microfinance banks with the application of forensic accounting service. The research work adopted a survey research design and collected data from both primary and secondary sources with the use of ordinary least square (OLS) techniques to reach decision. The result revealed that the engagement of forensic accountant actively aided litigation support and reduces fraud in the selected microfinance banks in Calabar, Cross River State. Therefore, incessant failure over the years in auditing prompts a paradigm shift in accounting. Forensic accountant plays a significance role in crime and corruption prevention and management of the microfinance hence should maintain and develop more interests in forensic accounting for monitoring and investigating suspected culprits in fraud cases.

Attempted [25] to look at the relevance of forensic accounting in the effective reduction in fraudulent practice in Nigeria. The study used primary data through the administration of questionnaires with oral interview and employed multiple regression techniques for analysis. The study found that fraud reduction is significantly positive with fraud investigation and detection through forensic[33] accounting. Sought to examine the relationship that existed between forensic accounting, technology and economic and financial crimes in Nigeria. The study used both primary and secondary data and employed Pearson Product Movement Correlation Coefficient (PPMCC) for analysis. The study result showed that forensic accounting has significant and negative relationship with economic and financial crimes, while technology has a positive relationship with both forensic accounting and economic and financial crimes. [37] Investigated the objectivity of forensic accountants' expert testimony in litigation support. The paper used both primary and secondary sources of data. 100 questionnaires were instrument used among accountants, auditors and legal practitioners and therefore employed analysis of variance (ANOVA) to reach solutions. The study discovered that forensic accountants' ability to provide sworn expert testimony is integral to forensic examination. Hence, affects the objectiveness and neutrality of forensic accountants during forensic investigations and examinations.

Examines[79] the potency of forensic accounting investigation techniques in corruption investigation and prosecution in Nigeria. The paper adopted survey design in studying the sample population consisting of investigators and prosecutors drawn from the four anti-corruption agencies in Nigeria, and employed descriptive and inferential statistical methods with Taro Yamanes formula including Kolmogorov-Smirnov test for analysis. It reported that there was a significant and positive relationship between the adoption of forensic accounting investigation techniques in corruption investigation and successful prosecution of corruption cases in Nigeria. Therefore, anti-corruption agencies should always adopt forensic accounting investigation techniques in all their corruption investigations so as to be able to come up with acceptable supportive evidence in prosecution of corruption cases in the court. Consequently, [36] examined the relevance issues of forensic accounting and auditing practice in Nigeria. The study used combination of interview and questionnaire therefore employed simple percentage and t-statistical techniques to test hypothesis. The result indicated that forensic services are required for curbing fraudulent practices in Nigeria. However, there are differences between the basic role, skill and competencies of forensic accountants and that of non-forensic accountants, and recommended that the professional bodies and the National University Commission to include forensic accounting in their academic curriculum and programme. Meanwhile, the government should also develop interest in forensic accounting for monitoring and investigating suspected culprits in criminal fraudulent cases so as to ameliorate high service cost of forensic accounting, and makes laws for protection of forensic accountants, whistle blowers as well as establishing a regulatory body for forensic accounting in Nigeria.

Determine[40] the impact of forensic accounting in combating fraudulent activities in order to ensure good corporate governance practice in Nigeria banking sector. The study adopted survey method and collected data through the use of questionnaire with 55 respondents among eleven (11) commercial banks in Awka metropolis. The response consists of 5 key officials in each. The analysis involves five points likert scale with SPSS, and t-statistical techniques. The study indicated that forensic accounting ia an effective tool for addressing financial crimes in the banking system. Hence, forensic audit necessitated in ensuring corporate governance in corporate organizations, therefore, recommended among other that apex bank should engage the service of forensic accounting to compliment efforts of other professional in reducing fraudulent activities and ensure corporate governance in the financial sector. [38] assessed the relevance of the accounting profession in combating corruption in Nigeria. The study undertook a preliminary survey of the opinions of Abuja-Based Professional Accountants, and employed descriptive inferential statistic for analysis. The study therefore revealed that professional accountants are conspicuously ignored by the government in their guest for curbing corruption in Nigeria

Explored[65]the relevance of forensic accounting in curbing crime and corruption in public sector in Nigeria. The study used primary sources of data with survey research and employed regression analysis to reach its findings. The study revealed that forensic accountants are relevant in investigating crime and corruption in the public sector. Hence, play a role in litigation support service, relevant documentation and reporting in public sector. The study recommended that forensic accounting evidence and expert witness should be constantly employ by the court of law in other to positively enhance litigation services in Nigeria.[49] attempted to examine the effect of forensic accounting on discovery and mitigate fraud. The research findings used questionnaire sources to collect data. This comprises of three parts; The first part concern about data on demography characteristics of respondents, while the second part was about the skills, tools, procedures, legal knowledge require in the fields of forensic accounting and the third aspects measure the extent of discovering fraud using the services of forensic accounting. The paper also adopted likert five points scale for findings. The study revealed that forensic accountant is an effective tool to find fraud if the general requirements were available to prepare professional forensic accountants.

Examine [76] the effects of forensic accounting services on fraud and financial crime detection and prevention in Nigeria. The study adopted survey design, simple random technique with questionnaire consists of 160 Auchi Polytechnic, Edo State Ministry of Finance, Audit Firnms and Federal Inland Revenue Services and Employed Chi-Square, Microsoft Excel 2010 version to resolve its claims. The result indicated that litigation support services by forensic accounting cannot lead to appropriate judgment for economic and financial crime eradication. Therefore, forensic accounting has no relationship with good corporate governance for public confidence and crime eradication and corruption in Nigeria. Hence, cannot fill the gap created by traditional auditing in curbing the social economic scar of economic and financial crimes.[43] Examine the effect of forensic accounting evidence using primary sources of data through questionnaire and employed descriptive and Chi-Squre techniques to arrive at the causal effect of the analysis. It therefore found that forensic accounting evidence, documentary, demonstrative, physical or oral has a significance influence on litigation service in the judiciary system in Nigeria

4.1 Summary of Reviewed Literature

On this area of study some works have been carried out in Nigeria. This can be viewed from the underlying table. Below table represented a reviewed summary of some works and their results.

Table 4.1 summaries of review works

Authors	Population, Sample Size/ Period	Objectives	Methodology	Results
Abuh&Acho [1]	Population of 164, 116 responses	The Study examined the extent in which forensic accounting enhancing, detecting of economic and financial crimes as well as Improving Nigeria economy stability.	The Study employed Analysis of Variance (ANOVA), Taro Yamane Statistical Technique with five point likert Scale of Descriptive Statistics and used both Primary and Secondary Data	Both Positive
Bassey [13]	Population of 65, 55 responses	The Research Work Focused on how to Effectively Prevent and Manage Fraud in Micro Finance Banks with the Application of Forensic Accounting Service.	The Study employed Ordinary Least Square (OLS) Regression Techniques with Taro Yamane for analysis and used Pilot Survey. Both Primary and Secondary data	Estimate Coefficient Pa- rameter All Negative
Dada et al.[25]	Period 1999-2010, and Oral Interview	The Study attempted to Look at the Relevance of Forensic Accounting in the Effective Reduction in Fraudulent Practice in Nigeria.	The study employed Multiple Regression Techniques for analysis, and used both Primary and Secondary and Oral interviews	Positive Relationships
Edori [33]	Population 110, 98 responses	The Study sought to examine the relationship that existed between Forensic Accounting and Economic and Financial Crimes in Nigeria	The Study employed Pearson Product Moment Correlation Coefficient (PPMC), SPSS, Both Primary and Secondary Data were used	Forensic Accounting has Significant but a Negative, Positive with both
Ejike, [36]	20 Audit Firms, population of 204	The study sought to examine the Relevance of Forensic Accounting: Issues in Accounting and Auditing Practice in Nigeria.	The Study employed Simple Percentage, T-Statistical Techniques and used primary data combined interview and questionnaire for analysis.	(A Positive Case) Forensic accounting are enquire for curbing fraudulent practices in Nigeria
Ejoh [37]	100	The Study Sought to Investigate the Objectivity of Forensic Accountants Expert Testimony in Litigation Support.	The Study employed Analysis of Variance (ANOVA), Simple Random Techniques with use of both Primary and Secondary Data	Positive Signs
Ene&Ene [38]	Preliminary Survey	The study assessed the relevance of the Accounting Profession in Combating Corruption in Nigeria.	The Study Undertook a Preliminary Survey of the Opinions of Abuja Based Professional Accountants, employed Descriptive and Inferential Statistics for Analysis.	Negative Responses
Ezejioforet al. [40]	55 Responses	The Study sought to examine the impact of Forensic Accounting in Combating Fraudulent activities in order to ensuring good Corporate Governance Practice in Nigeria Banking Sector	The Study Adopted Survey Method to Collected Data through the use of Questionnaire and employed t-Statistics Techniques on five point likert Scale with SPSS	A Positive Sign
Gbeji&Habila [43]	Primary Data	The Study examined the Effects of Forensic Accounting Evidence on Litigation Service in the Nigeria Judicial System.	The Study employed Chi- Square and Descriptive Techniques to look out for Causal Effect among Variable of Interest.	Significant Influence (Positive Outcome)

Hamdan [49]	Pilot Sample includes 20 Accountants	The Paper attempted to examine the Effect of Forensic Accounting on Discovering and Mitigate Fraud.	The Study employed Confirmatory Factor Analysis	Positive
Mukoroet al.[65]	Primary Sources	The Study explored the Role a Forensic Accountant can Play in the Fight against Corruption by Applying Investigative Skills, Providing Litigatio n Support Services, Documentation and Reporting	The Study employed Survey Design and Regression Analysis to Reach Discuss	Positive
Oseni[76]	160	The Study examined the Effects of Forensic Accounting Services on Fraud and Prevention in Nigeria.	The Study is Survey Design with the use of Primary Data and employed Chi-Square Microsft Excel 2010.	Negative
Sorunke [79]	Primary Sources	The Study sought to examine the Potency of Forensic Accounting Investigation Techniques in Corruption Investigation and Prosecution in Nigeria.	The Study used Primary Data employed Descriptive and Inferential Statistical Methods with Taro Yamare’s Formula to determine the Simple Size	Significant Positive

Sources: Author compilation (2020).

From Nigeria perspectives, the reviewed literature suggested that most of the reviewed studies agreed with our opinion on the subject matter. Hence, a work done on the extent in which Forensic accounting enhancing, detecting of economic and financial crimes as well as improving Nigeria Economy stability, and on the potency of forensic accounting investigation techniques in corruption investigation and prosecution in Nigeria using analysis of variance (ANOVA), Taro Yamane Statistical Technique with five point likert Scale of Descriptive Statistics (Inferential) and used both Primary and Secondary Data among others showed positive signs denoting that forensic accounting has significant impact on the economic stability in Nigeria. Therefore, lead to reduction of financial crime in the public sector. In similar study revealed a significant and positive relationship between the adoption of forensic accounting investigation techniques in corruption investigation and successful prosecution of corruption cases in Nigeria. On that basis, anti- corruption agencies should always adopt forensic accounting investigative techniques in all their corruption investigations so as to be able to come up with acceptable supportive evidence in prosecution of corruption cases in the court, except armful of them with have contrary view based on the nature of the hypothesis and tools adopted in investigation and measurement. Suffice to say from the overwhelming evidences reported this research supported the positive signs.

4.1 Research Gaps Identified from Prior Studies Reviewed This study observed some research gaps from the reviewed studies done above. Prior study that evaluated the role of forensic accountants in combating economic and financial crimes in Nigeria revealed some factors which include impact on economic stability, reduction of financial crime, [1]; activity engagement of forensic investigation, litigation support reduces fraud, continued audit failure, paradigm shift in accounting, play a significant roles, develop interest in forensic accounting, monitoring and investigating, integrity and trustworthiness [13]; fraud reduction, fraud investigation and detection, forensic accounting techniques, absence of anti-corruption engagement of forensic accountant, establishment of commission for experts, assist count with cases fraud, effective prosecution of accused, fraudulent practice [25]; Produce expert testimony, integral to forensic examinations, forensic investigation and examinations, acquire investigative skills, professional skills of financial analysis, uphold quality of honesty and objectivity, emotional affiliation and interest, outcome of litigation process, expert testimonies [37];

Poor corruption detection and prevention mechanism, fight against corruption, recovery of looted funds, prosecution of high profile corrupt cases, apparent disregard to the fundamental roles, accounting profession, relevance of the accounting profession, roles of professional accountants [38] pivotal; effective tool for addressing financial crimes, ensuring corporate governance, engage services of forensic accounting, compliment efforts of other professionals, reducing fraudulent activities in financial sector [40]; discovering and mitigate fraud, effective tool to find fraud [49]; relevant in investigating crime, play a role in litigation support services, documentation of reporting, curbing crime and corrupt practices, provide mechanism to hold culprit accountable, manage resources in a fiduciary capacity, provide litigation support [65] services; legally acceptable evidence, techniques in corruption investigation, evidence supportive prosecution [79]; prevent frauds and financial crimes, necessary tools to detect and prevent fraud, embrace integrity, enhances objectivity, fairness and accountability.[76]

On that basis, the abovestudies seemproviding mixed reaction in their findings. Some prior studies on the role of forensic accountants combating economic and financial crimesin Nigeria examine the relationship that existed between forensic accounting and economic and financial crimes technology, moderate existing relationship, mandatory forensic accounting, train and retraining, technology development, existing law and requirements on present day, fight economic and financial crime, skill and competence, environmental factors, weak judicial system, weak judicial system, weak educational system, lack of continuity problem encountered, visibility of information, high rate of computer crimes, admissible in law courts, inter-jurisdiction, develop interest in forensic accounting, monitoring and investigating culprits, criminal and fraud cases, ameliorate high service cost, law for protection, whistle blowing, investigatory bodies.[33-36]This study exhaustively discusses issues raised on tropical issuesto resonatemattersof interest jammierto the topic. The paper thoroughly examinefundamentals of the role of forensic accountant in investigative and detective knowledge and skills to uncovering evidence as expert witness testimony in order to stimulate litigation resolution and recoveringbefore the lawsuit. Adding, the articleconcerted effortsto evaluateimpulsetechniques require by anexperts to galvanize and unravel economic and financial crimes. It therefore provided framework and support to the opinion expressedby some of the extant studies. Hence, subscribesto the adoption of forensic expert opinion for fighting economic and financial crimesboth in the private and publicsector. The study however admits thatin monitoring and investigating crime, a competence skillshould be exhibited insupporting witness testimony incourtcasesensuring that forensic science techniques is useful, encourage and promoted. Conspicuously, training, retrainingas well as ensuring maintenance of continuous engagement of forensic accountantas a matter of urgency with topmost priority and in business decision of government, government agencies and corporations.

5. Summary and Recommendations

The increasing pace of economic and financial crime has raising global concern for tending need to curb and reduce the scourge. The role of forensic accountant adopting forensic accounting science has been overwhelmingly welcome in recent past in litigation services and incidences of unraveled investigations and won evidences. Forensic accountant's vital role in the recent time has been recognized on key investigative trails of records of criminals, recoveries and various incidences of occurring cases of fraudulent activities unraveled including tracing of huge fraudulence transactions to a logical ends. The significance of forensic accountant ordinarily entrenches beyond normal traditional accounting and auditing regime within the scope of accounting functions in private and public sectors conferred and engagements. Thereby supporting the need for routine presence and engagement of forensic accountant in organization and among anti-corruption agencies, which also remarkable featswould brought low or abolished administrative and associated costs of detecting economic and financial crimes and losses to crimes. However, propose that in order to completely ameliorate incidences of economic and financial crimes, private and public sectors should engage, employ and stationed a forensic accountant to review, reappraises records and strengthen internal control so as to aviod incidences of crime perception on a routine basis in their business as well as various agencies saddle with the responsibilities of fighting economic and financial crimes adopt regular engagement of forensic accountant among other for all inclusive works of planning, detective, investigative, recovering and so on.

5.1 Contribution to Knowledge

This study lends credence to earlier works done in related area of study thereby contributing significantly to literature and knowledge by taking a position on the role of forensic accountant in combating economic and financial crime in Nigeria: The study

- Most profound contribution is in this area of smoothing the effects of the role of forensic accountant in curbing economic and financial crime. The study domesticated qualitative survey approach to expand literature with influence on Nigeria geographical economic background, and largely made the result significant input to dialogue on the Nigeria domestic economic climate;
- Expanded periods of works done by most researchers in terms of currency and frequency of literature and coverage period of other studies from reviewed works to current year 2020; and
- Also gleaned relevant models documented by various studies to appraise and crystalize the study based on analytical survey convictions.

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IMPACT OF FORENSIC ACCOUNTING ON FRAUD DETECTION AND PREVENTION IN THE NIGERIAN DEPOSIT MONEY BANKS

Abstract

In Nigeria's banking industry especially, forensic accounting is becoming more and more acknowledged as an essential instrument in the fight against financial crime. This paper examines, with an emphasis on Ebonyi State, how forensic accounting affects fraud prevention in Nigerian banks. Employees of banks were surveyed quantitatively using pre-designed questions. The data was analysed and the connection between fraud prevention and forensic accounting methods – forensic investigation, expert consulting, and legal support – was assessed using regression analyses. The results show that, in the chosen institutions, fraud prevention and forensic investigation, as well as forensic litigation, have a strong negative correlation. Expert consultation did not, however, reveal a statistically meaningful relationship with fraud prevention. These findings show how critical forensic accounting is to reducing financial crime in Nigerian institutions and emphasise the necessity of raising stakeholder knowledge and providing training in forensic accounting procedures. Among the recommendations are more support for the use of forensic accounting services, better chances for forensic accounting specialists to get training, and attempts to lower the price of forensic consulting services to fund banking sector anti-fraud measures

Keywords*:* Forensic Accounting, Financial Fraud, Forensic Investigation, Anti-Fraud Initiatives, and Advocacy.

Introduction

A key component of the nation's financial system is the CBN-regulated banking industry. Fraud, corruption, and inefficiency are problems the industry confronts even with improvements. In order to find financial irregularities and provide proof for judicial procedures, forensic accounting uses auditing, auditing, and investigation abilities. Methods such as data mining, trend analysis, and financial ratio analysis contribute to the detection of complex schemes and anomalies (Ukangwa et al., 2023). After assessing the effectiveness of internal controls, forensic accountants provide recommendations for enhancements to lower the risk of fraud. They ensure that banks comply with legal obligations and preserve the financial system's integrity. Forensic accounting, by restoring public confidence and promoting corporate governance, also informs management and staff about fraud risks and detection methods (Ukpabi et al., 2021; Eze s Osuji, 2023; Ukangwa et al., 2023). Fraud in Nigerian banks is increasing as a result of insider cooperation, poor regulatory systems, and socioeconomic factors. According to the Nigeria Inter-Bank Settlement System, fraud complaints rose from 25,043 in 2016 to 46,126 in 2020. Fraud using ATMs and mobile banking is prevalent. Stronger internal controls, harsher penalties for non-compliance, better customer education about fraud schemes, and cooperation with banks, regulatory agencies, law enforcement, and technology providers are all part of effective preventive measures. High expenses, complicated integration, and qualified staff are challenges (Chiluwa et al., 2023; Akande et al., 2024).

Many stakeholders and investors in Nigeria's banking industry, in particular, have become more aware of the recent instances of fraud in the country and the business world. Thus, a significant portion of Nigerian banks struggle with credibility. According to them, some non-banking entities have manipulated the pricing at which their shares were traded on the Nigerian stock exchange. Also, the Nigerian deposit insurance company (NDIC) in 2010 claimed that frauds and forgeries engaged in Banking industry amounted to 21 billion naira. Financial crime, mismanagement, and money theft in Nigerian government institutions and banking sectors have all been steadily rising. Fighting corruption is the primary focus of the Buhari-led government. There have been a lot of arrests, but the number of prosecutions cannot be interpreted in the same way (Owolabi, 2010; Olatunji et al., 2014). Thus, the aim of this research is to utilize forensic accounting services to effectively detect, prevent, and manage fraud in banks. In light of the aforementioned, this research aims to address the issues of fraud and forensic accounting.

Literature Review

Investigative and analytical abilities are used in forensic accounting, a specialist field, to address financial concerns in a way that satisfies court requirements. It includes three main areas: assistance for litigation, conflict settlement, and inquiry. To gather, examine, and assess evidence, as well as to interpret and present their conclusions, forensic accountants use specialised knowledge in accounting, auditing, finance, mathematical methodologies, certain legal fields, research, and investigative techniques. Many people see forensic accounting as a speciality area of accounting and auditing where material appropriate for use in court is analysed using investigative techniques. It is often accepted that business entities, such as banks, can provide more thorough information on financial theft using this approach. This entails using and utilising accounting expertise to ascertain financial data and supporting documentation for legal issues. By offering trustworthy, legitimate, and significant forensic accounting evidence for fraud prosecution and litigation support, the Nigerian legal system adopts forensic accounting approaches in fraud management. Even with the engagement of forensic accountants in fraud management, it is anticipated that the application of forensic accounting services and evidence to judicial procedures would enhance litigation services to assure the efficacy of the system (Adesina et al., 2020). The several auditing disciplines that make up forensic accounting are categorised according to legal processes. Financial theft, securities fraud, bankruptcy, debt default, economic damages, tax evasion, corporate valuation disputes, accusations of professional negligence, money laundering, private information, and divorce procedures are a few frequent instances. Reduction of losses, increased productivity, and lower risk of exploitation, avoidance of legal issues, and enhanced authority and prestige of the brand are some benefits of forensic accounting. It is noteworthy, although, that these benefits are not all inclusive and might change based on the particular situation (Aruomoaghe s Ikyume, 2013; Okeye s Ebengi, 2013; Akhidime s Uagbale- Ekatah, 2014).

Forensic Accounting Techniques

Data mining is a part of forensic accounting methods that helps find patterns, correlations, and anomalies in huge data sets to forecast results. Looking for unexpected or hidden information in huge amounts of data, relative size factor is used. Faster data analysis is achieved with Computer Assisted Audit Techniques (CAATs). Benford's Law is applied in the detection of odd objects. More databases mean more data to be extracted, and data mining methods control complexity. Furthermore applied are data mining methods and descriptive statistics. Financial data abnormalities are found via forensic accounting methods like computer assisted audit techniques (CAATs) and the relative size factor. Whereas CAATs are computer programmes and data used by auditors to handle audit-significant data from client computer information systems, the relative size factor is used to investigate how an independent variable influences a dependent variable. Though working with CAATs may be difficult and technical, particularly when choosing the correct data, these tools are employed in a variety of commercial settings and industrial industries. Because it tells which numbers show up more often in data sets, Benford's law is a useful tool for fraud detection. First and second digit variations from the probability distribution law may help auditors find fraudulent transactions. Forensic accountants need to be proficient in deductive analysis, creative thinking, unstructured problem-solving, investigative flexibility, and analytical abilities. Three layers of skills—base, medium, and top layer - were established (Center of Forensic Accounting Studies, 2010; Chui s Pike, 2013).

Concept of Fluid

Deliberate lying with the goal of obtaining some advantage or depriving someone dishonestly of what they are entitled to be two examples of the many definitions of fraud. Everything designed to mislead is usually seen as it. Fraud in the financial business is a worldwide phenomenon that is not exclusive to any economy, country, environment, or continent. A crisis of trust in the sector resulted from bank failures in Nigeria that go back to the 1630s. Depositors suffered large financial losses as a result, and the banking public lost faith in Nigerians' capacity to run a bank. In 1648, the Paton Commission of Inquiry was established by the government, and in 1658 the Central Bank of

Nigeria (CBN) was founded. Banks proliferated and there was a boom until the late 1660s thanks to the 1686 Structural Adjustment Programme (SAP). A further reform marked by several bank mergers and acquisitions was put in place in 2005 to prevent an impending collapse. But the fraud danger is still there. An estimated real loss of 11.66 billion naira was anticipated in 1,532 fraud instances recorded involving 21.26 billion naira, according to the Nigerian Deposit Insurance Corporation (NDIC) annual report (Noorhayati s Muhammad, 2015) 2,352 fraud instances totaling
28.4 billion naira were recorded in 2011; a real loss of 4.071 billion naira was anticipated (Onodi et al., 2015).

The number of fraud cases recorded in 2014 increased by 17.5% to 10,612. The actual loss for 2014 was predicted to be 6.16 billion naira, up around 7.5%. Following an investigation by the Central Bank of Nigeria into fraud in five commercial banks in 2006, Oceanic Bank's CEO was charged and given an 18-month jail term. Though the term "fraud" is somewhat broad, anything meant to mislead is usually seen as such. Nigerian bank fraud is on the rise, and it is seriously affecting the financial industry. Research has shown that staff participation, dividends, and credit mobilisation are just a few of the variables that might affect fraud. Concerning bank staff fraud is also the discovery by Dada et al. (2013) that bank executives were engaged in more than 70% of bank frauds. But a 2013 research by Idolor found that bank employees do not consider foreign currency fraud or unofficial borrowing to be types of bank fraud. Businesses must understand who the fraudsters are, when they conduct their crimes, and why they do them in order to stop fraud. A fraud is an intentional act or course of deceit committed to get an unfair or illegal benefit at the expense of another person. Three things make up the fraud triangle: opportunity, pressure, and justification. Three categories may be distinguished in pressure factors: pressures associated to the work, undesirable behaviours, and financial content. Top management and company owners are opportunity factors, which provide the chance for fraud. The third element consists on con artists creating defences to explain their behaviour. Two primary methods of fraud detection are proactive investigation and chance discovery. The public's confidence in the audit profession has been eventually restored by accounting standard setters raising the requirements for auditors to identify fraud. Determining fraud cases is challenging, however, since contemporary companies sometimes have intricate networks of deceit and conspiracy that conceal the true reason. Therefore, preventing fraud from happening is mostly dependent on its identification.

Theoretical Framework

To explain the reasons of fraud, two well acknowledged fraud theories have been developed: the Fraud Triangle Theory (FTT) and the Fraud Diamond Theory (FDT). Three primary factors are the emphasis of the FTT, which was put forward by American criminologist Donald Cressey in 1650: opportunity, pressure, and rationalization. When Crassey spoke with 250 convicts in 1650 who had taken a position of trust in good faith but then broken it, his idea was first put forward. Three things, he discovered, are necessary for someone to break trust: a non-shareable financial issue, the chance to do so, and the trustbreaker's justification. Trust violators see themselves as having a non-shareable financial issue and are aware that they may covertly remedy this issue by betraying the financial trust. They also verbalise their actions in such circumstances, which helps them to modify their ideas of themselves as reliable people. Cressey identifies three elements: the potential to conduct the trust breach, the non-shareable financial situation, and the trust violator's justification. People who believe they have accrued non-socially acceptable financial responsibilities that need to be paid for in secret or privately are said to have non-shareable financial troubles. The fraudster perceives an opportunity to leverage their position of trust to fix the financial issue, knowing they are unlikely to be discovered (Dhami, 2015). Because most con artists are first-time offenders with no criminal history, rationalisation by the trust abuser is a typical component of fraud. They justify or excuse their acts to themselves by seeing themselves as regular, honest individuals stuck in a difficult circumstance (Effiok, 2014; Dhami, 2015; Efosa s Kingsley, 2016; Okafor s Agbiogwo, 2016).

With time, the FTT has earned the moniker "fraud hypothesis." The two factors at the bottom, perceived opportunity and rationalisation, stand in for the pressure or motivation to carry out the fraudulent conduct. Perceived pressures—typically financial—perceived opportunity, and rationalisation combine to enable employees to commit fraud. Expanded on the Fraud Theory of Transactions (FTT), the Fraud Diamond Theory (FDT) holds that fraud happens when a possible perpetrator has the knowledge and aptitude to carry it out. Although the theory contends that perceived pressure or incentive to commit fraud may coexist with pressure, opportunity, and rationalisation, fraud is unlikely to happen until the fourth element—capacity—is present. The FDT is not the same as Cressey's FTT; it stresses the need of knowing the unique characteristics and skills of each employee in order to determine the likelihood of fraudulent activity in the public sector. According to the notion, opportunity and pressure may promote rationalisation while pressure can drive someone to seek opportunity. But until the fraudster has the potential to commit fraud, none of these elements—alone or in concert—necessarily led a person to engage in actions that might result in fraud. Being able to identify and take use of the accounting and internal control systems of the company is the extra capacity that sets the FDT apart from Cressey's FTT (Elizer s Emmanuel, 2015). It also recommends four observational characteristics for fraud: a strong position inside the company, the capacity to comprehend and take advantage of internal control and accounting systems, assurance in avoiding detection or doing so with ease, and the capacity to manage the stress that comes with doing wrong deeds.

Organisations and auditors need to be more aware of the unique qualities and skills of their staff members in order to evaluate the danger of fraudulent activities. Better checks and balances mechanisms may reduce the dangers and costs brought on by fraudulent activity at work. To stop cases of fraud in the Nigerian banking industry, for example, a forensic accountant or other qualified investigator is needed. An idea called the fraud root theory (FRT) explains why people perpetrate fraud, especially in countries of black Africa. While in impoverished countries fraud may be motivated by the need to become a high net worth person, in developed countries it may be driven by the need to demonstrate their knowledge and capacity to break into any system. Four categories may be made out of environmental factors: power, culture, customs and tradition, permeable legal systems, and poverty. As it suggests that Deposit Money Banks (DMBs) accounting and internal control systems might be manipulated to support fraudulent activity, the fraud diamond hypothesis was used in this research. The idea indicates that there is a fraudster, and forensic auditors are required to lessen the effects of fraud. Building an effective internal control system to stop and lessen fraud is made easier with the aid of this. The 1636 introduction of the white-collar crime hypothesis by sociologist Edwin Sutherland describes crimes carried out by businesses or professions. It notes three distinctions between street or violent criminals and white-collar criminals: they are often professionals, face fewer legal charges, and are mostly unnoticed by the public. Misappropriation of funds, tax-related frauds, investment/securities fraud, degradation of environmental laws, public sector fraud, insider privileged information abuses, copy theft, and insurance-related frauds are examples of white-collar crimes. White- collar crime proprietors are hard to find for prosecution because they employ advanced equipment to hide their fraudulent actions (Enofe et al., 2013; Enofe et al., 2015; Enofe et al., 2015b). All the complex theories of motivation, nevertheless, fall short of explaining the reasons for white-collar crimes. The hypothesis is still a good instrument for fraud detection and prevention notwithstanding criticism surrounding it. Especially in Nigeria, whistleblowers have been shown to be useful in disclosing internal dubious dealings. Thus, the primary theoretical foundation of this research is the white-collar crime theory as it is applicable and appropriate to the whistleblower policy that the Nigerian government has put in place to fight fraud and associated financial crimes (Enofe et al., 2015b; Nigerian Deposit Insurance Corporation (NDIC, 2015).

Empirical Review

Researchers have been interested in forensic auditing as studies have shown that corporate fraud in the Nigerian economy is rising. This is because managers incorporate companies that offer items at exorbitant costs, raising the cost of manufacturing, and pursue independence at the expense of their employers. Investigative tasks and litigation support services are offered by forensic accounting to comprehend the scope and complexity of financial frauds occurring in any economy. Aduwo (2016) contends that corporate financial scandals may be greatly revealed by forensic auditing. Eyisi and Ezuwore (2014) dive into the functions of forensic auditors in preventing fraudulent activity, the differences between forensic and statutory auditors, traits of forensic auditors, and the influence of forensic auditors on corporate governance. The study draws the conclusion that forensic auditors have enhanced management responsibility, increased the independence of external auditors, and helped audit committee members fulfil their oversight role by giving internal audit reports confidence. In 2006, Kosmas and colleagues looked at how well forensic auditing worked in Harare, Zimbabwe, to find and stop bank frauds. At order to get information from respondents at thirteen commercial banks, four building societies, and four audit companies, the research used questionnaires, personal interviews, and documentary review. According to the report, forensic auditing departments lacked both technical expertise and material resources, and there was no unambiguous recognition for the field. Stakeholders agree significantly, according to Ezejiofor et al. (2015), on the value of forensic accounting in internal control quality, financial reporting, and fraud prevention. According to Eyisi and Ezuwore (2014) business companies in Nigeria are not successful in identifying fraudulent activities when they use forensic accounting services. Thus, the degree of bank fraud is influenced by the use of forensic accounting services (Modugu s Anyaduba, 2013; Puspasari, 2015).

Gbegi and Adebisi (2014) showed that a rise in frauds and bank failures was caused by a misplaced value fragment and the current difficult economic conditions. The report advised applying zero tolerance to corruption, getting good references, and properly vetting employees before hiring. Gbegi and Adebisi (2014) looked at whether Nigerian fraud prevention and detection essentially requires the knowledge, abilities, and competence of forensic accountants. The results of the research emphasised the value and significance of forensic accounting services in the areas of fraud detection and prevention in both public and private sectors. Ghosh and Banerjee (2011) examined the opinions of experts on how forensic accounting investigative methods may help Nigerian corruption be reduced. Twenty-four participants in in-depth interviews from Nigerian anticorruption agencies agreed that forensic accounting investigation was more suited for use in court and more appropriate for fraud investigations. Finding that forensic accounting investigations are the greatest tool for identifying and preventing fraud in an organisation, Hooper and Pornelli (2010) compiled empirical data on their effects. Thus, corporate governance is improved and corporate fraud is addressed in large part by forensic auditing. The degree to which forensic auditors in Nigeria are successful in addressing fraud problems and reducing corruption requires furtherinvestigation.

Hypotheses Testing

The following theories may be established in light of the thorough literature research, empirical data, and analysis that have been provided:

HO_1 the prevention of fraud in Nigerian banks is greatly influenced by forensic fraud investigation. The empirical results, which demonstrate a substantial inverse link between forensic fraud investigation and fraud prevention in the chosen banks in Ebonyi State, provide credence to this idea.

HO_2 the prevention of fraud in Nigerian banks is significantly impacted by forensic fraud litigation. Based on the empirical research, forensic fraud litigation did not significantly correlate with fraud prevention at the selected banks in Ebonyi State, contrary to the first assumption.

HO_3 in Nigerian banks, expert consulting plays a major role in preventing fraud. Expert consultation is critical in fighting fraud, as the data reveals a high negative correlation between fraud prevention and expert consulting in the chosen banks in Ebonyi State.

Methodology

This section covers the procedures and technique of a primary quantitative research project. Descriptive and causal designs are combined in the research design, with causal analysis used to verify theories and address study problems. Through structured questionnaires, primary data was gathered in order to look at how forensic accounting affects fraud prevention in Nigeria for a few chosen banks in Ebonyi State. The whole population of the study is the number of bank employees in Ebonyi State who took part in it. In 2021, Ebonyi State employed 85 primary staff members. A section of the population was employed as the sample size in a mathematical method of determining it. We utilised the sample size calculation with a 5% acceptable error that Taro Yamane (1664) supplied (Schuh et al., 2013; Harper et al., 2014).

Seventy-six questionnaires, or around 86% of all those sent out, were returned, according the computation. Simple random sampling was the method used to choose the sample size; every responder was treated with care to get the necessary answers. The sample frame used for

selection encompassed all of the major employees of the chosen banks in an effort to provide each employee in the target demographic an equal opportunity of being chosen. Finally, the present study collects and analyses data on the influence of forensic accounting on fraud prevention in Nigeria using a quantitative methodology. Reliability of the research is guaranteed by using a straightforward random sample method and treating responders carefully. By use of an ordinary least square regression framework, the research seeks to investigate the function of forensic accounting in fraud prevention and detection in the Nigerian banking sector. A survey used to gauge fraud prevention is the research tool; it is reliant on the independent variable, forensic accounting
(X). The dependent variable of the model parameters is fraud prevention; the independent variables are expert consulting and litigation support (Harper et al., 2014).

The following a priori expectations apply to fraud investigation, professional consulting, and litigation support: Investigation of fraud is supposed to be inversely linked to fraud. Fraud will go down if fraud investigation is conducted more. Call this the a priori anticipation. Fraud is supposed to be inversely connected to expert consultation. Fraud will go down when there is more professional consulting. It is predicted that fraud and litigation support are negatively correlated. Decreased fraud will result from more litigation support. Using appropriate computer-assisted software for business research, SPSS, data analysis was done. The research used a technique that included the link between the study variables, model formulation, sample selection and data collecting. Thus, dependability and validity are given top priority in the methodical gathering, analysis, and presentation of the data. Through a pilot assessment, the instrument's dependability was confirmed with a Cronbach alpha of 0.741. Furthermore investigated were operational measures of variables, both dependent and independent of the hypotheses. The findings of this study provide important light on how forensic accounting functions in the Nigerian banking sector to prevent and identify fraud (Zengin et al., 2011; Harper et al., 2014).

Analysis and Interpretation

This section uses regression analysis as the analytical technique for the research study, and it gives the empirical analysis findings and interpretations.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.861[a]	.826	026	.64888	2.062

a. Predictors: (Constant), Expert Consultancy, Forensic Fraud Litigation, Forensic Fraud Investigation
b. Dependent Variable: Fraud Prevention

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.630	3	.210	30.466	.005[b]
	Residual	23.576	56	.421		
	Total	24.208	56			

a. Dependent Variable: Fraud Prevention

b. Predictors: (Constant), Expert Consultancy, Forensic Fraud Litigation, Forensic Fraud Investigation

		Unstandardized Coefficients		Standardized Coefficients			65.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.168	.674		3.261	.002	.848	3.548
	Forensic Fraud Investigation	-.147	.150	.132	2.726	.006	-.152	.447
	Forensic Fraud Litigation	-.070	.120	.078	2.705	.003	-.171	.311
	Expert Consultancy	-.026	.135	.026	2.166	.005	-.244	.267

a. Dependent Variable: Fraud Prevention

The research shows a very strong, favourable, and noteworthy link between expert consultancy, forensic fraud litigation, and investigation. With the corrected R2 value, these three variables account for 83% of the variance in fraud prevention. The p-value (0.008) and F value (30.466) are, nevertheless, indications of a weak link. An excellent match is shown by the DW, which exhibits no autocorrelation. With their p-values smaller than alpha (0.05) and t-values higher than t-critical (1.408), forensic fraud investigation, forensic fraud litigation, and expert consultancy are shown in the coefficients table to be significant predictors of fraud prevention. As such, the theories are disproved. Based on the R-square statistics, these three variables account for 82.6% of the variance in anticipated fraud prevention, whereas unobserved variables account for 18.4%. Considering that the p-value of the model (F test) is less than 0.05, its overall significance is regarded as quite strong. At the 1% level of significance, the model is determined to be valid and significant.

Evaluation of Hypotheses

The link among forensic investigation, forensic litigation, and expert consulting in Nigerian banks is evaluated in this paper. The findings indicate that, although forensic litigation does not, forensic investigation significantly relates to fraud prevention. Still, in several Ebonyi State institutions, professional consulting is closely linked to fraud prevention. Should the p-value be less than the 5% threshold of significance, the hypothesis is rejected; otherwise, it is accepted. As the p-value is higher than the 0.05 significance threshold, professional consulting is significantly associated with fraud prevention in the chosen banks. According to the report, there is no appreciable correlation between forensic litigation and investigation and fraud prevention in Nigerian banks.

Discussion of Findings

The main aim of this research is to find out how forensic accounting affects fraud prevention in Nigerian banks, specifically in banks located in Ebonyi State, Nigeria (Inaya s Isito, 2016). A link between forensic accounting as shown in the research by three factors (forensic investigation, expert consulting and legal assistance) and fraud prevention is one important conclusion that follows the findings of the data analysis. More significantly, the research results also disclosed the goals of finding out whether forensic fraud litigation affects fraud prevention in the chosen banks in Ebonyi state. The research results also addressed other particular goals mentioned. This surely relates to the main study issue of whether fraud prevention is impacted by forensic fraud investigation. The answers are clear because the tested hypotheses are confirmed. More significantly, the research results also validated the goals of uncovering connections between the employment of expert consultants and litigation in fraud prevention (Kanu s Okorafor, 2013).

Conclusions

This research shows that fraud prevention in Nigerian banks is significantly inversely related to forensic investigation. The negative link between fraud prevention and forensic litigation in a few chosen banks in Ebonyi state is also very strong. The negative association between fraud prevention and expert consulting in a few chosen Ebonyi State banks is also very strong. These results support earlier research that has shown the usefulness of forensic accounting in Nigeria for fraud management and detection. Forensic accounting services have been effectively used in anti- corruption initiatives by developed countries such Malaysia, the UK, and the United States. But forensic accounting's use to combat fraud in Nigeria is still quite new and has to be adopted quickly. Professionally competent forensic accountants are few in underdeveloped nations like Nigeria because of the comparatively slow growth and trajectory of the field. Regression analysis shows that, in Nigerian banks, fraud prevention and forensic investigation have a strong negative connection. The negative link between fraud prevention and forensic litigation in a few chosen banks in Ebonyi state is also very strong. Finally, the research implies that the profession of forensic accounting significantly contributes to the decrease of financial fraud in the banking sector.

Recommendations

The following policy alternatives are consequently suggested based on the study's results: The study's findings imply that having forensic accountants in deposit money banks has a big impact on fraud detection. Therefore, more awareness campaigns by professional bodies will help bank stakeholders to regularly use forensic accounting services in order to successfully combat fraud.

Since the survey indicates that there are not enough certified accountants with this forensic expertise, more professional accountants should be taught and retrained on the significance of forensic litigation support involvement in bank fraud cases in Nigeria. They have to know that one day the law court may call them in to defend any view expressed in their reports.

As using forensic expert consulting services does not improve the reduction of fraud, there is an urgent need to reduce the cost of this service. Providers of this service should be urged to reduce their consulting fees in order to show solidarity and support for the fight against fraud and corruption in the banking industry. To sufficiently manage admission into the field, professional entities offering training and certification in forensic accounting must reorganise and standardise the control of entry process.

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FORENSIC ACCOUNTING A TOOL FOR FRAUD DETECTION AND PREVENTION IN THE PUBLIC TERTIARY INSTITUTIONS INSOUTH EAST NIGERIA

Abstract:
The study aimed at forensic accounting a tool for fraud detection and prevention in the public tertiary institutions in South East Nigeria. The main purpose of the study was to determine how the use of Forensic Accounting will help to reduce Fraud cases in the tertiary institutions in South East Nigeria. Two hypotheses were formulated in line with the objectives of the study. A descriptive survey design was adopted for this study. The population comprised of 470 account staff in 7 public tertiary institutions in South East Nigeria along with interviews conducted with those ministries out of which 350 were filled and returned. The statistical tool used to test hypotheses was Analysis of Variance (ANOVA). Among the findings was that the use of Forensic Accounting do significantly reduces the occurrence of fraud cases in the tertiary institutions in South East Nigeria, and that there is significance difference between Professional Forensic Accountants and Traditional External Auditors and therefore the use of Forensic Accountants can help better in detecting and preventing fraud cases in the tertiary institutions sector. The research therefore recommended that Forensic Accountants be replaced with the external auditors in South East Nigeria the tertiary institutions sector, proper training and retraining on Forensic accounting should be provided to staff of South East Nigeria the tertiary institutions sector and proper adherence to accounting and auditing standards should be followed.

Keywords: forensic accounting, fraud detection and prevention, public tertiary institutions

Introduction

It has been observed that Government spending has always been big business, but it has become so massive today that the public through its legislators is demanding to know whether the huge outlays of money are being spent wisely or whether they should be spent at all. Officials and employees who manage tertiary institutions activities are by virtue of that duty, required to render adequate accounts of their activities to the end users. The incidence of fraud continues to increase across private and public sector organizations and across nations. Fraud is a universal problem as no nations is immured, although developing countries and their various states suffer the most pain. Forensic accounting is a rapidly growing field of accounting that describes the engagement that results from actual or anticipated dispute or litigations. Forensic means suitable for use in a court of law, and it is to that standard Forensic Accountants generally work.

Forensic accounting is defined as the application of financial accounting and investigative skills to a standard acceptable by the courts to address issues in disputes in the context of civil and criminal litigation (Manning in Okoye, Adeniyi & Udegbunam, 2019). Professional Forensic Accountant can be seen as those who are specialist in fraud detection, and particularly in documenting exactly the kind of evidence required for successful criminal prosecution; able to work in complex regulatory and litigation environments; and with reasonable accuracy, can reconstruct missing, destroyed, or deceptive accounting records. Professional Forensic Accountant may work for government or public accounting firm. Although, forensic accounting has been in existence for several decades, it has evolved over time to include several types of financial information scrutiny.

Employee and management fraud, theft embezzlement, and other financial crimes are increasing, therefore accounting and auditing personnel must have training and skills to recognize those crimes, both at the state level and the grassroots (local) level to better ensure the states prospect in the area of fraud prevention, deterrence, detection, investigation and remediation. Forensic accounting includes the use of accounting auditing, and investigative skills to assist in legal matters. It consists of two major components. Litigations services that recognized the role of an accountant as an expert consultant, and investigative service that uses a forensic accountant's skills and may require possible court room testimony. According to the definition developed by the Association of Institute of Certified Public Accountants (AICPA's) in Okoye, Adeniyi and Udegbunam (2019), forensic and litigation services committee, forensic accounting may involve the application of special skills in accounting, auditing, finance, quantitative methods, the law and research. It also involves quantitative skill to collect, analyze, and evaluate financial evidence, as well as the ability to interpret and communicate findings. Okoye and Gbegi (2013) observed that the use of Forensic Accounting do significantly reduces the occurrence of fraud cases in the public sector, and that there is significance difference between Professional Forensic Accountants and Traditional External Auditors

and therefore the use of Forensic Accountants can help better in detecting and preventing fraud cases in the public sector organizations.

The Association of Certified Fraud Examiners in Oyebisi, Okere, Olusogo and Ifeoluwa (2018) defined fraud as any illegal acts characterized by deceit, concealment or violation of trust. These acts are not dependent on the application of threat of violence or of physical force. Fraud includes all the multifarious means that human ingenuity can devise are resorted to, be individual to get an advantage over another by false suggestions or suppression of the truth. It includes surprises, tricks, cunning or dissembling, and any unfair way by which another is cheated (Black's Law Dictionary in Okoye & Gbegi, 2013). Forensic accounting is said to bring significant improvement in the quality of fraud detection and prevention. This study meant to help and remind the tertiary institutions in South East Nigeria to design an integrated approach to preventing and controlling fraud and corruption within the workplace through an establish service of Professional Forensic Accountants.

1. Statement of the Problem

In recent times, series of fraud have been committed both in the public and private tertiary institutions of learning. These in no doubt are perpetrated under the supervision of the internal auditors of the tertiary institutions of learning. It suffices to say that the independent of the internal auditor is not guaranteed because they work as an employee of the tertiary institutions of learning and government. Then come the idea of external auditors, yet frauds are still being committed on a daily basis. The above scenario indicated that as more and more development both in the information Communication Technology (ICT) world and other fields, so fraudsters continue to groom their own tactics towards fraudulent practices. It now become pertinent that forensic accounting be introduced and practices since the external auditors do not or may not have the required training to be able to tackle modern frauds like white collar crimes such as security fraud, embezzlement, bankruptcies, contract disputes and possibly criminal financial transaction; including money laundering by organized criminals, also is the ability of the forensic accountant to provide litigation support and investigative accounting. These areas have become a complex area of concern for the accounting profession.

1.1 Purpose of the Study

The main purpose of this study was determined how the use of Forensic Accounting will help to reduce Fraud cases in the tertiary institutions in South East Nigeria. Specifically, the study sought to determine the:

1) possibility of reducing the occurrence of fraud cases using Forensic Accounting.
2) significance difference between Forensic Accountants and External Auditors.

1.2 Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1) The use of Forensic Accounting does not significantly reduce the occurrence of Fraud cases in the tertiary institutions in South East Nigeria.
2) There is no significant difference between Professional Forensic Accountants and Traditional External Auditors on reduction of the occurrence of Fraud cases in the tertiary institutions in South East Nigeria.

1.3 Theoretical Framework

The basic theory that has been established in this research work is "white collar crime theory" by Sutherland (1949) as cited in Michael (2004). The term white-collar crime dates back to 1939. Sutherland (1949) as cited in Michael (2004) was the first to coin the term, and hypothesis white-collar criminals, attributed different characteristics and motives than typical street criminals. Sutherland originally presented the theory in an address to the American Sociological Society in attempt to study two field, crime and high society which had no previous empirical correlation. Sutherland defined his idea as "*crime committed by a person respectability and high social status in the course of his occupation*" (Sutherland in Michael, 2004). Sutherland noted that in his time, less than two (2) percent of the persons committed to prison in a year belong to the upper class. Sutherland goal was to prove a relation between money, social status, and likelihood of going to jail for a white-collar crime, compared to more visible, typical crimes, although, the percentage is a bit higher today.

Much of Sutherlands work was to separate and define the difference in blue collar street crimes, such as arson, burglary, theft, assault, rape and vandalism which are often blamed on psychological, associational and structural factors. Instead, white-collar criminals are opportunists, who over time learn they can take advantage of their circumstances to accumulated financial gain. They are educated, intelligent, affluent, individuals who are qualified enough to get a job which allows them the unmonitored access to often large sum of money.

But the federal Bureau of Investigation (FBI) has adopted a narrow approach defining white-collar crime as those illegal acts which are characterized by deceit, concealment, or violation of trust and which are not dependent upon the application or threat of physical force or violence. The blue collar crime will more often use physical force, whereas, in the corporate world, the identification of a victim is less obvious and the issuer of reporting is complicated by a culture of commercial confidentially. Fredrichs (2007) stated that the only way one crime differs from another is in the backgrounds and characteristics of its perpetrators.

Most, if not all white-collar offenders are distinguished by lives of privilege, much of it with origins in class inequality. It is estimated that a great deal of white-collar crimes is undetected or if detected, it is not reported. Because of the high status of the perpetrators of these crimes, a highly trained and experienced examiner or investigator like the Professional Forensic Accountant is needed to forestall the occurrence of such high profile fraud. This study is anchored on while collar crime theory because it expounds forensic accounting: A tool for fraud detection and prevention in tertiary institutions in south East Nigeria.

2. Forensic Accounting

Oliver in Okoye, Adeniyi and Udegbunam (2019) noted that the complexity and scope of commerce has expanded throughout the world, the need to track money and financial information has grown. There has been a corresponding increase in illegal financial activity, according to separate surveys by the U.S department of Justice, Price Water House Coopers, and the Association of Certified Fraud Examiners (ACFE). Ironically, illegal businesses and perpetrators of financial crimes also need to keep track of their cash flow and manage their operational performance to generate profits, fund activities and avoid detection and seizure of their assets. Joshi in Okoye and Gbegi (2013) ascribed the origination of forensic accounting to Kutilya, the first economist to openly recognize the need for the forensic accountant whom he said, mentioned 40 ways of embezzlement centuries ago.

Okoye and Gbegi (2013) however stated that the term “forensic accounting” was coined by Peloubet in 1946. Okoye and Gbegi (2013) said, forensic accounting is the application of accounting knowledge and investigative skills to identify and resolve legal issues. It is the science of using accounting as a tool to identify and develop proof of money flow. These tools and/or techniques, skills and knowledge can be invaluable for fraud and forensic accounting investigators.

Forensic accounting is the specialty practice area of accountancy that describes engagements that result from actual or anticipated disputes or litigation (Oladipupo, 2005). Also, forensic accounting is simply the process of interpreting, summarizing and presenting complex financial issues clearly of law as an expert witness (Ola, 2018, 146). Okoye and Gbegi (2013) described forensic accounting as assistance in disputes: Which are likely to involve litigation, arbitration, expert determination, mediation or an enquiry by an appropriate regulatory authority, and investigation of suspected frauds, irregularity or impropriety which could potentially lead to civil, criminal or disciplinary proceedings; while focusing primarily on accounting issues (p. 6). In the context of this study, forensic accounting is viewed as the area of accounting that described engagement that result from real or anticipated litigation. In holistic view, these engagements fall into one of the four categories, economic damages, fraud and other forms of economic crime, as the use of investigative techniques, integrated with accounting to develop information and opinion for evidence in court and for use by expert witness.

2.1 The Role and Skills of Forensic Accountants

An understanding of effective fraud and forensic accounting techniques can assist Professional Forensic Accountants in identifying illegal activity and discovering and preserving evidence (Houck et al in Okoye &Gbegi, 2013). Hence, it is important to understand that the role of a forensic accountant is different from that of regular auditor.

It is widely known that an auditor determines compliance with auditing standards and considers the possibility of fraud. Okoye, Adeniyi and Udegbunam (2019), claimed that a Professional Forensic Accountant has a single-minded focus on the detection, and deterrence of fraud. Roche, as cited by Okoye, Adeniyi and Udegbunam (2019), described a forensic accountant as someone who can look behind the faced-out, accept the records, at their face value-someone who has a suspicious mind that (considers that) the documents they are looking at may not be what they purport to be and someone who has the expertise to go out and conduct very detailed interviews of individuals to develop the truth, especially if some are presumed to be lying.

Krell (2012) says forensic accounting often involves an exhaustive, detailed effort to penetrate concealment tactics. Stephen Seliskar says, in terms of the sheer labor, the magnitude of effort, time and expense required to do a single, very focused (forensic) investigation-as contrasted to auditing a set of the financial statements-the difference is incredible. The above views imply that the role of Professional Forensic Accountant is different from that of other accountants. They are different in their further education and training of years of experience. In addition, forensic accountant, are closer to being investigators, economists who do economic and market estimation and appraisers-who are typically trained in finance or valuation theory in business.

3. Method

3.1 Research Design

This could be seen as the procedure and processes adopted for collecting and analyzing data for this study. Research design is a blue print that guides the researcher. It helps researcher to layout the research hypothesis, methodologies, implementation, procedures, collection and analysis for the conduct of a research project. The study adopted the descriptive survey design for this study.

3.2 Area of the Study

The study was carried out in 7 public universities of South East Nigeria. The public universities include: University of Nigeria, Nsukka; Enugu State University, Enugu; Nnamdi Azikiwe University, Awka, Chukwuemeka Odumegu Ojukwu University, Ili; Ebonyi State University, Abakilike; Abia State University, Uturu and Imo State University, were used in ascertaining forensic accounting: a tool for fraud detection and prevention in tertiary institution in South East Nigeria.

3.3 Population of the Study

The population comprised of 470 account staff in 7 public universities of South East Nigeria to include (University of Nigeria, Nsukka = 88; Enugu State University, of Science and Technology, Enugu = 48; Nnamdi Azikiwe University, Awka = 84; Chukwuemeka Odumegu Ojukwu University, Ili = 58; Ebonyi State University, Abakilike = 64; Abia State University, Uturu = 54 and Imo State University = 74).

3.4 Sample and Sampling Techniques

The sample size is usually a compromise between what is desirable and what is feasible. For the purpose of this study, the study used a non-probability sampling (purposive sampling) to select the seven public universities of South East Nigeria used as population for the study. The use of purposive sampling was based on the fact that, South East has a total of 7 public universities which the population were selected, also that the nature of fraud committed in all the public universities appears to be the same and therefore may serve a good representative of the whole public universities. The use of arithmetical formular was adopted to arrive at the sample size 'n' with 5% level of significance (Adefila, 2008).

$$n= \frac{N}{1+N(e)2}$$

Where:

n = sample size

N = population of business studies teachers e = margin of errors (5% or 0.05).

I = constant value

The result is presented thus,

$$n = \frac{N}{1+N(e)2}$$

$$n = \frac{470}{1+470(0.05)2}$$

$$n = \frac{470}{1+470(0.0025)}$$

$$n = \frac{470}{1+1.175}$$

$$n = \frac{470}{2.175}$$

n = 216.

The sample size of 216 was selected from the 7 public universities and tabulate below:

Table 1: The sample selection

Universities	**Total Population of Account Staff**	**Proportion to Total Population**	**Sample**
University of Nigeria, Nsukka	88	46	40
Enugu State University, of Science and Technology, Enugu	48	46	22
Nnamdi Azikiwe University, Awka	84	46	39
Chukwuemeka Odumegu Ojukwu University, Ili	58	46	27
Ebonyi State University, Abakilike	64	46	29
Abia State University, Uturu	54	46	25
Imo State University, Amogu	74	46	34
Total	**470**		**216**

3.5 Method of Data Analysis

The statistical tool used for testing of hypothesis one and two is the Analysis of Variance (ANOVA). The Analysis of Variance (ANOVA) statistics was used to test the null hypotheses at 0.05 level of significance. However, where a disagreement existed among the three groups in the case of the null hypotheses tested, the Scheffe Post-hoc test was conducted to determine the group in which such disagreement relates. A null hypothesis was rejected where the calculated p-value was less than the 0.05 level of significance, it meant that there was significant difference. Conversely, where the calculated p-value was greater than or equal to the level of significance (0.05), it meant that there was no significant difference and the hypothesis was not rejected.

4. Result

4.1 Testing of Hypotheses

Hypothesis 1: The use of Forensic Accounting does not significantly reduce the occurrence of Fraud cases in the tertiary institutions in South East Nigeria.

Table 2: ANOVA Summary Table (N= 216)

	Sum of Squares	df	Mean Square	F-ratio	P-value	Decision
Between Groups	14007	2	4350	12.43	4.352	Not Significant
Within Groups	3460	213	353.85			
Total	17467	**215**				

Since the calculated value of 12.43 is greater than the p-value of 4.352, the alternate hypothesis (Ha) is accepted and the Null hypothesis (H0) is rejected. Therefore, we can conclude that the use of Forensic Accounting does significantly reduces the occurrence of fraud cases in the tertiary institutions in South East Nigeria.

Hypothesis 2: There is no significant difference between Professional Forensic Accountants and Traditional External Auditors on reduction of the occurrence of Fraud cases in the tertiary institutions in South East Nigeria.

Table 3: ANOVA Summary Table (N= 216)

	Sum of Squares	df	Mean Square	F-ratio	P-value	Decision
Between Groups	14934	2	5646	183.7	4.352	Not Significant
Within Groups	124	213	32			
Total	15058	**215**				

Since the calculated value of 183.7 is greater than the critical value of 4.352, the alternate hypothesis (Ha) is accepted and the Null hypothesis (H0) is rejected. Therefore, one can conclude that there is significant difference between Professional Forensic Accountants and Traditional External Auditors on reduction of the occurrence of Fraud cases in the tertiary institutions in South East Nigeria.

5. Discussion of Findings

Based on the Analysis of Variance (ANOVA) used for the first and second hypothesis the findings are stated below. The conclusion of the first hypothesis reveals that Forensic Accounting do significantly reduces the occurrence of fraud cases in the tertiary institutions in South East Nigeria. Hence, the service of Professional Forensic Accountant is therefore required in the tertiary institutions in South East Nigeria. The finding of this study agreed with study of Okoye and Gbegi (2013) who noted that the use of Forensic Accounting do significantly reduces the occurrence of fraud cases in the public sector.

The second hypothesis equally reveals that there is significance difference between Professional Forensic Accountants and Traditional External Auditors on reduction of the occurrence of Fraud cases in the tertiary institutions in South East Nigeria. In this view, the service of the Forensic Accounting is therefore required in the tertiary institutions in South East Nigeria to replace that of the external auditor. The finding of this study also agreed with study of Okoye and Gbegi (2013) who noted that there is significance difference between Professional Forensic Accountants and Traditional External Auditors and therefore the use of Forensic Accountants can help better in detecting and preventing fraud cases in the public sector organizations

More so, oral interview conducted shows that the tertiary institutions in South East Nigeria do not use the services of Professional Forensic Accountants. It can equally be deduced from the two hypotheses analyzed that the services of Professional Forensic Accountants will definitely be required in the tertiary institutions in South East Nigeria, since services are provided by the Traditional External Auditor, yet fraud are still being perpetrated in the tertiary institutions.

6. Conclusion

In conclusion, this study has analyzed why attention has to be given to the question of fraud detection and fraud prevention in the tertiary institutions in South East Nigeria with the aid of Forensic Accounting. It has discussed the Forensic Accounting approach or procedure necessary for detection, prevention of fraud and the type of control to be established in order to control the incidence of fraud in the state. It should be emphasized that whether within the business world or in the tertiary institutions sector, the ultimate responsibility for discouraging and preventing fraud and corrupt practices rests with management.

This study also appreciated some of the reasons why government staff and other public servant engage themselves in fraudulent practices. Also, the role of forensic accountants and the skills they need to possess to be able to contribute their quota meaningfully in achieving the objectives of this study was extensively discussed.

Above all, the study revealed that the use of Forensic Accounting do significantly reduces the occurrence of fraud cases in the tertiary institutions in South East Nigeria sector, as it equally showed that there is significant difference between Professional

Forensic Accountants and Traditional External Auditors in terms of skills and techniques applied in Fraud detection and prevention.

7. Recommendations

Consequent upon several revelation from the research conducted, there is need to make some recommendations, which are stated below:

1) Appropriate sanctions should be applied when fraud is detected. Where persecution is considered to be the appropriate sanction, proper Forensic procedures need to be followed during investigation and trained experts like the Professional Forensic Accountants should conduct the investigation, where there is evidence of fraud, appropriate disciplinary action in accordance with the Provision of Public Service Rules should be implemented. Criminal prosecution may also be instituted as well as civil action to recover any losses of public money or property. South East Nigeria tertiary institutions is hereby encouraged to learn from what others are doing on fraud prevention, detection and investigation using state-of-the-art technique called “Forensic Accounting”.
2) Training and guidance are vital in maintaining the effectiveness of the strategy for the detection and prevention of fraud and corruption and its general credibility. The government needs to support induction and work related training, particularly for employees involved in internal control system and the accounting sector, to ensure their responsibilities and duties are regularly highlighted and reinforced and that best practices is followed across organizations service. Significantly, Forensic Accounting or any anti-fraud and corruption strategy can only work if heads of departments and senior administrators are committed to it. The anti-graft agencies like the EFCC and the ICPC should ensure they have their technical, investigative and accounting staff trained in the field of Forensic Accounting. Adequate structure and mechanism must be put in place.

The Role of Forensic Accounting in Fraud Detection and Prevention in Nigerian Public Sector: A Case Study of Lagos, Nigeria.

ABSTRACT

This study investigated the role of forensic accounting in fraud detection and prevention in the Nigerian Public Sector, Lagos State Government was used as a case study. The study aimed to assess the impact of forensic accounting on fraud detection and prevention in the Lagos State Government and recommend strategies for fraud prevention in the Nigerian Public Sector. A sample of 60 Certified Accountants was selected using purposive sampling techniques and secondary data from past financial statements. The findings were analyzed using frequency distribution tables, simple percentages and chi-square statistical formula. The findings of this study revealed that the Lagos State Government uses forensics minimally in its operations, with no forensic accounting department and no management training on forensic fraud prevention. The study calls for the government to go beyond annual and periodic audits and employ forensic accountants' services to regularly review all major financial transactions. There should be a separate office for forensic accountants at all government levels in Nigeria and regular management training on forensic fraud detection and prevention.

Keywords: **Forensic Accounting, Fraud, Detective Controls, Preventive Controls.**

INTRODUCTION

The issue of fraud, money laundering and other corrupt practices in business and government organizations has necessitated the application of forensic or investigative accounting. Forensic accounting is that branch of accounting that deals with recovering proceeds of fraud, money laundering and other related corrupt practices that may occur in an organization. Once fraud is perceived or detected, a professional set of people forensic accountants is called upon to help detect the fraud and furnish management with substantial evidence to be presented in the court of law to prosecute the suspect(s). Forensic accounting is the application of financial skills and investigative mentality to unsettled issues, conducted within the context of the rules of evidence (Enofe et al, 2015). Awolowo (2019) asserted that forensic accounting as a discipline encompasses fraud knowledge, financial expertise, and a sound knowledge and understanding of business reality and the workings of the legal system.

According to Polycarp (2019), forensic accounting utilizes accounting, auditing and investigative skills. Lal Bhasin (2017) also asserted that it takes an accountant to catch a corrupt or fraudulent accountant. Silverstone et al (2012) also remarked that law enforcement personnel in recent years have become more aware of white-collar crimes, but lacked expertise and training in combating such crimes. It has been noted that “Government spending has always been a big business, but it has become so massive today that the public is demanding to know whether the huge outlays of money are being spent wisely or whether they are spent at all.” Officials and employees who manage public sector activities are by that duty, required to render adequate accounts of their activities to the public (Adegbie et al, 2019). The incidence of fraud continues to increase in Nigeria across private and public sector organizations. Fraud is now a universal problem as no nation is immune to it, although developing countries and their various states suffer the most pain.

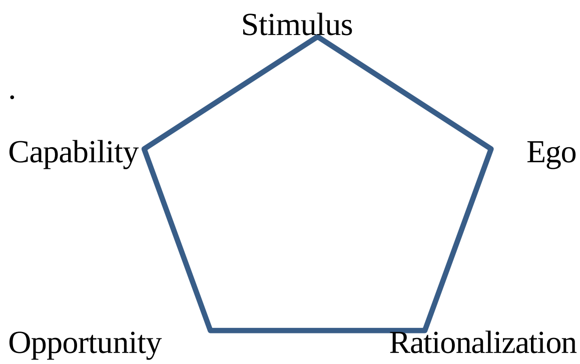
The Chartered Institute of Forensic and Investigative Professionals of Nigeria (CIFIPN) reported that 70-75% of Nigeria's National Budget is lost to corruption at all levels of governance. The president, Dr Enape Victoria Ayishetu, attributed this to well-orchestrated systemic and endemic monumental corruption. The country cannot justify the huge sums seen in the National Budget without a commensurate measure of realistic budget performance. Fraud, corruption, and cybercrimes thrive in Nigeria due to a lack of investigation and prosecution. Nigeria was rated one of the most corrupt countries in the world according to the 2021 Corruption Perceptions Index.

In Nigeria, a series of frauds have been committed both in the public and private sectors of the economy, though these institutions have internal auditors, the lack of independence of the internal auditors is a major impediment to their effectiveness in reducing fraud. The use of external auditors has also not reduced corruption and fraud. The recent development in Information Communication Technology (ICT) in the world and globalization generally have increased the activities of fraudsters. It has now become pertinent that forensic accounting be introduced and practices since the external auditors do not or may not have the required training to be able to tackle modern frauds such as security fraud, embezzlement, bankruptcies, over-invoicing, fund diversion, ghost workers, contract scam, criminal financial transaction, money laundering by organized criminals etc. Consequent to the above problem of fraud in the public sector, this study uses the Lagos

State Government as a case study to investigate the role of forensic accounting in fraud detection and prevention. Research Objective To determine the effect of forensic accounting in fraud detection in Lagos State Government. To assess the effect of forensic accounting in fraud prevention in Lagos State Government. To recommend ways of improving fraud detection and prevention in the Nigerian Public Sector.

Research Hypotheses

H1: There is no significant utilization of forensic accounting techniques by the Lagos State government for detecting fraud effectively.
H2: There is no significant utilization of forensic accounting techniques by the Lagos State government for preventing fraud.
H3: There is no significant reduction in fraud within the Lagos State Government as a result of the implementation of forensic accounting techniques.
Literature review
Comer's four theories of fraud explain the potential for individuals to commit fraud against employers, suppliers, customers, third parties, and government departments. The opportunity to commit fraud is influenced by the perpetrator's access to accounts, assets, premises, and computer systems, the skill required to identify and exploit such opportunities, and the availability of sufficient time for planning and execution. Concealment is an essential ingredient of most systematic fraud. It can be defined as a manipulation of an accounting record or misrepresentation of a physical, personal or commercial reality intended to hide, disguise or alter an account/inventory discrepancy before, during or after a fraudulent act. To disguise, confuse, or delay the recognition of the perpetrator's guilt (to avoid the location of blame) or to establish a plausible excuse for dishonesty; To enable the perpetrator to obtain, a dishonest advantage by deception. The theory explains the fact that the perpetrators deliberately introduce confusion during, or after the act, to conceal it or assist in its omission. The theory asserted that any act of concealment leads to fraud. Fraud is deviant behavior and perpetrators often conceal their dishonesty as plausible breaches of rules or procedures. It is a variance from normal fraud and fraudulent practices in Nigeria. Generally, deviations from the accepted procedures are the first symptoms of fraud. The name of this model is the acronym of the words: stimulus, capability, opportunity, rationalization and ego. The first four elements of the model (stimulus, capability, opportunity and rationalization) stem from the Fraud Diamond (which is an extension to the fraud triangle) while the fifth is introduced to enhance both fraud detection and prevention as well as to broaden our understanding regarding the major determinants of fraudulent activities.



Source: Albrecht et ql (2008)

Ramazani and Refiie (2010) and Okoye and Gbegi (2013) revealed that forensic accountants effectively modify the extent and nature of audit tests when the risk of management fraud is high and this helps to detect and prevent fraud. They proposed unique procedures that are not by auditors. They called for the inclusion of forensic accountants in the audit plan and fraud risk management. The US General Accounting Office (GAO) emphasizes fraud prevention and detection in statutory audits, increasing auditors' responsibility to consider fraud risks during financial statement audits, as per both US and international standards setters. Lal Bhasin (2017) also submitted that all normal statutory audits should contain some elements of forensic enquiry as the evidence of fraudulent activities can be easily discovered if a thorough evaluation of the adequacy and compliance of the internal control mechanism is made. All these are aimed at fraud prevention and detection. However, this may not be achieved by an auditor without some understanding of forensic accounting methods (Efiong, 2012).

METHOD

This study adopted the survey research design. Obidiebube (2011) survey research studies a group by collecting and analyzing data from representative items. The researcher gathered data from the Lagos State Government staff and management. This study aimed to gather data from 70 Certified Accountants working with the Lagos State Government at the government secretariat in Alausa, Lagos. Purposive sampling techniques were used to ensure data was collected from knowledgeable and experienced accountants. The Yaro Yamani formula was used to determine the sample size, ensuring a fair chance for all respondents. In this study, the primary data was collected from 60 Certified Accountants working with the Lagos State Government using a questionnaire and structured interview. The data is unique to the researcher and the research, ensuring no one else has access to it. This study used secondary data from published Account Statements of the Lagos State Government, records from the State Ministry of Finance, and online information. The researcher used questionnaires as a method of data collection, administered to the staff of Lagos State Government. The data was analyzed using frequency distribution tables and simple percentages. For a comprehensive analysis, absolute numbers were used to determine the frequency of responses and percentages. Answers to the research questions were provided by comparing the percentage of workers' responses to each statement in the questionnaire. Frequency refers to the arrangement of responses in order of magnitude, while percentage refers to the proportion of responses. The simple percentage method is considered a straightforward and easy-to-understand method.

RESULTS AND DISCUSSION

Table 1.
Gender Classification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	38	64.0	64.0	64.0
	Female	22	36.0	36.0	100.0
	Amount	60	100.0	100.0	

Table 2.

Age Classification

	Frequency	Percent	Valid Percent	Cumulative Percent
18-25 years	7	12.0	12.0	12.0
26-35years	26	44.0	44.0	56.0
36-45 years	18	30.0	30.0	86.0
46 years & Above	9	14.0	14.0	100.0
Amount	60	100.0	100.0	

The analysis of Table 2 shows that 12 respondents representing 12.0% were between the ages of 18-25 years, 44 respondents representing 44.0% were between 26-35years of age, 30 respondents representing 30.0% were between 36-45years of age 14 respondents representing 14% were about 46years and above.

Table 3.

Educational qualification of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
	MSc/PhD	6	10.0	10.0	10.0
	OND/NCE	22	37.0	37.0	47.0
Valid	HND/BSc	12	20.0	38.0	67.0
	ACA/ACCA	20	33	33	100
	Amount	60	100.0	100.0	

The result of Table 3 shows that 3 respondents representing 6% had an MSc/PhD certificate, 8 respondents representing 16% had Primary School Certificates, SSCE/OND certificates, and 14 (42.0%) respondents representing 38.0% had HND/B.Sc qualifications while 6 respondents representing 12.0% had MSC/PhD.

Table 4.

Position in organization

		Frequency	Percent	Valid Percent	Cumulative Percent
	Senior Staff	6	10.0	10.0	10.0
	Middle Managers	15	25.0	25.0	35.0
Valid	Supervisor	18	30.0	30.0	65.0
	Junior Staff	21	35.0	35.0	100.0
	Amount	60	100.0	100.0	

The result of Table 4 shows that 6 respondents representing 10% were senior staff in the organization, 15 respondents representing 25% were middle managers, 18 respondents representing 30% were supervisors and 21 respondents representing 35% were junior staff.

Analysis of Responses on the use of forensic accounting in fraud detection in Lagos state.

Table 5.

We use forensic accountants to review all documentation and electronic evidence of government financial transactions.

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	18	30	30	30
	Agree	26	43	43	73
	Undecided	1	2	2	75
	Disagree	15	25	25	100
Valid	Strongly Disagree	0	0	0.5	
	Amount	**60**	**100**	**100**	**100**

Table 5 above shows that 30 % of the respondents strongly agreed with the statement that using forensic accountants to review all documentation and electronic evidence of government financial transactions 43% agreed 2% were undecided 25 percent disagreed.

Table 6.

This government carries out forensic investigations of the state's major income, expenditure, asset and liability

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	26	43	43	43
	Agree	16	26	26	69
	Undecided	13	21	21	90
	Disagree	4	8	8	98
Valid	Strongly Disagree	1	2	2	100
	Amount	**60**	**100**	**100**	**100**

Table 6 shows that 69% of the respondents agreed that this government conducts a forensic investigation of the state's major income, expenditure, asset and liability**,** 8% were undecided, while 4% disagreed.

Table 7.

This government uses proactive forensic data analysis using computer-based tests to detect fraud

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	16	27	27	27

	Agree	13	22	22	49
	Undecided	3	5	5	54
	Disagree	22	37	37	90
Valid	Strongly Disagree	6	10	10	100
	Amount	**60**	**100**	**100**	**100**

Table 7 shows that 27% of the respondents strongly agreed with the statement this government uses proactive forensic data analysis using computer-based tests to detect fraud, 22% agreed, 5% were undecided, 37 disagreed and 10 strongly disagreed.

Analysis of Responses on the use of forensic accounting in fraud prevention in Lagos state.

Table 8.

This government uses forensic accounting techniques to conduct internal control studies.

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	12	20	20	22
	Agree	15	25	45	67
	Undecided	5	8	55	77
	Disagree	20	33	88	92
Valid	Strongly Disagree	8	14		100
	Amount	**60**	**100**	**100**	**100**

Table 8 shows that 20% of the respondents strongly agreed with the statement this government uses forensic accounting techniques to conduct internal control studies, 25% agreed, 8% were undecided, 33 disagreed and 14 strongly disagreed.

Table 9.

This government conducts forensic fraud examinations and Internal Audit of high-risk areas.

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly agree	12	20	20	20
	Agree	15	25	25	45
Valid	Undecided	5	8	8	53
	Disagree	24	40	40	93
	Strongly Disagree	4	7	16	100.0
	Amount	60	100.0	100.0	

Table 9 shows that 12% of the respondents strongly agreed with the statement that this government conducts forensic fraud examination and Internal Audits of high-risk areas while 25% Agreed, 40% disagreed, 7% strongly disagreed and 5% were undecided.

Table 10.

The government provides regular management training on forensic fraud prevention.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	12	20	20	20

	Agree	12	20	20	40
	Undecided	5	9	9	49
	Disagree	24	40	40	89
	Strongly Disagree	7	11	11	100.0
	Amount	60	100.0	100.0	

Table 10 above shows that 20% of the respondents strongly agreed the government provides regular management training on forensic fraud prevention, 20 agreed, 9% were undecided, 40% disagreed and 7% strongly disagreed.

Analysis of Responses on forensic accounting and fraud reduction in Lagos state.

Table 11.

The use of forensic accounting has helped in fraud detection in the Lagos State Government.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	20	33	33	33
	Agree	26	43	43	76
	Undecided	1	2	2	78
	Disagree	10	17	17	95
	Strongly Disagree	3	5	5	100.0
	Amount	60	100.0	100.0	

Table 11 above shows that 33% of the respondents strongly agreed that the use of forensic accounting has helped in fraud detection in the Lagos State Government, 26 % agreed, 2 % were Undecided, 17% disagreed and 5% strongly disagreed with the statement.

Table 12.

The use of forensic accounting has helped in the prevention of fraud in the Lagos State Government.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	17	17	17
	Agree	6	10	10	27
	Undecided	3	5	5	32
	Disagree	24	40	40	72
	Strongly Disagree	17	28	28	100.0
	Amount	60	100.0	100.0	

Table 12 above shows that 17% of the respondents strongly agreed that the use of forensic accounting has helped in preventing fraud in the Lagos State Government, 10 % agreed, 5% were Undecided, 40% disagreed and 28% strongly disagreed with the statement.

Table 13.

The use of forensic accounting has reduced fraud cases in the Lagos State Government.

		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Strongly Agree	10	17	17	17
	Agree	7	12	12	29
	Undecided	5	8	8	37
	Disagree	24	40	40	77
	Strongly Disagree	14	23	23	100
	Amount	60	100.0	100.0	

Table 13 above shows that 17% of the respondents strongly agreed that **t**he use of forensic accounting has reduced fraud cases in Lagos State Government, 12 % agreed, 8% were undecided, 40% disagreed and 14% strongly disagreed with the statement.

Hypothesis

H1: There is no significant utilization of forensic accounting techniques by the Lagos State government for detecting fraud effectively.

The null hypothesis (H_{O1}) and accept the alternative hypothesis (H_1) if the Chi-Square calculated is greater than the table value of the Chi-Square. In this study, the Chi-Square (χ^2) was calculated at 0.05 level of significance.

Table 14.

This government uses proactive forensic data analysis using computer-based tests to detect fraud

		Observed O	Expected E	O-E	$(O-E)^2$	$(O-E)^2/E$
Valid	Strongly Agree	16	12	4	16	1.33
	Agree	13	12	1	1	0.08
	Undecided	3	12	-9	81	6.75
	Disagree	22	12	10	100	8.33
	Strongly Disagree	6	12	-6	36	3
	Amount	**60**	**60**		**234**	**19.49**

The null hypothesis (H_{O1}) and accept the alternative hypothesis (H_1) because the Chi-Square calculated (19.49) is greater than the table value of Chi-Square **(**9.49**)** at 0.05 level of significance and 4 degrees of freedom (df). Thus, the Lagos State government uses forensic accounting techniques to detect fraud.

H2: There is no significant utilization of forensic accounting techniques by the Lagos State government for preventing fraud.

The null hypothesis (H_{O1}) and accept the alternative hypothesis (H_1) if the Chi-Square calculated is greater than the table value of the Chi-Square. In this study, the Chi-Square (χ^2) was calculated at 0.05 level of significance.

Table 15.

The government provides regular management training on forensic fraud prevention.

		Observed O	Expected X	O-X	$(O-X)^2$	$(O-X)^2/E$
Valid	Strongly agree	12	12	0	0	0

Agree	12	12	0	0	0
Undecided	5	12	-7	49	4.08
Disagree	24	12	12	144	12
Strongly Disagree	7	12	-5	25	2.08
Amount	**60**	**60**		**218**	**18.16**

The null hypothesis (H_{O1}) and accept the alternative hypothesis (H_1) because the Chi-Square calculated **(18.16)** is greater than the table value of Chi-Square **(**9.49**)** at 0.05 level of significance and 4 degrees of freedom (df). Thus, the Lagos State government uses forensic accounting techniques to prevent fraud.

H3: There is no significant reduction in fraud within the Lagos State Government as a result of the implementation of forensic accounting techniques.

The null hypothesis (H_{O1}) and accept the alternative hypothesis (H_1) if the Chi-Square calculated is greater than the table value of Chi-Square. In this study, the Chi-Square (χ^2) was calculated at 0.05 level of significance.

Table 16.

The use of forensic accounting has reduced fraud cases in the Lagos State Government.

	Responses	Observed O	Expected X	O-X	$(O-X)^2$	$(O-X)^2/E$
Valid	Strongly Agree	10	12	-2	4	0.33
	Agree	7	12	-5	25	2.08
	Undecided	5	12	-7	49	4.08
	Disagree	24	12	12	144	12
	Strongly Disagree	14	12	2	4	0.33
	Amount	**60**	**60**		**226**	**18.82**

The null hypothesis (H_{O1}) and accept the alternative hypothesis (H_1) because the Chi-Square calculated **(18.82)** is greater than the table value of Chi-Square **(**9.49**)** at 0.05 level of significance and 4 degrees of freedom (df). Thus, the use of forensic accounting techniques has reduced fraud in Lagos State Government

Discussion

The study provides valuable insights into the role of forensic accounting in detecting and preventing fraud in the public sector. The study found that a significant percentage of respondents acknowledged the use of forensic accountants by the Lagos State Government to review documentation and electronic evidence of financial transactions, demonstrating the importance of employing specialized accounting techniques to scrutinize financial records and identify potential irregularities or fraudulent activities. A substantial proportion of respondents agreed that the Lagos State Government conducts forensic investigations into major income, expenditure, assets, and liabilities, indicating a commitment to thorough scrutiny of financial activities. However, the study also highlighted areas where the use of forensic accounting techniques may not be fully utilized, such as a relatively lower percentage of respondents agreeing that the government employs proactive forensic data analysis using computer-based tests to detect fraud. A significant portion of respondents disagreed with the use of forensic accounting techniques for conducting internal control studies, raising questions about the extent to which internal controls are subjected to forensic scrutiny. Additionally, there was a lack of consensus among respondents regarding the conduct of forensic fraud examination and internal audit in high-risk areas by the Lagos State Government, highlighting the need for a more comprehensive and standardized approach to forensic examination and internal auditing.

The study reveals that 52% of respondents disagreed with the government's regular management training on forensic fraud prevention, highlighting the need for enhanced training and capacity-building initiatives to equip public sector professionals with the necessary skills and knowledge to effectively combat fraud through forensic accounting techniques. The majority of respondents (59%) strongly agreed that the use of forensic accounting has contributed to fraud detection within the Lagos State Government, but 23% disagreed, indicating a need for further examination of the factors influencing its effectiveness in detecting fraudulent activities. A significant majority (68%) disagreed with the notion that forensic accounting has effectively prevented fraud within the Lagos State Government, highlighting the challenges and limitations associated with leveraging forensic accounting as a proactive measure to prevent fraudulent activities in the public sector. A considerable proportion (54%) expressed disagreement with the claim that the use of forensic accounting has led to a reduction in fraud cases, underscoring the complexity of addressing fraud through forensic accounting and necessitating a deeper understanding of the underlying factors contributing to the prevalence of fraudulent activities despite the use of forensic techniques.

The findings from the study underscore the critical role that forensic accounting plays in enhancing fraud detection and prevention efforts within the Nigerian public sector. As demonstrated by the case study of Lagos State, the proactive adoption of forensic accounting techniques can significantly mitigate risks associated with fraud and financial misconduct. Other governmental institutions in Nigeria need to recognize the value of integrating forensic accounting practices into their governance frameworks. Investment in training programs, technology infrastructure, and expert resources in forensic accounting can strengthen public sector entities' capacity to combat fraud effectively. Policymakers and stakeholders should consider enacting legislation and regulations mandating the use of forensic accounting in governmental financial management. By institutionalizing forensic accounting practices, Nigeria can foster a culture of accountability, transparency, and integrity within its public sector, ultimately leading to improved governance and service delivery for its citizens.

CONCLUSION

Forensic accounting plays a crucial role in fraud detection and prevention within the Nigerian public sector, particularly in Lagos. It helps uncover fraudulent activities, financial irregularities, and corruption. The Lagos case study exemplifies the importance of forensic accounting in combating fraud and mismanagement of public funds. By implementing advanced investigative techniques like data analysis and internal control assessments, forensic accountants can identify and mitigate risks associated with fraudulent behaviour. The Nigerian public sector institutions, including those in Lagos, should prioritize integrating forensic accounting practices into their governance frameworks. This includes investing in professional training, leveraging technology for fraud detection, and enacting strict anti-fraud policies. Collaboration between government entities, law enforcement agencies, and professional accounting bodies is also essential for effective fraud prevention. The adoption of forensic accounting as a proactive measure against fraud is pivotal in safeguarding public resources and fostering a culture of accountability and transparency. The successful implementation of forensic accounting in the Nigerian public sector can significantly reduce instances of fraud and financial mismanagement, contributing to the nation's governance and financial integrity. The Nigerian government should extend beyond annual audits to employ forensic accountants for regular financial review. A separate office for forensic accountants should be established in all government structures and institutions. All major government income, expenditure, assets, and liabilities should undergo quarterly forensic audits. Forensic evidence should be used to prosecute fraud offenders, preventing and reducing fraud. Regular management training on forensic accounting techniques in fraud detection and prevention should be ensured.

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An Evaluation of the Effect of Forensic Accounting Techniques on Financial Reports of Listed Manufacturing Companies in Nigeria

ABSTRACT

This study aims to investigate the effect of forensic accounting techniques in analyzing the financial reports of listed manufacturing companies in Nigeria. The research employed a purposive sampling technique, selecting 152 respondents as the sample size. A simplified questionnaire was used to obtain accurate and validly quantifiable data, utilizing a 5-point Likert scale method continuum of 1 to 5. This study seeks to gain insight into how forensic accounting techniques can be applied to detect financial manipulations and irregularities in corporate financial reports. The study provides valuable insights into the current state of forensic accounting practices in Nigeria's manufacturing by exploring the perspectives of data mining techniques, data analysis techniques, and machine learning techniques on industry professionals. Data collected were analyzed using descriptive statistics and ordinary least squares. The result revealed that data mining techniques, data analysis techniques, and machine learning techniques have a positive and significant impact on financial information in Nigeria. The study concluded that listed manufacturing companies need to take crucial steps to maximize forensic accounting techniques and thereby improve financial information. The study recommended that forensic accounting techniques and processes should be improved to enhance the qualitative financial statement efficiency process.

Keywords: Forensic Accounting**,** Data Mining Techniques, Data Analysis Techniques, Machine Learning Techniques, Financial Information Manipulation.

1.1 INTRODUCTION

Globally, the company primarily communicates its financial information to the public through financial statements. Which creditors, stakeholders, and investors use when making investment decisions. Importantly, the statutory auditors' true and fair view opinion on the financial statement is expected to add credibility to such financial reports (Bassey, 2018). This is then anticipated to boost the users of financial statement confidence. The quality of financial information organizations reveals significantly impacts financial reports' efficiency. ÖZCAN, (2019) stated that financial information manipulation is one of the issues most frequently discussed in the broader economic context. Although Nigeria aspired to be one of the world's biggest economies, this menace makes their financial reports wallow in the problems of scandals, frauds, and failures in both private and public sectors which contributed to the loss of confidence by the users of the financial statements. in the ability to contribute viable solutions to financial problems, its demand for forensic accountants. Dada and Jimoh, (2020) opine that the level of fraud, corruption, and other unethical behaviors in the private and public sectors is worrisome the study, therefore, revealed how to effectively prevent and manage the application of forensic accounting services.

Recently financial manipulation causes a loss of confidence for financial statement users in many federations, and Nigeria is not excepted which has caused financial criminality, poor financial management, and misuse of public funds which has increased continuously, no doubt that perpetrated is under the supervision of the internal auditors of an organization which suffices to say that independence of the internal auditors is not enough because is the employee (OKAFOR & OBIORA, 2022). the manipulation has caused oil bunkering, embezzlement bribery, looting, money laundering, fraud, tax evasion, and currency manipulation are examples of financial crimes (Okoye & Ndah, 2019). Financial crimes include subsidy fraud, advance fee fraud, identity fraud, bank fraud, mortgage fraud, embezzlement, credit card fraud, hedge fund fraud, consumer fraud, and occupational fraud (Ehioghiren & Atu, 2016). The occurrence of fraud and other financial crimes has increased today, and the advent of computerization and the accessibility of Internet services has only worsened the issue of financial crimes worse (Bassey, 2018). Consequently, this study seeks to establish the extent to which Forensic Accounting can help in preventing and detecting fraudulent activities before perpetrated and achieving qualitative financial statements that could aid stakeholders in making better investment decisions.

The trend of forensic accounting in the world made prior scholars study issues related to the effect of forensic accounting on the detection of financial information manipulation in different times and spaces. Atabay and Dinç, (2020) studied financial information manipulation and its effects on investor demands: the case of bist bank. the study focused on the perception of two main objectives. The first is to determine whether banks, which are Public Interest Entities, manipulate their financial statements, and the second objective is to reveal whether the detected financial manipulations affect investor decisions. Enofe *et al.* (2015) examined the impact of forensic audits on corporate fraud in Nigeria. The objective of the study is to determine the relationship between forensic audit and corporate fraud. Oyedokun & Emmanuel, (2016) investigate the techniques available in forensic accounting investigation and interrogate the justification for same. Eko *et al.*, (2020) evaluated the application of forensic accounting techniques in preventing/detecting fraudulent practices in commercial banks in Nigeria by specifically assessing the impact of commercial data mining, ratio analysis, and trend analysis techniques in fraud detection/prevention.

The objective of this study varies in its entirety from prior studies, as this intends to investigate the effectiveness of forensic accounting in achieving quality assurance in financial reporting in Nigeria. Specifically, to Deter and Determine the efficacy, and effectiveness of Forensic Accounting in improving the faithful representation and enhancing the value relevance of financial statements, using data mining techniques, data analysis techniques, and machine learning techniques as the predictor variables of forensic accounting that can accomplish the tasks of reducing the menace of financial information manipulations in both private and public sectors, with special focus on the southwestern states in Nigeria. the remainder of the research paper is structured as follows: a review of extant literature highlighting several concepts about forensic accounting, Data mining techniques, Data analysis techniques, Machine learning techniques, appropriate theoretical considerations, methodology of the study, data analysis, and discussion of findings and conclusion.

2. Literature Review and Hypothesis Development

2.1. Conceptual Review

2.1.1. Forensic Accounting (FA)

Dada and Jimoh, (2020) conceptualized forensic accounting as the application of financial skills and investigative mentality to unresolved issues, conducted within the context of the rules of evidence. Forensic Accounting (FA), is an expert in accounting, auditing, and investigation that are used to support judicial cases. According to Bhasin, (2017), "Forensic accounting consists of two key components: litigation services that recognize an accountant's function as an expert consultant, and investigation services that leverage a forensic accountant's expertise and may involve potential trial evidence." This suggests that in addition to financial accounting, a forensic accountant should also be knowledgeable about internal control systems, the law, other institutional needs, investigation expertise, and interpersonal skills. forensic accounting involves the application of accounting and auditing, financial and investigative skills, to be carried out when a lapse has been established to ascertain who is responsible, the reason for the action including the extent of the damage if any. Bassey, (2018) submitted that Forensic accounting is also defined as the application of accounting and auditing, financial and investigative skills, to unravel issues conducted within the context of the rules of evidence. This means that forensic accounting is quickly replacing the traditional method of manual way of auditing for preventing financial information manipulation.

The application of forensic accounting for the detection of financial manipulation influences faithful representation and enhances the relevance of the financial statement, forensic accounting is highly objective in skill because human decisions can be influenced by situation subjective elements which are not based on figures alone (Ekanem, 2020). The forensic account gives accurate results as it functions based on a set of artificial bits of intelligence of programmed rules, and the development of models that could identify fraudulent practices and manipulation of financial information (Ozili, 2020). Akinadewo and Akinkoye, (2020) opined that the advent of forensic accounting is a confident retrieval of financial information in place and prevents personal bias to deter manipulations (Al-Qadi & Al-Dmour, 2022).

2.1.2 Data Mining Technique

Data mining Techniques (DMT) are defined as the process of finding anomalies, patterns, and correlations within large data sets to predict outcomes. Data Mining Techniques (DMT) can also be used by Companies to turn raw data into useful information (Oyedokun & Emmanuel, 2016). In addition, Data mining Techniques are described by Eko *et al.*, (2020) as software to look for patterns in large batches of data, an organization can learn more about their development and effective marketing strategies as well as increase sales and decrease costs. However, Data mining Techniques help in the extraction of hidden predictive information from a large database and also served as a powerful new technology with great potential to help Companies focus on the most important information and also the tool to predict future trends and behaviors allowing Businesses to make proactive knowledge-driven decisions (OKAFOR & OBIORA, 2022). The automated prospective analyses offered by data mining techniques move beyond the analyses of past events provided by retrospective tools typical of decision support systems.

Remarkable, because of the considerable effect Data mining techniques software is extremely helpful in detecting fraud as it has scripting capabilities and can search organizations' databases for anomalies and suspicious patterns that are symptoms of fraud. Some of the commercial data mining techniques software are Audit Command Language (ACL) and CaseWare (IDEA) Inventory Database for Environmental Analysis is a robust auditing and financial reporting platform of any organization to empower both the auditing and accounting department to strengthen accountability, transparency, and trust in improving the overall management of public funds from mismanagement (Tan *et al.*, 2016). Data mining techniques help Banks understand their customer base and the billions of transactions at the heart of the financial system, which can be applied to detect financial manipulation in any organization (Aggarwal & others, 2015). Data mining techniques helps financial services Companies get a better view of market risks, detect fraud faster before it causes the problem of unfaithful representation of financial statements, and also manage regulatory compliance obligations and get optimal returns on their marketing investments. DM is a powerful artificial intelligence (AI) tool, which can discover useful information by analyzing data from many angles or dimensions, categorizing that information, and summarizing the relationships identified in the database to aid audit work. Subsequently, this information helps make or improve decisions to avert manipulation.

Nigeria data mining techniques which are an artificially intelligent tool is still in its early stage and still developing, the accounting scandals during the few years have induced a crisis of non-confidence in financial reporting practices and the effectiveness of corporate governance mechanisms. Indeed, Forensic Accounting integrates accounting, auditing, and investigative skills to conduct investigations in a variety of manipulation that lead to fraud cases with the help of data mining this will be possible to detect and prevent fraud. Although SAS and IFRS encourage the application of technology in accounting with the development of global transactions of business, with the use of data mining we make the financial statement to gain faithful representation because data are automatically saved to Claud, and if it is manipulated on the financial statement when data mining on forensic investigate the transaction it will detect the manipulation before the publication of the financial information.

2.1.3. Data Analysis Techniques

Various definitions of data analysis techniques (DAT) have been suggested because data analysis techniques have several uses. Wang and Byrd, (2017) submitted that Data analysis techniques involve the systematic and structured process of examining, cleaning, transforming, and interpreting data to extract meaningful insights and support decision-making. it is also characterized by solving maintenance problems to avert manipulation of records and development of programs for the organization, Consequently, Data analysis techniques refer to the set of procedures and methods used to analyze and summarize data in order to discover patterns, relationships, and trends, and draw conclusions from the data (Saggi & Jain, 2018)(Saggi & Jain, 2018). Data analysis techniques encompass a variety of statistical and computational methods used to analyze and interpret data, including descriptive statistics, inferential statistics, data visualization, and machine learning algorithms (Ranjan & Foropon, 2021).

Furthermore, Data analysis techniques play a crucial role in detecting and mitigating financial information manipulation, which refers to intentional misrepresentation or distortion of financial data for fraudulent purposes. Data analysis techniques such as outlier detection, trend analysis, and statistical analysis can help identify unusual patterns or anomalies in financial data. For example, if there are significant deviations from expected trends or statistical norms in financial statements, it could indicate potential manipulation attempts (Saggi & Jain, 2018). Data analysis techniques, such as data mining and machine learning algorithms, can be used to identify patterns and relationships in large financial datasets. These patterns could highlight suspicious activities or unusual behaviors that may indicate financial manipulation, such as revenue recognition fraud or insider trading (Wang & Byrd, 2017; Ranjan & Foropon, 2021).

2.1.4. Machine Learning Technique

Sridhar, (2020) defined a Machine Learning Technique (MLT) as the use of algorithms and statistical models that allow computer systems to learn from and make predictions or decisions based on data without being explicitly programmed. Similarly, Machine learning techniques refer to the use of computational methods and algorithms that enable computer systems to automatically learn and improve from experience, data, and feedback, and make decisions or predictions based on that learning (Anwar *et al.*, 2019). Likewise, Machine learning techniques encompass a set of tools and methods that enable computers to automatically discover patterns, relationships, and insights from data, and use that knowledge to make predictions or decisions (Swathy & Saruladha, 2022).

Additionally, Machine learning algorithms can analyze large amounts of financial data in real-time, identifying patterns and anomalies that may indicate financial manipulation. By leveraging machine learning techniques such as anomaly detection, clustering, and classification, financial institutions can potentially detect fraudulent activities or financial manipulations earlier, mitigating potential losses. Similarly, Machine learning models can analyze historical transaction data to identify patterns of fraudulent behavior and develop predictive models that can flag suspicious transactions in real-time. This can help financial institutions detect and prevent financial manipulation, such as insider trading or market manipulation, by identifying abnormal trading patterns or unusual behaviors in trading activities.

2.1.5. Financial Information Manipulation

Financial information manipulation is a deliberate and illegal act committed by the organization (Adewoye & Olaoye, 2014). Financial manipulation could be seen as an intentional distortion of financial statements or documents of an organization for undue advantages. A financial manipulation is also an intentional act by one or more individuals among management staff or third parties which results in a misrepresentation of financial information (Nwanaka, 2022). Financial information manipulation has been existing for a long as a global phenomenon and it increases bit by bit every day which is a deliberate act that put monetary losses on both organizations, and the economy.

Various researchers in accounting and economists have concluded that financial information manipulation is mainly for low-profit distribution, reduction of the tax base, an increase of loan obtainment possibility, and maximization of firm value (Bezirci & Karahan, 2015). Olukowade & Balogun, (2015) explained the devastating effect of financial manipulation as reported of fraud in a generic term and embrace all the multifarious means that human ingenuity can devise, and resort to an individual to get an advantage over another in false representation. This also inline that fraud is an act or course of deception, deliberately practiced to gain unlawful or unfair advantage; at the detriment of another which means the modification made knowingly and willfully by businesses in accounting records and transactions, in financial statements, through addition and subtraction, for misleading financial information users, the immediate effect and overall perception of financial manipulation in many organizations hinged on the emphasis of Financial information manipulations made by businesses generally emerge in two forms: balance sheet covering and balance sheet window-dressing (Atabay & Dinç, 2020).

Conceptual framework

This study's conceptual framework was to establish the link between the independent variable and the dependent variable. The independent variable is forensic accounting (FA), proxied with Data

Mining Techniques (DMT), Data Analysis Techniques (DAT), and Machines Leaning Techniques (MLT). Financial Information Manipulation (FIM) is the dependent variable.

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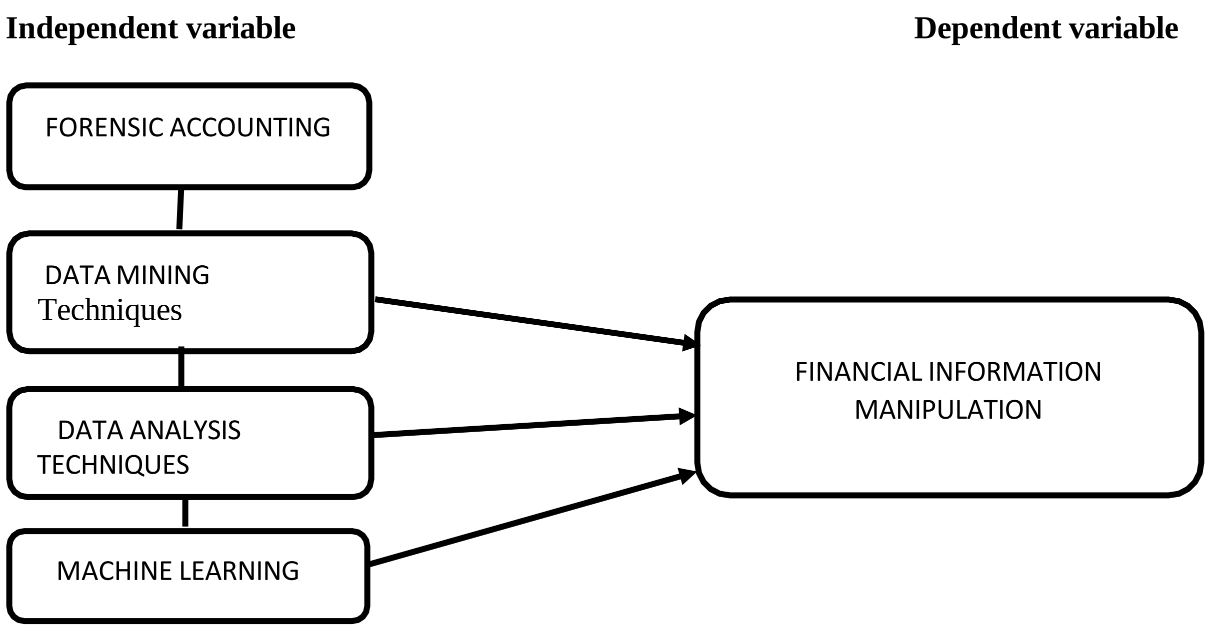

Conceptual framework to show the interaction between forensic accounting, Data mining technique, Data analysis technique, Machine learning technique, and financial information manipulation.

Figure 1: Conceptual Framework

Source: Author's Conceptualization (2022)

2.2 Theoretical Review

This study is anchored on forensic accounting theory (FA). Prior studies have used several theories to explain why forensic accounting skills are used to manage financial information manipulation, fraud, and crimes on the financial statement. However, this theory is propounded by Frank Wilson in the 1930s. When Wilson was working as a Certified Public Accountant (CPA) for the US

Internal Revenue Service, he was assigned to investigate the transactions of the infamous gangster Al Capone. Capone was known for his involvement in illegal activities, including violent crimes. However, forensic accounting theory stated that the techniques and methods used to detect fraud reflect the accounting and non-accounting decisions that were taken into consideration by the forensic investigator. Also, the central tenet of forensic accounting theory is that the selection of forensic detection techniques depends less on the forensic investigator's knowledge, experience, and training and more on the accounting and non-accounting considerations they made at the beginning, middle, and end of the fraud detection process (frank Wilson 1930).

Although, according to forensic accounting theory (Ozili, 2020) asserted the procedures and approaches chosen to look for creative accounting or financial reporting manipulations and the results of doing so reflect the accounting and non-accounting judgments that the forensic accountant or investigator took into account. An ethical goal of a forensic investigation exercise is to locate unresolved problems, uncover them, and provide solutions to prevent similar behavior from happening in the future. These corrective measures could involve monetary penalties, jail time, etc. An exercise in the forensic investigation should not fail the convicted company or the demise of the guilty person. Without this presumption, forensic investigators can try to bring about the destruction of the company or the person they are looking into for criminal suspicion. This assumption is essential because it eliminates the forensic investigator's personal bias or propensity for judgment and stops that prejudice from influencing the forensic investigation.

Finding evidence of a crime and making it appear credible in court are the main goals of forensic accounting. Investigating someone's finances, or even the finances of a whole company is a significant task that calls for the expertise of forensic accountants. Legal expertise and accounting expertise are combined by forensic accountants. They can evaluate businesses and assist in problem-solving. By doing this, businesses can avoid theft, fraud, manipulation, corruption, etc. A forensic accountant conducting an audit of a business should maintain objectivity. Although there are other applications for forensic accountants in firms, they are typically used by large businesses to conduct audits. Forensic accountants frequently support professional negligence claims when evaluating and commenting on other professionals' work. Also, to analyze lifestyle for spousal support, determine income available for child support, and determine equitable distribution, forensic accountants are involved in marital and family law.

Chabbra & Koli, (2018) asserted that due to the increasing fraud, there is a loss of trust in the reliability of the financial information used by the user or makers of the economic decisions. Forensic accountants have received training in conflict resolution and mediation procedures. They also settle cases involving disagreements in partnerships and corporations. Additionally, forensic accountants assist in settling instances involving contract disputes, construction defects, product liability, infringement of patents and trademarks, and responsibility resulting from contract breaches, Similarly, assist in managing a variety of insurance claims, including those involving property loss due to various risks, substantial loss policies, property loss due to various risks, and other forms of insurance claims. Additionally, insurance firms' claim settlement arrangements are made to address policyholders' needs.

Empirical Review

Academic researchers have been engaging in different studies on the effect of forensic accounting enhancement. Chaqiqi, (2021) X-trayed Readiness Analysis of Data Analytics Audit Implementation in Inspectorate General of the Ministry of Finance: An Indonesian Case. This study aims to measure the readiness of audit data analytics implementation reviewed from general to specific by using a qualitative method where the informants were selected based on purposive sampling involving 20 speakers consisted of auditor, supporting unit, auditee, and expert. This study uses the primary model. The results show that the Ministry of Finance Inspectorate General has resources readiness at a high level and other categories at a medium level. Specifically, based on two most important activities involving data analytics in Inspectorate General, namely tax audit and financial statement review, show that tax audit has a high level of resource readiness, and the others at a medium level, meanwhile the financial statement review has a high level of resources readiness and information system readiness the others at a medium level.

The finding further confirmed declarations by Afeef & Al Ali, (2017) in United Arab Emirates on Powerful Predicting Model for Financial Statement Fraud Based on Optimized XGBoost Ensemble Learning Technique. the study aims to develop a better Financial Statement Fraud (FSF) detection model by utilizing data from publicly available financial statements of firms in the MENA region. The study uses different Machine Learning techniques. empirical findings show that the XGBoost algorithm outperformed the other algorithms in this study, namely, Logistic Regression (LR), Decision Tree (DT), Support Vector Machine (SVM), AdaBoost, and Random Forest (RF). We then optimize the XGBoost algorithm to obtain the best result, with a final accuracy of 96.05% in the detection of FSF

Jacky and Sulaiman, (2022) examining the use of data analytics in external auditing: a content analysis approach in Malaya. This study examines the perceptions of interested stakeholders on the factors affecting the use of data analytics (DA) in financial statement audits. The study used as a framework to perform a direct content analysis of all the 50 responses. The analysis showed that a range of attributes, such as the usefulness of DA in auditing, authoritative guidance (auditing standards), data reliability and quality, auditors' skills, clients' factors and costs, were the factors perceived by stakeholders to be affecting the use of DA in external auditing. The finding of this study justifies the result of the survey by Chukwuma *et al.*, (2023) and Okolie *et al.* (2023) and Exploring the role of machine learning in detecting and preventing financial statement fraud: A case study analysis in America. the study examines the current state of forensic accounting in detecting financial statement fraud and to explore the potential benefits of a paradigm shift in forensic accounting that incorporates advanced data analytics, machine learning, and continuous monitoring. The study involves a combination of literature review and case study analysis. The case studies and the data analysis showed that the use of advanced data analytics, machine learning, and continuous monitoring can improve the effectiveness and efficiency of detecting and preventing financial statement fraud.

Ashtiani and Raahemi, (2022) (Ashtiani & Raahemi, 2022) Intelligent Fraud Detection in Financial Statements Using Machine Learning and Data Mining: A Systematic Literature Review in Canada. systematic literature review (SLR) is undertaken on the study. The study found no statistically significant of the variable focus on exploring machine learning and data mining.

Edu, (2022) assessed the Positioning big data analytics capabilities towards financial service agility the study identifies how big data analytics BDA capabilities can be deployed to provide significant improvement for financial services agility. The study adopts survey data from 485 banking professionals' perspectives with BDA usage, IT capability development and financial service agility. The study show that distinctive BDA usage grounded on the concept of IT capability viewpoint proof that financial service agility could be enhanced provided enterprises develop technical capabilities alongside other relevant resources. The finding of this study justifies the result of the survey by Eko *et al.,* (2020) evaluated the application of forensic accounting techniques in preventing/detecting fraudulent practices in commercial banks in Nigeria by specifically assessing the impact of commercial data mining, ratio analysis, and trend analysis techniques in fraud detection/prevention. Similarly, the finding of the study on Fraudulent financial reporting and data analytics: an explanatory study from Ireland by Aboud and Robinson, (2020) suggests that whilst data analytics is widely used by businesses in Ireland there is an underutilization of data analytics as an effective tool in the fight against fraud. The study suggests there are barriers that may be preventing companies from implementing advanced data analytics to detect financial statement fraud and identifies how those barriers may be overcome.

(OKAFOR & OBIORA, 2022) analyze the impact of forensic audit and financial statement fraud of deposit money banks in Nigeria between the period 2016-2020. with the following objectives: Determine the effect of data mining on financial statement fraud of deposit money banks. in Ascertain the effect of computer-assisted audit techniques on financial statement fraud of deposit money bank. The research is survey-based, using primary information gathered using a questionnaire. The findings indicate that data mining significantly affects the financial statement fraud of Nigerian deposit money banks. Also, computer-assisted audit procedures significantly affect the financial statement fraud of deposit money banks in Nigeria. This was supported by Joseph *et al.*, (2016) nvestigated the Impact of Forensic Accounting in Fraud Detection and Prevention: Evidence from the Nigerian Public Sector, and found that fraud identification and prevention in Nigeria might benefit significantly from forensic accounting.

United Kingdom researcher Ozili, (2015) examined the influence of forensic accounting involves the process of understanding, identifying, detecting,9 and communicating fraud patterns and schemes to stakeholders to aid any investigation process or activity. A survey design was adopted for the study. The result showed the broad range of skills of the forensic investigator identified in the literature has consequences of further broadening the scope of forensic accounting education among tertiary institutions. which raises the question of whether students studying forensic accounting should study a broad range of subjects, such as auditing, financial analysis, psychology, criminology, and other subjects. Furthermore, a broad focus on forensic accounting education suggests that in-depth forensic education is unlikely to be effectively addressed during the academic institutions' annual or termly curriculum, either as a stand-alone course or as an integrated course.

KARUTI, (2020) Investigate forensic accounting and fraud control in county governments in Kenya: evidence from counties in mt. Kenya region. the study population is 415. And Analyses of both quantitative and qualitative data were conducted using a descriptive study methodology. The study found that county government personnel did not sufficiently enforce forensic accounting standards to counter the potential of fraud. This finding agreed with a study done by Özcan, (2018) who supported the engagement and usefulness of the Beneish Model in forensic accounting practices: Evidence from Turkey. Logistic regression analysis was used to examine the empirical variables. Based on a sample that includes 174 firms from 2005 to 2017. The classification results suggest that Beneish Model has superior performance in the detection of firms that committed financial statement fraud.

The study of Okoye and Ndah, (2019) x-trayed Forensic Accounting and Fraud Prevention in Manufacturing Companies in Nigeria. The study investigates the relationship between forensic accounting practices and the prevention of fraud in manufacturing companies in Nigeria while the specific objectives are to Determine the relationship between fraud investigation practices and the prevention of fraud in manufacturing companies and also the relationship between fraud litigation practices and the prevention of fraud in manufacturing companies. Data were collected from primary sources through the issue of fifty (50) structured questionnaires to the accounting staff of ten (10) manufacturing companies. The findings showed that there is a positive and statistically significant relationship between fraud investigation practices and the prevention of fraud in manufacturing companies. The findings also showed that there is a positive and statistically significant relationship between fraud litigation practices and the prevention of fraud in manufacturing.

Mishra *et al.*, (2021) examines the role of Forensic Audit in Controlling Financial Statement Fraud: A case study of Satyam Computers in Aligarh India. Secondary data taken from Banking, accounting, financial journals, and financial newspapers, have been used in this study. The result shows that financial statement fraud has to be considered a serious problem by financial regulators, enforcement agencies, and investigators and strict implementation of existing rules and regulations in the Indian corporate sector will go a long way in improving transparency in the financial statement. This will substantially improve corporate culture and ethics among Indian companies. Similar sentiments were echoed by Kurnaz *et al.*, (2019) who affirmed that forensic accountants are a positive relationship between internal control and forensic accounting field expertise and that the relationship between quality financial reporting and forensic accounting field expertise was

partially significant.

Halilbegovic *et al.*, (2020)sought to evaluate the application of the Beneish M-score model on small and medium enterprises in the Federation of Bosnia and Herzegovina. With a sample size of 4,580 small and medium enterprises, data was analyzed using audited financial statements in the period from 2008 to 2015. The study result describes the comparison of different industry sectors regarding the possible manipulators and serves as a solid foundation for further research in the area of forensic accounting. Study findings were similar to the work done by Afeef & Al Ali, (2017) who argued that engagement of The Auditors' Perception of the effect of Forensic Accounting to Mitigate Earnings Management in Jordanian Companies that revealed the forensic accounting (namely, Forensic culture and communication skills, Accounting skills, Knowledge in the field of controlling and auditing) affect earnings management, where the maximum effect was for knowledge in the field of controlling and auditing, while the least effect was for forensic culture and communication skills.

Igweonyia, (2016) focuses study on forensic accounting on fraudulent practices in Nigeria's public sector using a questionnaire and chi-square for data analysis shows that forensic accounting will significantly reduce the occurrence of fraud cases in the public sector. Similar sentiments were in line with an empirical study conducted by Akani & Ogbeide, and2017) on forensic accounting and fraudulent practices in the Nigerian public sector, it was revealed that there is a significant relationship between forensic accounting and the reduction of fraudulent practices in the Nigerian public sector.

Throckmorton *et al.,* (2015) argue that continuous reviews, reforms, and fines issued against curbing financial statement fraud will only be meaningful if such frauds are detected promptly. This finding concurred with assertions by Anning and Adusei, (2022) and (Jaswadi et al., (2022)) who acknowledged that forensic accounting results demonstrate that the majority of listed manufacturing and trading firms are likely to engage in financial statement manipulation in Ghana. The contribution of (KARUTI, 2020) underscores the significance of the research established that policies on forensic accounting were not properly enforced by county government employees to fight the threat of fraud in Kenya.

3. Methodology

The study adopted survey research design to collect information from the prospective respondent. A well-structured questionnaire was given to managers, auditors, chartered accountants, and directors of accounting companies and parastatals in Lagos state, Nigeria. The study uses purposive sampling techniques in selecting 152 respondents which is the sample size. the questionnaire raised was simplified to obtain accurate and validly quantifiable data, with a 5-point Likert scale method continuum of 1 to 5 with the following options: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), Strongly Disagree (SD). The questionnaires were analyzed with descriptive and inferential statistics. This study's conceptual framework was purposed to establish the link between the independent variable and the dependent variable. The independent variable is forensic accounting (FA), proxied with Data Mining Techniques (DMT), Data Analysis Techniques (DMT), and Machine Learning Techniques (MLT). Financial information manipulation (FIM) is the dependent variable.

3.1 Reliability Test

The reliability of the study was accessed with Cronbach Alpha. For reliability test on financial information manipulation, 6 items were raised and the Cronbach Alpha is 0.753, 10 items under Data Mining Techniques registration were considered and the Cronbach Alpha is 0.822, 10 items were also considered under and the Data Analysis Techniques Cronbach Alpha is 0.769 and 10 items were considered under Machine Learning Techniques with the recorded Cronbach Alpha of 0.747. From the Cronbach Alpha result, it was discovered that all items are reliable and meet the threshold requirement of 0.7 therefore in explaining forensic accounting techniques on financial statement in Nigeria the research instrument is reliable based on the above result.

Table1: Reliability Test

Items	Variables Cronbach's Alpha
Data Mining Techniques (DMT)	82.2%
Data Analysis Techniques (DAT)	76.9%
Machine Learning Techniques (MLT)	74.7%
Financial Information Manipulation (FIM)	75.3%

Source: *Researcher's Computation*, (2023)

3.2. Model specification

The model for this study was developed in line with the following econometric model which is adopted to test the relationship between the dependent and independent variables.

$$Y = (\beta 0 + \beta 1\ X1 + \beta 2X2 + \beta 3X3 \ldots\ldots\ \beta nXn + \mu \ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where;

Y = Dependent variables

X1 – Xn = Independent variables

β0 = Constant of the equation.

β1 – βn = Coefficients of Independent variables

μ = Error term

Specification for the study, this relationship model was adopted thus:

FA = Forensic Accounting (Independent Variable)

FIM = Financial Information Manipulation (Dependent Variable)

$\propto$ = Constant

β1 - β2 = Coefficients

DMT = Data Mining Techniques

DAT = Data Analysis Techniques

MLT **=** Machine Learning Techniques

β0 = Constant of the Equation.

β1, β2, β3, = Unknown Coefficient of the Variable.
µ = error term.
A-priori expectation = β1, β2, β3, > 0
Conceptual Framework of changes to Forensic Accounting (FA).

4. Data Presentation and Analysis

4.1. Descriptive Statistics

The Table 2 below present the descriptive statistics test for the study in order to determine the degree at which the distribution of sample data corresponds to normal distribution and access the series characteristics of the variables. The outcome of the descriptive revealed that the average value of financial information manipulation is 4.1678; it varies from a minimum of 2.75 to a maximum of 4.75. The standard deviation that measures the degree of variability stood at 0.45289. This showed high variability to its mean value. The Skewness recorded a value of -0.514 and therefore described as a long-left tail due to its negative value while the Kurtosis of -0.329 is known as Platykurtic distribution as its value is less than 3.

Remarkably, Data Mining Techniques (DMT) has its mean value of 4.4474 varies from a minimum of 2.00 to a maximum of 5.00. The standard deviation of data mining techniques registration stood at 0.70748 which showed a high deviation value from its recorded mean. Data Mining Techniques registration is negatively skewed with a value of -1.460 thus described as a long-left tail while the Kurtosis value of 2.634 is described as Platykurtic distribution because the variable is less than 3.

Also, Data Analysis Techniques (DAT) has an average value of 4.0658 varies from a minimum of 2.00 to a maximum of 5.00 The standard deviation of data analysis techniques showed the extent of its variability from its mean value and it recorded a value of 0.95370 implying that the degree of its variability to its mean is high. The Skewness showed that the variable is negatively skewed as the value stood at -0.736 thus described as has a long-left tail while the Kurtosis of -0.433 is known as Platykurtic distribution because it is less than 3.

Lastly, Machine Learning Techniques (MLT)has an average value of 4.0724, varies from a minimum of 2.00 to a maximum of 5.00. The standard deviation of machine learning techniques showed 0.78985 implying that the degree of its variability to its mean is high. Conversely, machine learning techniques Skewness stood at -0.130. This value shows that the variable is negatively skewed and therefore described as a long-left tail. The kurtosis of -1.382 is known as Platykurtic distribution as it has a value lower than 3.

Table 2 Descriptive Statistics

Variables	FIM	DMT	DAT	MLT
Mean	4.1678	4.4474	4.0658	4.0724
Minimum	2.75	2.00	2.00	3.00
Maximum	4.75	5	5	5
Std. Deviation	0.45289	0.70748	0.95370	0.95370
Skewness	-0.514	-1.460	-0.736	-0.130
Kurtosis	-0.329	2.634	-0.433	-1.382
Obs	152	152	152	152

Source: ***Researcher's Computation*, (2023)**

4.2. Test of Variables

4.2.1. Multicollinearity Test

For the study to ensure that the model employed in the analysis has no multicollinearity problem, the study employed Tolerance value coupled with Variance Inflation Factor (VIF). The outcome of the tolerance value showed that data mining techniques is 0.901, Data analysis techniques has a tolerance value of 0.979 while the tolerance value for machine learning techniques is 0.919. However, since all the variables of the analysis have their tolerance values exceeding 0.10 the study concluded that multicollinearity problem does not present in the model. Moreover, the Variance Inflation Factor (VIF) for data mining techniques is 1.110, data analysis techniques have a variance inflation factor of 1.021 while the Variance Inflation Factor (VIF) for machine leaning techniques is 1.088. The outcome of these three variables presented indicated a value higher than 10 while the tolerance values in the rule of thumb are greater than 0.10 therefore, validated that multicollinearity problem does not exist in the model.

Table 3 Multicollinearity Test

Tolerance		VIF	1/VIF
DMT	0.901	1.110	0.901
DAT	0.979	1.021	0.979

DMT	0.919	1.088	0.919
Means VIF	1.07		

Source: ***Researcher's Computation*****, (2023)**

4.2.2 Normality Test

Remarkably, the study used a combination of histogram normality test and P-P Plot to ensure that the distribution of data was normal. The results were presented in Figure 2 and Figure 3. Figure 2 displayed the distribution of responses of most respondents, which demonstrated a bean-shape, indicating normality distribution. In contrast, Figure 3 showed that the regression standardized residual line fit into the variables significantly based on the P-P Plot analysis.

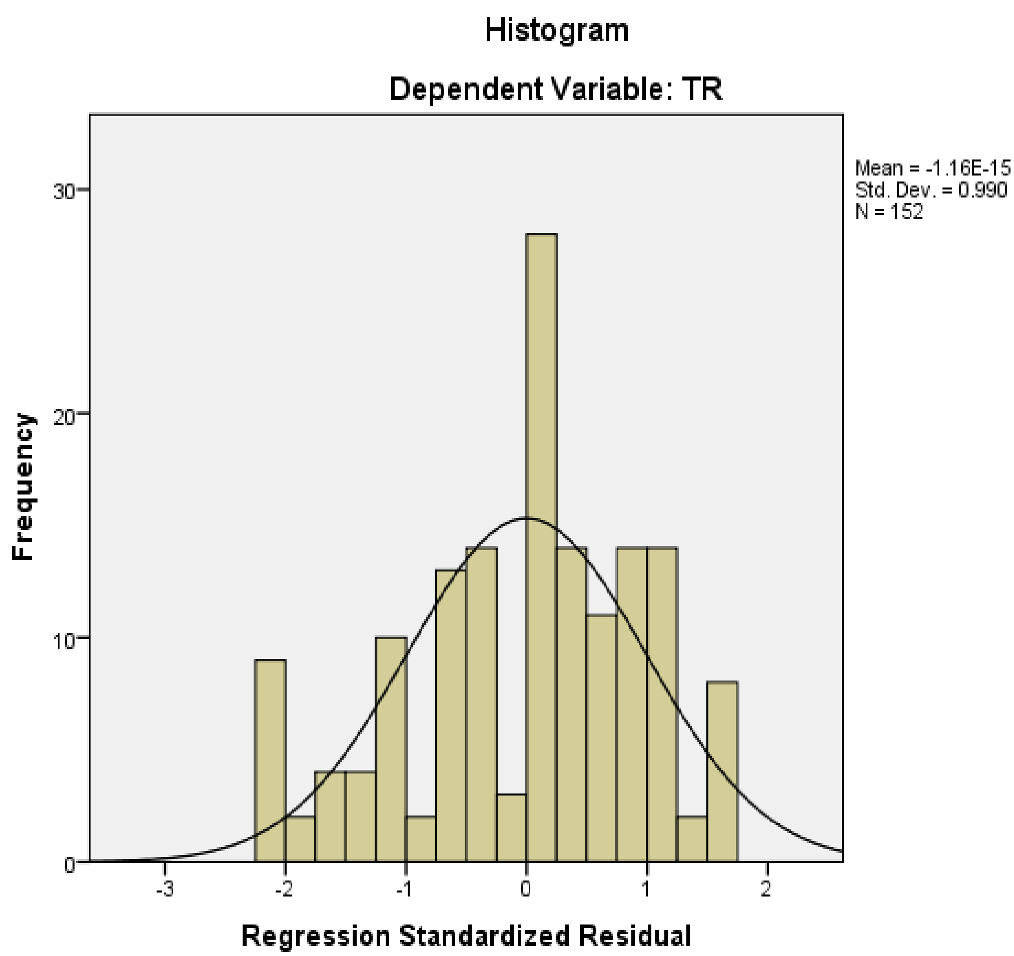

Figure 2: Histogram with Normal Curve

Source: ***Researcher's Computation*****, (2023)**

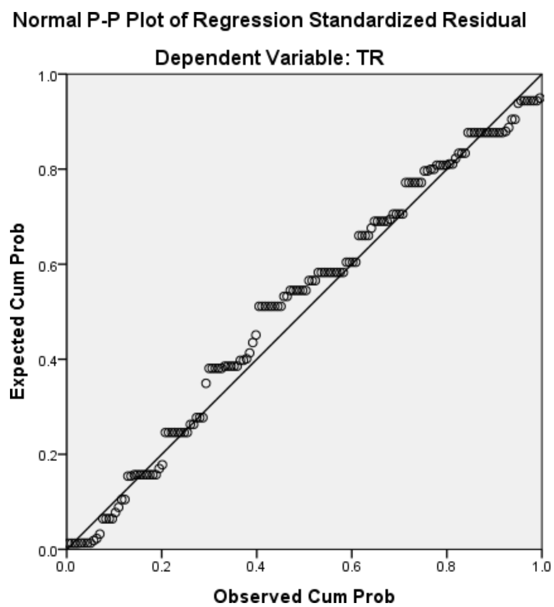

Figure 3: **P-P Plot of Regression Standardized Residual**

Source: ***Researcher's Computation*, (2023)**

Table4: **Post Estimation Test Results**

Tolerance And VIF Value		
Null Hypothesis	**Statistics**	**Probability**
	VIF	1/VIF
There is no issue of multicollinearity between the variables.		1.07
(1/VIF>0.10)		
Test for the overall Significance (F-Statistics)		
Null Hypothesis	**Statistics**	**Probability**
No significance in the model (P<0.05)	162.142	0.000

Source: ***Researcher's Computation*, (2023)**

4.2.3. Correlation Matrix

Reported in Table 5 is the outcome of the correlation matrix employed in the analysis of forensic accounting techniques on financial reports of listed manufacturing companies in Nigeria with specific focus on Lagos state, Nigeria. It was revealed that data mining techniques (DMT) exhibited significant positive correlation with financial reports with a coefficient 0.389. This implied that an increase in data mining techniques will lead to 0.389 unit increase in achieving qualitative financial statements. Data analysis techniques has significant positive correlation of 0.438 units implied that an increase in forensic accounting techniques will increase qualitative financial statements by 0.438 units. The correlation of forensic accounting techniques and financial statements is 0.554 which implied that a unit increase of machine leaning techniques will lead to 0.554 unit increase in achieving qualitative financial statements listed manufacturing companies in Nigeria. The correlation between other variables showed that the correlation between financial statements and machine leaning techniques is 0.143, correlation between data mining techniques and machine leaning techniques is -0.283 while the correlation between data analysis techniques and machine leaning techniques is -0.015.

Table 5: Correlation Analysis of Variables

	FIM	**DMT**	**DAT**	**MLT**
FIM	1.0000			
DMT	0.389**	1.0000		
	(0.000)			
DAT	0.438**	0.143	1.0000	
	(1.0)	(0.080)		
MLT	0.554**	-0.283**	-0.015	1.0000
	(0.000)	(0.000)	(0.853)	

Source: ***Researcher's Computation,* (2023)**

4.3. Forensic Accounting Techniques on Financial Information

Table 6 displayed the ordinary least square regression model, which revealed that the forensic accounting techniques account for 76% of the behavior of financial information in Nigeria. Additionally, the adjusted R2 value was 0.761990, indicating that variables not included in the model account for the remaining 24%. The F-statistics for the overall significance of the model was 162.1423, with a probability value of 0.000000, demonstrating that the model's goodness fit is significant.

In Nigeria, the use of data mining techniques has a strong positive impact on achieving qualitative financial statements, as indicated by a significant coefficient of 0.344523. This means that increasing the use of data mining techniques by one unit will result in a corresponding increase of 0.344523 units in the achievement of qualitative financial statements. Similarly, data analysis techniques have a positive impact with a significant coefficient of 0.176721, meaning that a one unit increase in the use of data analysis techniques will lead to a 0.176721 unit increase in achieving qualitative financial statements. Additionally, machine learning techniques also have a significant positive relationship with achieving qualitative financial statements in Nigeria, with a coefficient of 0.408163 indicating that a one unit increase in machine learning techniques will correspond to a 0.408163 unit increase in achieving qualitative financial statements.

The findings from this study showed the significant and positive relationship between data mining techniques and financial statements in Lagos State, Nigeria. The positive relationship implied that data mining techniques is helpful in boosting and increasing the qualitative financial statements through forensic accounting which enables the financial statements to have a strong positive impact in achieving qualitative financial statements, and services offered by the managers, director, auditors, and accountant. This thus enables the accurately, and recording all financial transactions, ensuring that the financial statements are complete and correct, and presenting the information in a clear and understandable manner. Additionally, having strong internal controls and effective auditing procedures can help ensure the accuracy and reliability of financial statements. The findings are in line with the study of Okafor and Obiora, (2022) analyze the impact of forensic audit and financial statement fraud of deposit money banks in Nigeria between the period 2016-2020. with the following objectives: Determine the effect of data mining on financial statement fraud of deposit money banks. The findings indicate that data mining significantly affects the financial statement fraud of Nigerian deposit money banks. Also, computer-assisted audit procedures significantly affect the financial statement fraud of deposit money banks in Nigeria.

This was supported by Joseph *et al.* (2016) and Kurnaz *et al*. (2019) investigated the Impact of Forensic Accounting in Fraud Detection and Prevention: Evidence from the Nigerian Public Sector, and found that fraud identification and prevention in Nigeria might benefit significantly from forensic accounting. The finding of this study justifies the result of the survey by Okolie *et al.* (2023) and Chukwuma *et al.* (2023) Exploring the role of machine learning in detecting and preventing financial statement fraud: A case study analysis in America, and found a positive significances. United Kingdom researcher Ozili, (2015) and Kenya researcher Karuti, (2020) Investigate forensic accounting. Found positive significances. This finding agreed with a study done by Özcan, (2018) who supported the engagement and usefulness of the Beneish Model in forensic accounting practices: Evidence from Turkey and also found positive significances. Similar sentiments were echoed by Throckmorton *et al*. (2015) who affirmed that forensic accountants are a negative relationship. The contribution of KARUTI, (2020) underscores the significance of the research established that policies on forensic accounting are not significant. Ashtiani and Raahemi,(2022) in Canada found no statistically significant of the variable focus on exploring machine learning and data mining.

The study revealed a positive and significant relationship between the use of forensic accounting techniques and financial information. Specifically, these techniques aid in the accurate recording of all financial transactions, with data mining techniques, data analysis techniques, and machine learning techniques in ensure completeness and correctness of financial statements, and present information in a clear and understandable manner. Furthermore, the implementation of robust internal controls and auditing procedures can enhance the precision and reliability of financial statements.

Table 6: Forensic Accounting Techniques on Financial Information in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob
DMT	**0.344523**	**0.026782**	**12.86374**	**0.0000**
DAT	**0.176721**	**0.019055**	**9.274333**	**0.0000**
MLT	**0.408163**	**0.023747**	**17.18806**	**0.0000**
C	**0.254841**	**0.182623**	**1.395444**	**0.1650**
R-squared	**0.766719**			

Adjusted R-squared	**0.761990**
F-statistic	**162.1423**
Prob (F-statistic)	**0.000000**

Source: ***Researcher's Computation*, (2023)**

4.4. Discussion of Findings

The findings of this study provide strong evidence that forensic accounting proxy through data mining techniques, data analysis techniques, and machine learning techniques significantly reduced financial report manipulation among listed manufacturing companies in Nigeria. The study found that the use of data mining, data analysis, and machine learning techniques reduced financial report manipulation by 82%, 76%, and 74% respectively. These results have significant implications for the practice of forensic accounting, as they suggest that these techniques can be effective tools for detecting and preventing fraudulent activities in financial reporting. Overall, the study highlights the potential of these techniques to improve the accuracy and reliability of financial reporting in Nigeria and beyond.

5. CONCLUSION AND RECOMMENDATIONS

In conclusion, the study demonstrates the potential of forensic accounting proxy through data mining techniques, data analysis techniques, and machine learning techniques in reducing financial report manipulation among listed manufacturing companies in Nigeria. with specific focus on Lagos State Nigeria. forensic accountants should consider using these techniques to detect patterns of manipulation and develop strategies to prevent such activities from occurring and policymakers and regulators should encourage the adoption of forensic accounting techniques to improve the accuracy and reliability of financial reporting in Nigeria and beyond.

The study recommended that:

1. Data mining techniques can be used to identify anomalies in financial data such as unexpected changes in revenue or expenses, which can be a red flag for potential manipulation.
2. Data analysis techniques can be employed to detect patterns of financial irregularities over time, allowing for early detection and prevention of fraudulent activity.
3. Machine learning algorithms can be trained on historical financial data to predict the likelihood of future financial fraud, enabling proactive measures to be taken to prevent such events.

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Forensic Accounting and Fraud Detection Control in Nigeria

Abstract

The study empirically examined the impact of forensic accounting and fraud detection control in Nigeria. The specific objectives were to; examine the effectiveness of forensic accounting in financial fraud control, the effectiveness of forensic accounting in improving financial reporting quality and to ascertain the relationship between forensic accounting and internal controls. The study adopted desk survey methods in gathering relevant information which was extracted from textbooks, libraries, published and unpublished journals. Pearson Product Moment Correlation statistical tool was adopted in this study. It was revealed that there was a significant relationship between forensic accounting and financial fraud detection, there was a significant relationship between forensic accounting and financial reporting quality and there was a significant relationship between forensic accounting and internal control. The study recommended that eradication of economic and financial crime through the adoption of forensic accounting in the system will improve the image of Institutions under-review. Also, recommended that government and regulatory authorities should ensure the provision of standards and guidelines to regulate forensic activities above all, therefore Nigerians should embrace integrity, objectivity, fairness and accountability in their day-to-day activities.

Keywords: Forensic Accounting; Internal Control; Fraud Detection; Financial Reporting; Nigeria.

Introduction

The menace of fraud, corruption and other financial crimes has a serious negative effect on economic development which makes it difficult for a country to provide essential amenities to its citizens. In Nigeria, the evil of fraud has reached an alarming rate which leads to persistent resources mismanagement and loss of government assets Nonye and Okoli, (2015). In the view of Claire and Jude (2016), the financial offence has become invasive and the possibilities of fraudulent practices have also turned out to be more pervasive. Similarly, a high level of financial abuse due to inflation of expenditure mostly by the principal officers has stunted the growth of many government ministries and agencies. The large fraud spreading in the ministries has made the conventional auditing and investigation unsuccessful and inefficient in fraud detection. Eiya and Otalor (2013) assert that fraud is a theme that has caught the attention worldwide.

Fraud is so pervasive in Nigeria in that it is becoming a way of life. Hope and Chikuloas in Osisioma (2012) averred that corruption is rare in Botswana, widespread in Ghana and systemic in Nigeria. For fraud to be systemic in Nigeria, it implies that fraud in Nigeria is an industry; which means it has stakeholders, investors and risk-return profile. The fraud industry is organized, with internal coordination, shared knowledge and share of benefits linking principals and agents and shares reward among the stakeholders. The system on its own grows practitioners at every level, from school to graduation, from childhood to adulthood, from micro to macro levels; thus there is a sustained supply of individuals which ensure that fraud is maintained in perpetuity. People expect leaders to be corrupt, with anything short of that as being too good to be true, as such persons are considered fools. The system actively discourages people with integrity and character, with the high price tag for public office, for men of character-sacrifice of personal integrity. In the system, leaders were not held accountable, with ethnic and sectoral loyalty overriding character and competence. In the light of the above, fraudulent activities has become institutionalized in that it has become a way of life and one is expected to be 'corrupt' in line with what is now the 'norm'. For instance, refusal to receive gratification in public service would be viewed as abnormal and frowned at by friends and associates and where your position would prevent possible beneficiaries from getting their share, it would be resisted by all means including the threat to life. An attempt to report such threat from colleague to kinsmen and some higher authorities may be met with mockery comments and removal from office in some instances as you are awkward, a mismatch and anti-progress.

The increasing sophistication of financial fraud requires that forensic accounting be added to the tools necessary to bring about the successful investigation and prosecution of those individuals involved in criminal activities. Forensic accounting arises from the effect and cause of fraud and technical error made by humans. Forensic accounting is quite new in Nigeria as organizations have realized that the service of a forensic accountant is needed as fraud cases have substantially increased in number. Forensic accounting is the application of financial skills and investigative mentality to unsettled issues, conducted within the context of the rules of evidence. Sarkar, (2010) assert that forensic accounting as a discipline encompasses fraud knowledge, financial expertise, and a sound knowledge and understanding of business reality and the working of the legal system. Forensic accounting may be one of the most effective and efficient ways to decrease and check accounting fraud. Presently, forensic accounting is gaining popularity worldwide. It is been taught as a major course in many educational institutions in various countries.

The general expectation is that forensic accounting may offer some respite to the seeming vulnerability of conventional accounting and audit systems to financial fraud. Consequently, the incorporation of modern forensic auditing techniques in audit in Nigeria is seen as a time to prepare the accounting profession to deal effectively with the problem of unearthing ingenious fraud schemes arising from audit failure to detect frauds in Nigeria.

To respond to the public demand to card corruption and fraudulent practices that gave birth to forensic accounting, hence study is to critically ascertain the contributions of forensic accounting to fraud detention and control in Nigeria.

In modern time accounting professional has been battling with what they consider as the professional rose in terms of accounting and auditing and what the public generally feel and expect from them. This is commonly referred to as the audit expectation gap. It is in the face of the challenges of expectation gap that brought to the front boner issues bordering on forensic accounting and auditing. These two emerging seems twin in the accounting profession focus on solving some challenges in the system; an area of fraud detection, investigation, remediation and litigation support services. Forensic accounting relates to the application of financial facts to legal problems, it includes any financial investigation that can result in Legal consequences expected.

The objective of this study is to: Ascertain the contributions of forensic accounting in fraud detection in Nigerian Public Sector, to evaluate the contributions of forensic accounting in fraud investigation in Nigerian Public Sector and establish the contributions of forensic accounting in the provision of litigation support services in Nigerian Public Sector.

What is the effect of the use of forensic accounting services in detecting fraud in the Nigerian ministries? Does a significant relationship exist between forensic accounting and litigation support

services in the Nigerian courts? What is the effect of forensic accounting services in preventing fraud in the Nigerian ministries?

Hypotheses

The researcher proposed the following null hypothesis:

Ho1: The use of forensic accounting services in ministries is not effective in detecting fraud Management.

Ho2: There is no significant correlation between forensic accounting and legal action support services in Nigerian courts.

Ho3: Use of forensic accounting services is not effective in preventing fraud in Management.

Review of Related Literature

Conceptual Review

Forensic Accounting

Forensic accounting is the use of laws of nature to the laws of man. This is normally carried out by forensic scientists as interpreters and examiners of facts and evidence in the legal case that also gives expert opinions concerning their findings in a court of law. Fyneface and Oseiweh (2017) affirm that forensic accounting is the essential investigative device for the detection of fraud. Mukoro, Yamusa and Faboyede (2013) opined that forensic accounting helps in introducing useful internal control and fraud prevention in an organization. He also described forensic accounting as a mixture of auditing and investigation skills. Al Samara, Al-Afeef and Al Ali (2017) define forensic accounting as the use of criminal methods and incorporation of investigative accounting issues and law processes to investigate and detect financial crimes and other economic malpractices.

Fraud Detection

Okafor, (2004) reported that fraud is a generic term and embraces all the multifarious means which human ingenuity can devise, and resorted to by an individual to get the advantage over another in false representation. According to Anyanwu, (1993), fraud is an act or course of deception, deliberately practised to gain unlawful or unfair advantage; at the detriment of another. Karwai, (2002); Ajie and Ezi, (2002); Anyanwu, (1993); Okafor, (2004) and Adeniji, (2004) Summarize the types of fraud based on methods of perpetration which includes the following but not exhaustive: defalcation, suppression, outright theft and embezzlement, tampering with reserves, inside abuses and forgeries, fraudulent substitutions, unauthorized lending, lending to ghost borrowers, kite flying and cross-firing, unofficial borrowing, impersonation, fake payment, fraudulent use of the firm's documents, fictitious accounts, false proceeds of collection, manipulation of vouchers, dry posting, over-invoicing, inflation of statistical data, ledger accounts manipulation, fictitious contracts, duplication cheque books, computer fraud, misuse of suspense accounts, false declaration of cash shortages etc. It has been analyzed that three components come to bear when committing fraud. These components which are pressure, opportunity and justification constitute the fraud triangle.

Forensic Accountant and Fraud Detection

A professional forensic accountant as an investigator is seen as is expert in fraud detection, especially in accurately documenting the types of support needed for a satisfactory criminal prosecution. In addition, he should be able to work in a challenging regulatory and litigation atmosphere, Claire &

Jude, (2016). Forensic Accountant is thus expected to work with reasonable accuracy and be able to reconstruct the destroyed, missing or deceptive accounting records.

Forensic Accountant and Fraud Prevention

Fraud Prevention entails the formation of attitudes of honesty, sincerity and assistance to ensure elimination or drastic reduction in the level of fraud occurrence. Enofe, Omagbon and Ehigiator (2015) noted that one major way to victorious fraud deterrence is to focus on the organization's traditions and adopt strategies to make it a fraud-free or low fraud atmosphere. This can be accomplished by identifying the root causes, blocking the loopholes identifying the lacuna being exploited by the perpetrators and above all workers' welfare must be taken care of properly.

Theoretical Framework

Pearson's Statistical Technique Theory

Fraud or misrepresentation often creates patterns of error within complex financial data. The discipline of statistics has developed sophisticated techniques and well-accepted tools for uncovering these patterns and demonstrating that they are the result of deliberate malfeasance. Statistical theory for forensic accounting is the first comprehensive guide to these tools and techniques; understanding their mathematical underpinnings, using them properly and effectively communicating findings to non-experts. Forensic accounting is the application of investigative and analytical skills to resolve financial issues in a manner that meets the standards required by courts of law. Fraud examination is the process used to resolve allegations of fraud through the accumulation of evidence, including the investigation of systems and internal controls and the detection of fraud circumstances.

Fraud Triangle Theory

This theory is credited to American Criminologist, Donald Cresset (2018). The fraud triangle is what the forensic accountant relies on to identify suspected fraud, the causes and the weakness in the system that prompted the fraud. Based on the fraud triangle concept, the three factors that cumulate into the triangle are; pressure, opportunity and Opportunity Employees use their position to commit fraud when internal controls are weak, or where there is poor management oversight on internal control Implementation. Most employees who commit fraud do so because they have the opportunity to access Assets and information that allows them to obscure their fraudulent deeds. Employees indeed need access to a certain platform to perform their jobs. The same access can provide the employees with the opportunity to commit fraud. Pressure/Incentive-Pressure can make a staff commit fraud. Pressure does not only mean financial pressure. Sarkar, (2010), states that there are three types of motivation or pressure; personal pressure to pay for lifestyle, employment pressure from continuous compensation structures, or management's financial interest, and external pressure such as threats to the Business Financial stability, financial covenants, and market expectations.

Empirical Review

Popoola, Che-Ahmad and Samsudin (2014) agreed with the findings of the above study conducted by Adams, Umar, Samsudin and Mohamed (2016) added to the major control mechanisms, specifical office of the Auditor General of the Federation, and the public accounts committee. This indicates that the government particularly in Nigeria has put up remarkable standards and financial regulations to avert various forms of fraud such as embezzlement of assets and other resources as well as irregularities, and other financial manipulations.

Akkeren and Tarr (2014) employed Chi-square in their study and used a statistics package for social science to empirically appraise forensic accounting as a remedy to economic and financial crimes in the Nigerian ministries. By testing four hypotheses, their study showed that forensic accounting is a financial strategy used in detecting and preventing economic and financial misappropriation in the Nigerian economy. Adebisi, Matthew and Emmanuel (2016) used mean and standard deviation in assessing forensic accountants' ability to plan fraud detection procedures. They also employed multivariate analysis of variance and analysis of variance ANOVA to evaluate their study with that of Agbiboa (2012).

Onodi, Okafor & Onyali (2015), examined the effect of forensic investigation methods incorporating fraud deterrence in Nigerian Banks. This study adopted a survey research design and data from the primary source were collected through interviews and administration of questionnaires, while the secondary source consists of reports on fraud and forgery in the banking sector. Statistical tools used to analyze the data include percentages, mean scores, frequency tables, regression analysis and Z- test. The result revealed that there is a significant relationship between forensic investigative methods and corporate fraud deterrence. The finding revealed that expert services of forensic investigators are normally required in the prosecution of fraud, but the majority of the audit and accounting personnel in Nigeria are suffering from poor perception and knowledge of forensic investigative methods.

Akhidime and Uagbala-Ekatah (2014), in their exploration of the growing relevance of forensic accounting in Nigeria, found that though forensic accounting in Nigeria has helped fraud detection, it is lacking statutory backup. Hence, it has no significant impact in tackling corruption in Nigeria.

Zachariah, Masoyi, Ernest and Gabriel (2014), work on the topic titled "application of forensic auditing in reducing fraud cases in Nigeria money deposit Banks". The study analyzed the trend in fraud cases from 2001-2012, included are the amounts involved in fraud, the most frequent types of fraud, and the losses sustained by Banks. The descriptive analysis revealed that there are up and down movements in fraud cases. Since Banks continually lose huge sums of money as a result of the inability of the auditors and the supervisory regulators to curtail the trend, there is therefore the need to devise different means of tackling frauds in the Banks. According to the authors, Nigerian Banks over the past decades had suffered from the menace of fraud which resulted in distresses and liquidation which hamper the roles of Banks in the economy. The study, therefore, suggested the employment of forensic auditing in Nigerian Banks by amending the existing status, in such a way that forensic auditors are included in the audit team.

Suleiman and Othman (2016) disclose that forensic accountants are required in the Nigerian banking sector; Forensic accounting is a useful tool for curbing financial offences in the banking system.

Methodology

In conducting this study, a survey design was adopted and a selection of ten (10) most active ministries which include the ministry of works, ministry of finance budget and national planning, ministry of health, ministry of humanitarian affairs and disaster management, ministry of education, ministry of transportation, ministry of agriculture, ministry of aviation, ministry of information and ministry of communication and digital economy. A sample size of one hundred (100) respondents was selected using a random selection of five (5) experts from each ministry which comprises auditors and accountants from the ten (10) ministries selected from FCT Abuja. The data for the study were gathered from primary sources, using a structured questionnaire that was administered to respondents to generate data from the selected ministries. All the questionnaires administered were properly filled out and returned.

Data Analysis and Interpretation

Table collected from the retrieved copies of the questionnaire were carefully analyzed using Analysis of Variance (ANOVA). The selection of ANOVA in this research is because it shows the degree of variance in dependent variables caused by the independent variables. Furthermore, ANOVA is used in measuring the variation in more than two distinct samples drawn from the population with the same variance. The decision Rule of this study indicates that the null hypothesis should be supported if the calculated value off-ratio is higher than the critical value of f. i.e. (ft-1, N-t). Otherwise, it will be not be supported.

Test of Hypotheses

Ho1: The use of forensic accounting services in ministries is not effective in detecting fraud in Ministries.

Table 1: Response on the effectiveness of forensic accounting in detecting fraud

Variables	**Question 1**	**Question 2**	**Question 3**	**Total**
Agree	8	15	11	34
Strongly agree	35	29	24	88
Disagree	6	3	7	16
Strongly disagree	1	3	8	12
Total	50	50	50	150

Source: Field work, 2022

Responses Generated from the Questionnaire

In an attempt to answer research question one, the findings of questions 1, 2 and 3 in the questionnaire indicate that hypothesis one responses of 34, 88, 16 and 12 were recorded as agree, strongly agree, Disagree and strongly agree respectively. This showed that the use of forensic accounts in Nigerian ministries is effective in fraud detection. This finding is under the findings of Ozuomba, Ofor and Okoye (2016) and Umar, Samsudin and Mohamed (2015)

Table 2. ANOVA Summary.

Source	Sum of square	Degree of freedom	Mean square	F-ratio
Between	1513	3	501.3	27:14
Within	140	8	15.875	
Total	1653	11		

Source: Field work, 2022

The critical value of 5% significance level land a degree of freedom 3 to 8 is 4.07.

Decision Rule

Given the F-ratio calculated value of 27.14, which is higher than the critical value of 4.07, the null hypothesis is rejected while the alternative hypothesis is accepted. Thus, the use of forensic accounting services is useful in fraud detection in the public sector.

Ho2: There is no significant correlation between forensic accounting and legal action support services in Nigerian courts.

Table 3: Response on the correlation between forensic accounting and legal action support service

Variables	Question 4	Question 5	Question 6	Total
Agree	10	9	8	27
Strongly agree	35	37	30	102
Disagree	5	4	6	15
Strongly disagree	0	0	6	6
Total	50	50	50	150

Source: Field work, 2022

Responses Generated from the Questionnaire

In an attempt to answer research question one, the findings of questions 2, 6 and 10 in the questionnaire indicate that responses of 27, 102, 16 and 5 were recorded as agreeing, strongly agree, disagree and strongly agree respectively. This showed that a significant correlation exists between forensic accounting and proceedings support services in Nigerian courts. Agbiboa (2012) and Idris (2017), have similar findings in their studies.

Table 4. ANOVA Summary

Source	Sum of square	Degree of freedom	Mean square	F-ratio
Between	1770	4	588.33	27:14
Within	48	5	7.63	
Total	1818	9		

Source: Field work, 2022

Critical value 5% significant level and a degree of freedom 3 to 6 is 4.76

Decision Rule

Given the F-ratio calculated value of 27.14 which is higher than the critical value of 4.76, the null hypothesis is rejected while the alternative hypothesis is accepted. Thus, a significant correlation exists between forensic accounting and legal action support services in Nigerian courts.

Ho3: Use of forensic accounting services is not effective in preventing fraud in Ministries.

Table 5: Response on the effectiveness of forensic accounting service effective in preventing fraud

Variables	Question 7	Question 8	Question 9	Total
Agree	10	13	9	32
Strongly agree	31	30	29	90
Disagree	6	5	6	18
Strongly disagree	3	2	6	11
Total	50	50	50	150

Source: Field work, 2022

Responses Generated from the Questionnaire

In an attempt to answer research question one, the findings of questions 5, 7 and 9 in the questionnaire indicate that responses of 30, 94, 16 and 10 were recorded as agreeing, strongly agree, disagree and strongly agree respectively. This showed that the use of forensic accounting is useful in fraud avoidance in the Nigerian ministries. This is under the findings of Modugu and Anyaduba (2013) and Umar, Samsudin and Mohamed (2016).

Table 6: Anova Summary

Source	Sum of square	Degree of freedom	Mean square	F-ratio
Between	1773	3	591.33	27.16
Within	45	6	7.33	
Total	1818	9		

Source: Field work, 2022

Critical value at 5% significance level and a degree of freedom 3 to 7 are 4.35.

Decision Rule

Given the F-ratio calculated value of 27.16, is higher than the critical value of 4.35, the null hypothesis is rejected while the alternative hypothesis is accepted. Consequently, it can, therefore, be concluded that the use of forensic accounting in ministries is useful in the prevention of fraud in Nigeria.

Discussion of Findings

Based on the analysis of the result, it was revealed that forensic accounting has a significant relationship with financial fraud control. The finding conforms to the works of scholars who posit that forensic accounting is the application of financial skills and investigative mentality to unsettled issues also revealed that forensic accounting has a positive impact on reporting quality. It conforms to the works of Gray (2008) who posit that forensic accounting may be one of the most effective and efficient ways to decrease and check accounting fraud. The finding revealed that forensic accounting has a positive effect on internal control.

Challenges of Forensic Accounting Application in Nigeria

Enyi, (2009) undertook a study to offer suggestions using real case problems on how to apply forensic accounting in investigating variances and suspected fraudulent activities in manufacturing processes and thus suggests that the application of forensic accounting applies to all scenes where fraud is a possibility. Crumbley (2001), Grippo and Ibex (2003), reveal the following challenges confronting the application of forensic accounting.

1. A significant challenge that faces a forensic accountant is the task of gathering information that is admissible in a court of law.
2. The admissibility of evidence in compliance with the laws of evidence is crucial to successful prosecutions of criminal and civil claims
3. Globalization of the economy and the fact that a fraudster can be based anywhere in the world has led to the problem of inter-jurisdiction.

Importance of A Forensic Accountant

The importance of forensic accountants can be clearly understood from the context of failure in statutory audits to detect and prevent fraud as summarized by Owojori and Asaolu (2009). A forensic accountant can be relevant in the following ways:

i. Assist Police Force in Investigation: A forensic accountant engages himself in a criminal investigation on behalf of the police force, Eiya and Otalor, (2013), where his report is prepared with the objective of presenting evidence professionally and concisely.

ii. Improve Management Accountability: Ramaswany (2009) states that failure of corporate communication structure has made the financial community realize that there is a great need for skilled professionals that can identify, expose and prevent weaknesses in three key areas:

poor corporate governance, flawed internal controls, and fraudulent financial statement. Forensic accounting skills are becoming increasingly relied upon within a corporate reporting system that emphasizes its accountability to stakeholders. From the above statement, a forensic accountant with his expert knowledge in crime will help to improve corporate reporting system designed by management which will expose and prevent poor governance, flawed internal control and fraudulent financial statement.

Implication, Conclusion and Recommendations

Implication

This study is on forensic accounting and fraud detection in Nigeria. The objective of this study is to ascertain the contributions of forensic accounting in fraud detection in Nigerian Public Sector, to evaluate the contributions of forensic accounting in fraud investigation in Nigerian Public Sector and establish the contributions of forensic accounting in the provision of litigation support services in Nigerian Public Sector. Against the above backdrop, the following findings were made:

i. Forensic accounting significantly affects fraud control and regulation in Nigeria
ii. It is an effective and efficient way to decrease and check accounting fraud.
iii. Forensic accounting has a positive effect on internal control of fraud

Conclusion

Forensic accounting being a contemporary area in accounting has an essential position in protecting the Nigerian public sector against economic and financial irregularities. This study disclosed that forensic accounting merges auditing, accounting and investigating skills in identifying, averting and delivering convincing facts being used against the prosecutors in the courts. Similarly, the study disclosed that misappropriations being committed by ministries' staff and political offices holders can be prevented or reduced through the roles of forensic accountants. Forensic accountants also required forensic accounting skills that make them significantly assist in the economic development and protecting the image of the Nigerian public sector.

Recommendations

Given these findings, it is thus, recommends that the Nigerian public sector should originate good financial policies capable of attracting citizens with good moral character as an employee, public office holders, administrators, legal practitioners etc.

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Forensic Accounting and Fraud Control in Nigeria: A Critical Review

Abstract
Fraud control in Nigeria has been a very difficult issue in Nigerian public sector and seems to have been institutionalized in the country owing to many years and increasing cases of fraudulent activities by public office holders. The recent wave of the use of forensic accounting/auditing in Nigeria have attracted wide acceptance as possible panacea to the menace of fraud in Nigerian public sector. To this end, the study critically reviewed the application of forensic accounting in fraud detection, investigation and litigation support services. The study adopted descriptive research design with extensive and intensive literature review. It was concluded that the emergence/ introduction of forensic accounting contributes significantly in fraud control however, it seems not to be a complete panacea for fraud issues in Nigeria. The study recommends amongst others that fraud detection should be enshrined as part of auditors work by the policy makers so that non detection of fraud would attract sanctions to the auditor concerned. Also, training and retraining of forensic accountants on court process to avoid loss of good cases to avoidable court technicalities.
Keywords: Forensic Accounting, Fraud detection, fraud investigation, litigation support, Public Sector

1. Introduction

Historically accounting is as old as man when God after creation, took account of what He created and saw that it was good. He subsequently place man in charge of the created and man was expected to give account of his stewardship. Furthermore, as economic activities of man increased oral reports were usually subjected to interrogation to ascertain the correctness of the report to the owners of the business. As business becomes complex and record keeping developed, auditing evolved along-side with it.

Some forensic accounting experts traced fraud history to the ancient Egypt in respect of those who took inventory of Pharoah's valuables like grains and gold. Embezzlements and bribes then were very minimal and punishment for culprits very harsh. Archaeological findings in Mesopotamia and Egypt in 3300 B.C and 3500 B.C respectively showed evidence suggestive that accountants/scribes recorded economic transactions using clay tables of papyrus scrolls. Any suspicion of tampering with the record would result in the original one being enfolded and wrong doings fined and serious cases of mutilation might attract death (Oyedokun, 2012 and Zysman, 2004).

Furthermore, Oyedokun (2019) added that evidence of forensic accounting were also found in India between 321 B.C. and 184 B.C. in which 40 crimes were considered embezzlement with punishment for those found culpable. Also, they added that accounting historians were able to have reference to at least three cases between 16^{th} and 18^{th} centuries where individuals responsible for accounting records provided evidence as expert witness in Europe and Britain.

These days, forensic accounting has developed in that we have Association of Forensic Accounting Researchers (AFAR) who certify members in various areas in forensic accounting like Certified Forensic Accountants (CFAt), Certified Forensic Auditor (CFAr), Certified Forensic Investigators (CFI) and so on.

Fraud is so pervasive in Nigeria in that it is becoming a way of life. Hope and Chikuloas in Osisioma (2012) averred that corruption is rare in Botswana, widespread in Ghana and systemic in Nigeria. For fraud to be systemic in Nigeria, it implies that fraud in Nigeria is an industry; which means it has stakeholders, investors and risk-return profile. The fraud industry is organised, with internal coordination, shared knowledge and share of benefits linking principals and agents and shares reward among the stakeholders. The system on its own grows practitioners at every level, from school to graduation, from childhood to adulthood, from micro to macro levels; thus there is sustained supply of individuals which ensure that fraud is maintained in perpetuity. People actually expecting leaders to be corrupt, with anything short of that as being too good to be true, as such persons are considered fools. The system actively discourages people with integrity and character, with high price tag for public office, for men of character-sacrifice of personal integrity. In the system, leaders were not held accountable, with ethnic and sectoral loyalty overriding character and competence.

In the light of the above, fraudulent activities has become institutionalized in that it has become a way of life and one is expected to be 'corrupt' in line with what is now the 'norm'. For instance refusal to receive gratification in public service would be viewed as abnormal and frowned at by friends and associates and where your position would prevent possible beneficiaries from getting their own share, it would be resisted by all means including threat to life. An attempt to report such threat from colleague to kinsmen and some higher authorities may be met with mockery comments and removal from office in some instances as you are awkward, a mismatch and anti-progress.

Public sector organisations are not privately owned as such are established for public good. They provide services at nil cost or subsidized prices. They operate public utilities, regulatory organisations and sometimes as a commercial enterprise. Performance evaluation in public sector is hindered by lack of profit motive and presence of intangible services whose benefits are difficult to quantify (Adams, 2006). Being publicly owned implies that those in authority are managing the organisation on behalf of the citizens and handle their assets in thrust. The above, breed in some quarters, that it is nobody's business, as such a fertile ground for fraud and corrupt practices. Various measures have been put in place to control and regulate the activities of these organisations through laid down policies and procedures as well as some Acts (laws). It is in the response to the public demand to curb corruption and fraudulent practices that gave birth to forensic accounting, hence the study to critically ascertain the contribution of forensic accounting to fraud control in Nigerian public sector.

2. Statement of the Problem

In the modern time, accounting profession has been battling with what they considered as their professional requirements (roles) in terms of accounting and auditing and what the public generally feel and expected from them. This is commonly refered to as audit 'Expectation Gap'. It is in the face of the challenges of expectation gap that brought to the front burner issues bordering on forensic accounting cum auditing. These two emerging seamis twin in the accounting profession focus on solving some challenges in the system; in area of fraud detection, investigation, remediation and litigation support services. Forensic accounting and auditing were tailored towards presentation of evidence admissible in court. Forensic accounting relates to application of financial facts to legal problems. It includes any financial investigation that can result in legal consequences. Expectedly, forensic accounting should be able to tame the tide of fraudulent practices through fraud detection, fraud investigation, litigation support services and fraud remediation.

However, the situation in Nigeria is so pathetic such that the rate and volume of fraudulent activities were very high such that in 2019 Corruption Perceptions Index (CPI), Nigeria scored 26 percent, clinching 146th position out of 180 countries sampled. In Nigeria, there have been some high level corruption cases like the over 8.5bn naira alleged no remittance of recovered fund by Economic and Financial Crime Commission (EFCC) leadership, the alleged diverted 1.9bn naira Ebola fight fund, the $20bn NNPC case, the famous 'Arm Scam Deal' of $2bn of 2015 and N5.5bn Niger Delta Development Commission (NDDC), 2020, contract scam involving Signora Concept Services LTD amongst others.

Most of the suspected cases have not been fully investigated or prosecuted to a logical conclusion such that there have been questions as to what might have been the causes, among which is suspected lack of adequate evidences for diligent prosecution. The financial evidences were expected to come from financial experts like the forensic accountants. It is in the light of the above that the study critically evaluated the contributions of forensic accounting towards fraud control in Nigeria especially in the public sector.

2.1 Objectives of the Study

The study evaluated the contribution of forensic accounting in fraud control in Nigeria. In specific term it sought to

1. Ascertain the contributions of forensic accounting in fraud detection in Nigerian Public Sector.
2. Evaluate the contributions of forensic accounting in fraud investigation in Nigerian Public Sector.
3. Establish the contributions of forensic accounting in the provision of litigation support services in Nigerian Public Sector.

2.2.Research Questions

The research battled for answer to such questions as

1 What are the contributions of forensic accounting towards fraud detection in Nigerian Public Sector.

2 How does forensic accounting help in fraud investigation in public sector in Nigerian.

3 To what extent does forensic accounting provide ligation support services in Nigerian Public Sector.

3.0 Review of Related Previous Works

The concept of forensic accounting and fraud were reviewed, as well as, literatures on forensic accounting and fraud detection and investigation, in addition to, literatures on forensic accounting and litigation support services. Theoretical base of the work was equally explored plus empirical review.

3.1 Concept of Forensic Accounting

Forensic accounting has been defined by Association of Certified Fraud Examiners (ACFE) (2019) as the use of accounting skills in matters involving potential or actual civil or criminal litigation, covering amongst other areas, generally accepted accounting and auditing principles; lost profit determination, income, asset or damages; internal control evaluation; fraud and any other matter requiring accounting expertise in legal system. Furthermore, Howard and Sheetz (2006) in Oyedokun (2019) see forensic accounting as a process of interpreting, summarizing and presenting complex financial issues clearly, succinctly and factually often in a court of law as an expert. Similar definition was given by Hopwood, Leiner and Young (2008), in which they argued that forensic accounting is the application and analytical skills for resolving financial issues in a manner that meets court standard. Webster's Dictionary (2000) sates that forensic accounting provides an accounting analysis that is suitable to the court which will form the basis for discussion, debate and ultimately dispute resolution. It added that forensic accounting encompasses litigation support and investigative accounting.

The study, therefore, defines forensic accounting as the process of applying auditing and investigative techniques in obtaining evidences relating to financial matters in a manner suitable for adjudication in the court. The process provides the basis for conviction or otherwise of suspected fraud cases.

These imply that Forensic Accountant utilizes accounting, auditing and investigative skills when conducting an investigation. They communicate financial information clearly and concisely in a courtroom setting. By their training, they look beyond the numbers while ordinary accountants look at the numbers. In view of the afro said, there is no clear division between the term forensic accounting and forensic auditing. In carrying out the work, forensic accounting is sufficiently thorough and complete so that an accountant in his independent judgment can deliver a finding as to accounts, inventories or the presentation thereof that is of such quality that it would be sustainable in some adversarial legal proceeding, or within some judicial or administrative review (Okoye, Maimako, Jugu & Jat, 2017).

In view of demands from accountants and the environment of operation, Okoye et al (2017) argued that since all professional accountants operate within a commercial legal environment, all professional accountants are in a sense, forensic accountants stressing that what distinguishes a forensic accounting in common parlance are the engagement. They went further to contend that when the accountant expects that their findings or analysis may be subjected to adversarial or judicial scrutiny or administrative review, he seeks a level of evidentiary details and analytical precision which would be sustainable within the legal framework of such scrutiny or review. The implication of the above assertion is that the nature of work and possibility of subjection to further analysis determines the details required. Therefore, the ability of the professional accountant both in training and experience, guides him in his acceptance or otherwise of his engagement(s).

3.2 Concept of Fraud

Fraud according to Meigs, Larsan and Meigs (1977) is the misrepresentation by a person of a material fact, known by that person to be untrue or made with reckless indifference as to whether the fact is true, with the intention of deceiving the other party and with the result that the other party is injured. Similarly, Udeh and Ugwu (2018), define fraud as intentional misstatement of facts (falsification or fabrication) with the intention to benefit or conceal shoddy deals such that reliance on the information may be misleading resulting eventually in loss to users.

3.3 Forensic Accounting and Fraud Detection and Investigation

Whenever there is irregularity, errors or misstatement, it arouses curiosity as to the correctness or otherwise of the financial report. In such situation, the auditor conducts an investigation to ascertain whether there is fraud or error. The word 'investigation' is derived from Latin word *vestigere* which means to 'track or trace'. It involves systematic inquiry comprising processes or procedures resulting in successful planning and execution of appropriate line of inquiry to obtain evidence required to obtain factual basis of the matter concerned.

For successful conduct of the investigation in financial crime, one should realize that they are filled with complexity and they are by nature information intensive. Okafor (2006) states that you have to approach investigation of financial crime by: getting organised and the process of proof. In getting organised, you have to bear in mind that it is an extension of legal process. As a result the investigator should think like a lawyer from the ground up so as to build a strong case, as we know, a lawyer has to prove a case beyond reasonable doubt. These acts are defined with relative clarity, by codified laws and legal precedence. Thus, there should be massive audit evidence and the audit has to be carried out within the confines of relevant law and withstand legal scrutiny. The process of proof involves getting relevant evidence and inferences. An evidence is relevant if it tends either to prove or disprove the issue in contention. Inference relies on chain of logic that must be forged one link at a time. The inference on which guilt is based must be linked together in a logical, linear way and conform to a narrow frame work of rigorously enforced rules. In effect, to fully understand how to build a chain of logic, the investigator must grasp with the logic underpinning legal arguments. The most common two were the deductive argument (this works from general to specific) and inductive argument (from series of observation to reach at conclusion).

Furthermore, the investigator must think like both a thief and a detective, as such, must be constantly looking for the weak links in accounting system and among the people who staff it. In the conduct of the investigation, he must be prepared to reach far beyond the company's books, to industry and government information, proprietary data bases, court records and any other source that might throw light on the case.

It is worthy of note that the accounting professional plays two important roles in any forensic investigation: as lead financial investigator and potential expert witness in any subsequent civil or criminal trial. As lead investigator, he understands the internal control and know how to trace the flow of funds into, through and out of the organisation. They are in position to provide an independent, objective critique of the corporate organisation not only in the problems in the accounting system that permit the fraud to occur but also address the integrity of the people at the heart of the process. As expert witness, the professional knows the rules of evidence, what documents to request, whom they should interview and in civil case, how to do damage quantification arising out of the situation.

Businesses and public sector organisations could be victim of both internal and external fraud and also a combination of the two. Internal frauds are usually perpetrated by the employees while external frauds are deception committed by outsider against the organisation. In some cases, an employee may collude with an outsider to defraud the organisation. There is also management fraud committed by senior personnel who can override controls to prevent fraud. It is serious as management fraud set up negative model for employees below the orgainsation ladder. Conversely, we have corporate fraud in which the senior management commits fraud that benefit the organisation examples are tax evasion, production of unsafe products, financial statement fraud, false advertisement and environmental crimes. Fraud could take one of two forms: defalcations and manipulations (Aguolu, 2018). Defalcation involves stealing cash, stock or other assets while manipulation without defalcation involves inflating assets or omitting liabilities. Usually, defalcation goes with manipulation.

In audit for fraud, the pattern to look for are the exceptions and oddities, that is, things that do not fit in organised scheme because they are too large, too small, too frequent, too rare, too high, too low, too ordinary, too extra ordinary, too many or too few or feature odd times, odd places, odd hour, odd people and odd combination. Thus, one looks for the unusual rather than the usual (Okoye, 2006). Therefore, for complete assessment of fraud data that precedes or follows a questionable transaction should be available. This implies that one goes behind and beyond those transactions to reconstruct what may have led to them and what has followed from them.

Fraud detection Methods

Primary ways to detect fraud includes

- By Accident
- By installing hot lines and whistle bowing system that encourage employees and other people to report suspected cases of fraud
- Examining transaction records, accounts and documents and other abnormality that might indicate fraud.

Fraud Investigation Steps

Five steps approach to forensic accounting according to Singleton, Singleton, Bologna and Lindquist (2006). The steps include:

a. Predication: that is a set of circumstances that convince reasonable , prudent and professional trained individual that fraud has occurred, is occurring or is about to occur.
b. Fraud investigation plan: based on forensic auditors knowledge and analysis of fraud scheme and the red flags associated with them.
c. Examination of records and evidence gathering: to confirm or otherwise of the fraud, accounting, and transaction documents, as well as, other data are examined.
d. Interview process: eye witness and later, the suspect are interviewed.
e. Report writing: the report is written and submitted to the person who engaged the forensic auditor. The report should be clearly and carefully worded bearing in mind that should the case be brought to court, it would be relied upon for judgement.

Nigeria has been engaging forensic auditors in its public sector. For instances, forensic auditors were appointed and audited the Nigeria National Petroleum Corporation (NNPC) by Price Water Coopers (PWC) with report of over 46 percent of revenue spent on operational cost and subsidies. The report is also suggestive that NNPC would be unable to sustain monthly remittances to the Federation Account Allocation Committee (FAAC), and also meet its operational costs entirely from the proceeds of domestic crude oil revenues, and have had to incur third party liabilities to bridge the funding gap, amongst others. Furthermore, in Vanguard (2020, August 26) it was reported that federal government appointed forensic auditors for comprehensive audit of Niger Delta Development Commission (NDDC) following EFCC report of suspected fraud in the organisation.

Some empirical works were reviewed to ascertain the findings of some scholars who have carried out research in this area of interest. For instances:

Adekoya, Oyebamiji and Lawal (2020) explored the use of forensic accounting in the control of tax fraud and tax evasion. Using exploratory research design, the study concluded that traditional auditing has failed in curbing tax fraud and tax evasion and that forensic accounting would expose, control and deter fraudulent practice on tax revenue. In a similar study, Adesina, Erin, Ajetunmobi, Ilogho and Asiriuwa (2020) sought to ascertain whether forensic audit influence fraud control in Nigeria with evidence from Nigeria Deposit Money Banks (DMBs). Survey research design was adopted for the study. Ordinary Least Square analysis of data collected revealed that involvement of qualified and experienced forensic auditors would not only help in ameliorating frauds in DMBs but would also lead to sanity in the banking sector.

In their study, Agu and Okoye (2019) evaluated the application of forensic accounting as a means of bridging audit expectation gap in Nigerian deposit money banks in Enugu state. Data collected from the survey study were analysed using Pearson Product Moment Correlation. Finding suggested a significant relationship between forensic investigation and expectation gap.

Coversly the study of Bassey and Ahonkhai (2017), on the effect of forensic accounting on litigation support on fraud detection in banks in Nigeria, using questionnaire for data collection and ANOVA for data analysis revealed that they do not have significant effect on fraud detection. However, Fiergbor, (2020) evaluated managing projects using forensic accounting in detection and prevention of fraud in Ghana. Qualitative analysis revealed that irrespective of the nature of the fraud, forensic accounting could control it.

Relevance of forensic accounting: issues in accounting and auditing practice in Nigeria was examined by Ejike (2018), in which he adopted interview and questionnaire survey methods. Result of data analyses using simple percentage and t-test were suggestive that forensic services were required in curbing fraudulent practices in Nigeria.

Gbegi and Adebisi(2014) investigated the application of forensic accounting skills and techniques in fraud investigation in the Nigerian public sector. Primary data were collected by the use of questionnaire and secondary data from EFCC, ICPC and CCB were analysed using ANOVA. One of the findings is that forensic accounting skills and techniques have significant effect on uncovering and reducing fraud in Nigerian public sector. Similarly, Okoye, Adeniyi and James (2019), reviewed effect of forensic accounting and fraud management on selected firms in Nigeria. Data collected using questionnaire were analysed using descriptive statistics and hypotheses tested by means of regression. It revealed that forensic accounting significantly influence fraud detection and prevention.

In another study, Onubiko Nwankwo and Achara (2019), examined the extent forencsic accounting has effect on fraud management of organisations in Nigeria. Primary and secondary data for the study were analysed using Semantic Differential Scale to establish the significance of the hypothesis. Result showed significant correlation between fraud detection, reduction, and prevention engendered by forensic accounting and good management practices.

3.4. Forensic accounting and Litigation Support Services

This could be approached through providing evidence and testifying as expert witness in the court for effective prosecution and judgement, as well as, determination of appropriate compensation (remediation) to victims of fraudulent acts. It involves interpretation, organising and presentation of facts systematically and scrupulously for effective adjudication in the court.

3.5 Theoretical Review

The Anomie Theory

The theory is associated with Merton and Chinoy (1957). The theory tends to explain the pressure the society exert on members that lead to anti-social behaviours including fraud/corruption. They argue that the society set goals for individuals and groups and also prescribes the means of attaining them. Some individual resources were not enough to attain the expectation of the society, this brings about corrupt and unethical behaviours. The society also send messages of what is normal and acceptable behaviour to individuals through societal institutions. 'Normal' is that which is psychologically acceptable and sometimes, culturally approved. However, pressure from the society might compel most individuals to engage in unethical behaviours like fraud/corruption. Merton therefore, asserts that criminal behaviours are functions of emphasis on goal of accumulation of wealth with a great disconnect with the goal value of the society and the means available to achieving the goal (Murphy & Robinson, 2008).

The above is appropriate for the study as Nigerian society emphasizes goal attainment without any recourse to the legitimate means of attaining the goal. Individuals who are economically buoyant are hailed and held in high esteem in the society not-withstanding the means of his accomplishing it. This value system breeds various forms of corrupt practices like bribery, embezzlement, examination malpractices, fraud etc.

4. Methodology

The study adopted descriptive research design. Information regarding the study were gathered from published and unpublished sources hence it was extensive and intensive. Careful review of relevant journals, articles, books, workshop documents etc were done to explore the topic. From the works read, conclusion was made.

5. Discussion

The visit of forensic auditors to an organisation does not only help in fraud investigation and litigation support but also in fraud prevention through its spin-off effect. Attentions of forensic auditors are usually attracted to the unusual, which arouse their curiosity to conduct detailed investigation on the matter(s) concerned. In the investigation, everything is important as not-withstanding how minor or immaterial it may appear, it may be a clue to existence of big fraud. This implies that in forensic accounting/auditing, all evidences are considered material and fully investigated. The difference between auditors and forensic auditors is on the degree of thorough and painstaking approach to audit process. Today, as it was in the case of auditors before, the mention of the coming of forensic auditors to an organisation is received with panic and fright with scrupulous cleansing of records.

The effectiveness of the forensic accountants in filling the audit expectation gap seems not to be in doubt to most scholars but the system we operate tends to stifles' the output viz:

a. Low risk-high benefit theory i.e plea-bargaining: EFCC Act Section 14(2) provides option of plea bargain. Usually, the accused is required to enter into arrangement to refund some money or assets which are highly immaterial compare to the alleged fraud. The charge is then drop on payment/ surrender of such asset. For instance former Edo State governor who was charge by EFCC for money laundering and embezzlement amounting to N2.9b had his 191 count charge dropped to 1 and when he pleaded guilty he was asked to pay N500m and return three properties which he quickly complied and was set free.
b. The existence and abuse of presidential pardon: Section 175(1) of 1999 constitution (as amended) confers on the president pardoning power in federal offences. A political allies if eventually convicted of fraudulent acts and sentenced to imprisonment are usually left of the hook by the president on the cover that he is exercising that prerogative of mercy. Such was the case when D.S.P. Alamieyeseigha former governor of Bayelsa State was impeached by the state house of assembly in 9th December, 2005 and arraigned by EFCC in Federal High court Lagos and found guilty of on six

count charges of corruption and money laundering in July 2007 and was granted pardon by President Goodluck Jonathan, in March 12, 2013.

c. The immunity clause: Section 308 (1) of 1999 constitution shields the President, Vice President, Governors and Deputy Governors from criminal and civil prosecution for any offence committed while in office. It protects them against arrest, application or issuance of court process requiring their appearance, commencement or continuance of civil of criminal proceedings and detention/imprisonment. This provision had promoted acts of impunity including corrupt and fraudulent activities.
d. The societal value system- the anomie theory
e. Religious hypocrisies: the manner religious leaders turn their eyes away from how wealth are made but respect and even arrange special thanks giving services for corrupt rich persons promotes corruption and fraudulent activities in the society.
f. Lack of sustainable development resulting in extreme poverty, rising unemployment etc. In Nigeria there seems no plan for the future generations as we are busy tapping the oil which would be exhausted sometimes in future without strong policy and actions to provide for the upcoming generation. Those in position of thrust tends to save for their generation fraudulently while poverty has been on the increase. In 2019, 83 million people representing 40 percent of Nigerian population were below poverty line, that is, below 137430 naira ($381.75) per year (World Bank, 2020). In 2018, the population was 82.9 representing 40 percent
g. Allegiance to political party and political associates which breeds corruption: in Nigeria, there seems to exist a big shield for political office holders for whatever they do, as far as, they pay and maintain allegiance to the ruling party. The ruling class rally round their colleagues accused of fraud/corruption to cover up the shoddy deals. This has contributed significantly to weak institutions as the politicians in power interfere with the duties of the anti graft agencies through undo pressure from their contacts (friends and cronies).

   In 2015, the then president of Nigeria, Goodluck Jonathan was quoted as saying that stealing is not corruption in an attempt to distinguish the Straight Act of Stealing from other forms of corruption. In effect, Nigerians have strong hatred for thieves than corrupt people as in an attempt to describe a corrupt officer as a thief to drive home the degree of what he did will be received with such comment as agreed he is a thief but should be described as 'opportunist', a 'sharp man', 'our man'. Thus, diverting public fund to better your family, friends and constituency could be baptised and less frowned at hence fraud in public sector has continued to grow and flourish as industry.
h. Weak institutions which comprises among others the police; anti graft agencies like the Code of Conduct Bureau, Economic and Financial Crime Commission (EFCC), Independent Corrupt Practices and other Related Offences commission (ICPC); Due Process; Bureau of Public Enterprise and Bureau of Public Procurement; the court etc. Undo political interference have rendered most of them 'lame dogs' who only bark but do not bite. This could be seen from the fact that hardly would any fraud/corruption cases be fully investigate and prosecuted with desired result.

The implication of the above is that fraud would continue to occur in Nigeria despite the good work of forensic accountants/auditors because of the above factors. A combination of the above factors have resulted in people engaging in corrupt and fraudulent activities, according to the ability of their position in the public sector organisation. This is due to the belief that there will be a way out.

6. Conclusion and Recommendations

The emergence/ introduction of forensic accounting contributes significantly in fraud control however, it seems not to be a complete panacea for fraud issues in Nigeria. They rekindled the hope of the public on auditors who have had serious reputational damage over the years as they were perceived to have had hands in glove with the management, thus, most of them being perceived to have compromised standard and ethical requirements in the conduct of their work.

The study recommends as follows

1. Fraud detection should be enshrined as part of auditors work by the policy makers so that non detection of fraud would attract sanctions to the auditor concerned. This would reduce the expectation gap and

also eliminate some unwholesome practices. Thus all auditors should update and acquire forensic auditing skills to be more effective in the changing situation accountants would found themselves.

2. As crime evolves so should forensic auditors skill in fraud investigation be updated to match with changing world, as well as, technological advancement. The professional bodies should assist in the update activities in that direction.
3. Training and retraining of forensic accountants on court process to avoid loss of good cases to avoidable court technicalities. Reputable legal firms could be used for such training. Also, training on determination of appropriate damages would help in fraud remediation.

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EFFECTS OF FORENSIC ACCOUNTING TECHNIQUES AND CORPORATE GOVERNANCE ON FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

ABSTRACT

Purpose: This study aimed to investigate the effect of forensic accounting and corporate governance on the financial performance of listed deposit money banks in Nigeria.

Theoretical framework: This study drew upon Agency Theory, to provide a theoretical foundation for examining the governance of a company and the conflicts of interest that arise among its shareholders, managers, and major debt providers. This was introduced to support the concepts of forensic accounting and corporate governance.

Design/ Methodology/Approach: This study employed ex-post facto and panel data research designs. This study obtained data from the annual audited reports of deposit money banks that were listed in Nigeria. The study focused on a population of fifteen (15) deposit money banks listed on the Nigerian Exchange Group (NGX). The study employed a purposive sampling technique to select ten (10) firms due to the availability of a complete dataset of the targeted population. This study covered a period of eleven years from the year 2012 to 2022. The collected data in this study underwent analysis using both descriptive statistics and panel regression analysis techniques.

Findings: The results found that forensic accounting and corporate governance had a significant effect on the financial performance of listed deposit money banks in Nigeria. This implies that these factors interact and contribute significantly to the banks' financial performance.

Conclusion: It was concluded that fraud case disclosure highlights the significance of transparency and reporting mechanisms in deterring fraudulent activities and safeguarding banks' financial performance.

Recommendation: The study recommends that deposit money banks should prioritize and improve the disclosure of fraud cases and mitigate fraud and other financial irregularities occurrences in order to cushion its adverse effects on financial performance and foster investor confidence.

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EFEITOS DAS TÉCNICAS DE CONTABILIDADE FORENSE E GOVERNANÇA CORPORATIVA NO DESEMPENHO FINANCEIRO DE BANCOS DE DEPÓSITO DE DINHEIRO LISTADOS NA NIGÉRIA

RESUMO

Objetivo: Este estudo teve como objetivo investigar o efeito da contabilidade forense e da governança corporativa no desempenho financeiro dos bancos de depósito listados na Nigéria.

Referencial Teórico: Este estudo baseou-se na Teoria da Agência para fornecer uma base teórica para examinar a governança de uma empresa e os conflitos de interesse que surgem entre seus acionistas, gestores e principais credores de dívida. Isso foi introduzido para apoiar os conceitos de contabilidade forense e governança corporativa.

Desenho/ Metodologia/Abordagem: Este estudo empregou desenhos de pesquisa ex post facto e de dados em painel. Este estudo obteve dados dos relatórios anuais auditados de bancos de depósito de dinheiro listados na Nigéria. O estudo centrou-se numa população de quinze (15) bancos de depósito de dinheiro listados no Nigerian Exchange Group (NGX). O estudo empregou uma técnica de amostragem proposital para selecionar dez (10) empresas devido à disponibilidade de um conjunto completo de dados da população-alvo. Este estudo abrangeu um período de onze anos, do ano de 2012 a 2022. Os dados coletados neste estudo foram analisados por meio de estatística descritiva e técnicas de análise de regressão em painel.

Constatações: Os resultados revelaram que a contabilidade forense e a governação corporativa tiveram um efeito significativo no desempenho financeiro dos bancos de depósito de dinheiro cotados na Nigéria. Isto implica que estes factores interagem e contribuem significativamente para o desempenho financeiro dos bancos.

Conclusão: Concluiu-se que a divulgação de casos de fraude destaca a importância da transparência e dos mecanismos de comunicação para dissuadir atividades fraudulentas e salvaguardar o desempenho financeiro dos bancos.

Recomendação: O estudo recomenda que os bancos de depósitos deem prioridade e melhorem a divulgação de casos de fraude e mitiguem ocorrências de fraude e outras irregularidades financeiras, a fim de amortecer os seus efeitos adversos no desempenho financeiro e promover a confiança dos investidores.

Palavras-chave: Contabilidade Forense, Governança Corporativa, Desempenho Financeiro, Bancos de Depósitos, Estrutura de Conselho, Estrutura de Propriedade.

EFECTOS DE LAS TÉCNICAS DE CONTABILIDAD FORENSE Y EL GOBIERNO CORPORATIVO EN EL DESEMPEÑO FINANCIERO DE LOS BANCOS DE DINERO DE DEPÓSITO QUE COTIZAN EN NIGERIA

RESUMEN

Propósito: Este estudio tuvo como objetivo investigar el efecto de la contabilidad forense y el gobierno corporativo en el desempeño financiero de los bancos de depósito que cotizan en bolsa en Nigeria.

Marco teórico: Este estudio se basó en la teoría de la agencia para proporcionar una base teórica para examinar el gobierno de una empresa y los conflictos de intereses que surgen entre sus accionistas, gerentes y principales proveedores de deuda. Esto se introdujo para respaldar los conceptos de contabilidad forense y gobierno corporativo.

Diseño/Metodología/Enfoque: Este estudio empleó diseños de investigación ex post facto y de datos de panel. Este estudio obtuvo datos de los informes anuales auditados de los bancos de depósito de dinero que cotizan en Nigeria. El estudio se centró en una población de quince (15) bancos de depósito de dinero que cotizan en el Nigerian Exchange Group (NGX). El estudio empleó una técnica de muestreo intencional para seleccionar diez (10) empresas debido a la disponibilidad de un conjunto de datos completo de la población objetivo. Este estudio cubrió un período de once años desde el año 2012 hasta 2022. Los datos recopilados en este estudio se sometieron a análisis utilizando estadísticas descriptivas y técnicas de análisis de regresión de panel.

Hallazgos: Los resultados encontraron que la contabilidad forense y el gobierno corporativo tuvieron un efecto significativo en el desempeño financiero de los bancos de depósito que cotizan en Nigeria. Esto implica que estos factores interactúan y contribuyen significativamente al desempeño financiero de los bancos.

Conclusión: Se concluyó que la divulgación de casos de fraude resalta la importancia de la transparencia y los mecanismos de presentación de informes para disuadir actividades fraudulentas y salvaguardar el desempeño financiero de los bancos.

Recomendación: El estudio recomienda que los bancos de depósito de dinero deben priorizar y mejorar la divulgación de casos de fraude y mitigar el fraude y otras irregularidades financieras para amortiguar sus efectos adversos sobre el desempeño financiero y fomentar la confianza de los inversores.

Palabras clave: Contabilidad Forense, Gobierno Corporativo, Desempeño Financiero, Bancos de Depósito de Dinero, Estructura del Directorio, Estructura de Propiedad.

INTRODUCTION

In recent years, the Nigerian banking sector has undergone significant growth and transformation as a result of rapid technological advancements, globalization, and increasing regulatory requirements (Odi, 2020). This sector plays a crucial role in driving the nation's economic development. However, this growth has not been without challenges, as financial scandals, fraudulent activities, and corporate governance failures have plagued the industry. The increasing occurrence of financial fraud and corporate misconduct globally has led to a growing recognition of the importance of forensic accounting and effective corporate governance in detecting and preventing such activities (Akindele, 2019).

These issues have eroded public trust and confidence in the banking sector, necessitating the adoption of robust mechanisms to mitigate risks and safeguard stakeholders' interests. As the financial landscape becomes more complex and sophisticated, the need for robust corporate governance and effective financial performance monitoring has become paramount. Amidst this dynamic environment, forensic accounting has emerged as a crucial tool for promoting transparency, mitigating fraud risks, and safeguarding the interests of stakeholders in the banking industry (Chi-Chi & Ebimobowei, 2019).

Forensic accounting, a specialized branch of accounting, focuses on utilizing investigative techniques to uncover financial irregularities, detect fraudulent activities, and evaluate internal controls. By combining accounting expertise, investigative skills, and legal knowledge, forensic accountants play a pivotal role in uncovering financial misconduct, ensuring compliance with regulatory frameworks, and enhancing corporate governance practices (Uche, 2020). There are concerns regarding the accountability of key decision-makers, transparency of financial reporting, and the prevention of fraudulent activities have raised questions about the adequacy of existing governance mechanisms.

Furthermore, effective corporate governance practices are crucial in ensuring the proper management and control of banks. Corporate governance refers to the system of rules, practices, and processes by which a company is directed and controlled. It encompasses the relationships between various stakeholders and aims to align the interests of principals (shareholders) and agents (managers and directors) within an organization. Strong corporate governance mechanisms promote transparency, accountability, and ethical behavior, thereby enhancing the financial performance of banks (Okegbale, 2021).

Given the importance of both forensic accounting and corporate governance, it is essential to understand their impact on the financial performance of listed DMBs in Nigeria. This study aims to investigate the relationship between forensic accounting, corporate governance, and financial performance in the Nigerian banking sector. By examining this relationship, valuable insights can be gained to enhance the effectiveness of forensic accounting practices and corporate governance mechanisms, leading to improved financial performance. The findings of this study will contribute to the existing literature by providing empirical evidence on the role of forensic accounting and corporate governance in enhancing financial performance in the banking sector. The results will help regulators, policymakers, and banking professionals understand the significance of implementing robust forensic accounting practices and effective corporate governance mechanisms to reduce agency problems, financial fraud, and misconduct.

The remainder of this paper is presented as follows; Section Two contains a summary of the literature and the formulation of theories, previous studies will be reviewed, gaps in literature will be analyzed and hypotheses formulated; Section Three will be the research methodology where the research design, population, sampling techniques, method of data collection and analysis will be discussed; Section Four involves a statistical overview and discussion of findings, Section Five includes the conclusion and recommendation.

THEORETICAL REFERENTIAL

This section will give definitions to the concepts of this study and thereby show the link between forensic accounting, corporate governance, and financial performance.

Financial Performance

Financial performance is a measure of a company's ability to raise and distribute capital within a specific time period (Adewara et al., 2023). It encompasses factors such as capital sufficiency, liquidity, solvency, efficiency, leverage, and profitability (Dagunduro et al., 2022; Kolawole et al., 2023; Nguyen et al., 2023). The performance of a company's finances reflects its capacity to manage and govern its own resources and serves as an indicator of the overall financial health of the business sector (Naz et al., 2018; Nguyen et al., 2023). Financial performance demonstrates how effectively a company utilizes its resources to maximize profits and wealth for its owners. Financial ratios are the most commonly used performance metrics in finance and statistical analysis, although a comprehensive assessment considers various other measures as well (Adewara et el., 2023; Dagunduro et al., 2023). When evaluating a company's financial health, the information in its financial statements is typically summarized using the traditional approach of financial indices based on the financial position and income statement analysis. Managing performance is one of the key objectives of management, who are responsible for the day-to-day operations of the organization (Fatihudin et al., 2018; Kolawole et al., 2023)).

Forensic Accounting

Forensic accounting is a specialized field of accounting that combines accounting principles and investigative techniques to analyze financial information, detect and prevent fraud, and provide evidence for legal proceedings (Akkeren & Buckby, 2019). It involves the application of accounting knowledge and skills to investigate financial irregularities, assess financial damages, and uncover financial misconduct. Forensic accountants often work closely with law enforcement agencies, lawyers, and corporate entities to investigate and resolve financial disputes, including fraud, embezzlement, money laundering, and other financial crimes (Uche, 2020).

They utilize various techniques such as data analysis, financial statement analysis, interviewing witnesses, and reconstructing financial transactions to uncover evidence and present findings in a clear and concise manner suitable for legal proceedings. The goal of forensic accounting is to provide accurate and reliable financial information and analysis that can be used in legal settings to support litigation, arbitration, or dispute resolution processes (Abbas et al., 2019). The Central Bank of Nigeria (CBN) has taken steps to establish a code of conduct and a sub-committee on corporate governance to address the unique requirements of the financial sector. The global financial scandals and corporate failures have underscored the significance of effective corporate governance, which aims to enhance shareholder value and meet the expectations of stakeholders (Sule et al., 2019).

Corporate Governance

Corporate governance refers to the practices, guidelines, and laws that regulate how corporations are managed and operated. It encompasses the structures, processes, and practices that a company adopts to oversee and direct its operations and affairs (Ahmed et al., 2023).

Good corporate governance ensures fairness, openness, transparency, and accountability in a company's dealings with its stakeholders. It involves the effective management of resources, the protection of shareholders' interests, and the enhancement of long-term shareholder value (Alfonso & Castrillion, 2021; Kumo et al., 2023). The concept of corporate governance is primarily associated with control mechanisms aimed at preventing agency loss, as highlighted in the literature.

It emphasizes the responsibility of managers to run the business profitably and successfully while considering the interests of shareholders separately. Effective corporate governance leads to economic efficiency by promoting value-adding activities, optimal resource allocation, and meeting societal expectations (Mohamad & Sori, 2011). Corporate governance is supported by various internal and external monitoring systems, including market mechanisms, internal monitoring, and regulatory frameworks. Market mechanisms involve block shareholders, the capital market, and the managerial labor market (Ahmed et al., 2023; Kumo et al., 2023).

Internal monitoring systems focus on processes within the company, while regulatory frameworks provide guidelines and rules for corporate governance practices. In Nigeria, the Nigerian Code of Corporate Governance 2018 provides recommendations and principles for implementing good corporate governance (Azim, 2012). It covers areas such as the board of directors, assurance, relationship with shareholders, business conduct and ethics, sustainability, and transparency. Compliance with these principles is crucial for improving firm performance and fostering a culture of good governance in Nigerian companies (Akande, 2016).

Board structure

Board structure refers to the composition, roles, and responsibilities of the board of directors within an organization (Nguyen et al., 2023). It defines how the board is structured and organized to effectively oversee and govern the company's operations (Khatib et al., 2020). The board of directors plays a crucial role in providing strategic guidance, making key decisions, and ensuring accountability within the organization (Ahmed et al., 2023). Board structure is essential for establishing effective governance practices, promoting transparency, and ensuring accountability within an organization. It provides a framework for the board to fulfill its responsibilities and aligns its composition and processes with the company's strategic goals and values (Akande, 2016).

Ownership structure

Ownership structure refers to the distribution and composition of ownership in a company, indicating the ownership interests and control rights held by various individuals or entities. It provides insights into how ownership is divided among shareholders and the extent of their influence over corporate decision-making (Al-Matari et al., 2014). Ownership structure plays a vital role in shaping corporate governance practices, influencing decision-making processes, and determining the distribution of profits and control within a company. It can impact managerial behavior, long-term strategic planning, and the protection of shareholder rights. Understanding the ownership structure is crucial for investors, regulators, and stakeholders to assess corporate governance practices and potential agency conflicts (Bhagat & Bolton, 2019).

Forensic accounting and financial performance

Forensic accounting and financial performance are interconnected, and the implementation of forensic accounting practices can have a significant impact on the financial performance of an organization (Akindele, 2019). Forensic accounting techniques are designed to prevent and detect financial fraud within organizations. By conducting thorough investigations, forensic accountants can identify and mitigate fraudulent activities that could otherwise lead to financial losses. This proactive approach to fraud prevention helps safeguard the financial resources of the organization and improves its overall financial performance (Okogbale, 2021).

Forensic accounting involves assessing and managing financial risks within an organization. By identifying potential risks and implementing preventive measures, forensic accountants can reduce the likelihood of financial irregularities and losses. This risk mitigation strategy enhances the financial stability and performance of the organization by protecting its assets and ensuring the accuracy and reliability of financial information (Odi, 2020). Forensic accounting practices promote transparency and accountability within organizations. By implementing robust internal control systems, conducting regular audits, and investigating financial discrepancies, forensic accountants contribute to a culture of transparency and accountability. This, in turn, enhances investor confidence, improves the organization's reputation, and positively influences its financial performance (Fatihundin et al., 2018).

Forensic accounting plays a vital role in strengthening corporate governance mechanisms. By evaluating the effectiveness of internal controls, assessing compliance with regulations and standards, and identifying governance gaps, forensic accountants help organizations improve their governance practices. Strong corporate governance frameworks are associated with better financial performance, as they promote responsible decision-making, risk management, and ethical behavior (Naz et al., 2018). Forensic accounting ensures compliance with legal and regulatory requirements. By conducting investigations, gathering evidence, and presenting findings in a court of law, forensic accountants assist in resolving legal disputes and addressing regulatory non-compliance. Compliance with applicable laws and regulations is crucial for maintaining the organization's reputation and avoiding penalties, which can positively impact financial performance (Abbas et al., 2019).

Instances of financial fraud or mismanagement can damage stakeholder confidence in an organization. Forensic accounting helps restore trust and confidence by demonstrating a commitment to identifying and addressing financial irregularities. Restored stakeholder confidence can lead to increased investments, improved access to capital, and enhanced financial performance (Uche, 2020). The implementation of forensic accounting practices contributes to improved financial performance by preventing and detecting fraud, mitigating financial risks, enhancing transparency and accountability, strengthening governance mechanisms, ensuring legal and regulatory compliance, and restoring stakeholder confidence (Sule et al., 2019).

Corporate governance and financial performance

Corporate governance and financial performance are closely interconnected in the business world. Effective corporate governance practices can significantly impact a company's financial performance, while poor governance can lead to negative consequences for the organization. Corporate governance refers to the system of rules, practices, and processes by which a company is directed and controlled. It encompasses the relationships between various stakeholders, such as shareholders, management, board of directors, employees, and other stakeholders (Alhares, 2020). The primary objective of corporate governance is to enhance shareholder value, protect the interests of stakeholders, and ensure the long-term sustainability and success of the company. Financial performance, on the other hand, refers to the measure of a company's ability to generate profits and create value for its shareholders. It includes indicators such as profitability, return on investment, revenue growth, cash flow, and overall financial health. Good corporate governance promotes transparency in financial reporting and operations (Alaoubi & Almomani, 2021).

Transparent financial reporting enables investors and stakeholders to have a clear understanding of the company's financial position, performance, and risks. It enhances investor confidence and attracts capital. Moreover, strong accountability mechanisms ensure that management and directors are responsible for their actions, leading to better decision-making and improved financial performance. Effective corporate governance structures include robust risk management practices (Kyere & Ausloos, 2020). A well-functioning board of directors and audit committees can oversee risk management processes, ensuring that potential risks are identified, assessed, and mitigated in a timely manner. Proper risk management reduces the likelihood of financial crises or significant losses, safeguarding the company's financial performance. Corporate governance mechanisms, such as shareholder rights and protections, play a crucial role in attracting and retaining investors. When investors have confidence in the company's governance practices, they are more likely to invest in and support the company's growth. Strong investor protection measures are associated with improved access to capital and lower costs of capital, which positively impact financial performance (Young et al., 2020).

The composition, independence, and expertise of the board of directors are critical factors in corporate governance. An effective board with diverse skills and experience can provide valuable guidance, oversight, and strategic direction to the company. A capable board is more likely to make informed decisions, identify growth opportunities, and enhance financial performance (Elkelish, 2018). It is important to note that the relationship between corporate governance and financial performance is complex and multifaceted. While good governance practices are associated with positive financial outcomes, other external factors, and industry-specific dynamics also influence financial performance. Nevertheless, companies that prioritize and implement strong corporate governance practices tend to create an environment that supports and enhances financial performance, fostering long-term success and value creation (Katmon & Farooque, 2018).

Theoretical Framework

This study drew upon Agency Theory, which was originally developed by Jensen and Meckling (1976), to provide a theoretical foundation for examining the governance of a company and the conflicts of interest that arise among its shareholders, managers, and major debt providers. The theory defines the agency relationship as a contractual arrangement between the owners (principals) of a company and its managers (agents), where the owners delegate decision-making authority to the management to operate the company on their behalf.

Ideally, the owners expect the agents to act in the best interests of the shareholders (Nguyen et al., 2023). However, it is challenging to create a perfect contract that ensures managers always prioritize the owners' interests, as managerial decisions may also impact their own personal welfare. This raises the fundamental question of how managers, as agents, can be incentivized or motivated to act in the shareholders' best interests.

Within the context of agency theory, financial performance serves as a crucial metric for assessing the effectiveness of agency relationships. It provides an objective measure to evaluate whether agents are indeed acting in the best interests of the principals. Consistent underperformance in financial performance indicators may indicate the presence of agency problems, such as managerial opportunism or a lack of commitment to fulfilling responsibilities. In this regard, forensic accounting plays a vital role in investigating and identifying any financial irregularities or misconduct that may impact financial performance.

In summary, agency theory offers a theoretical framework for understanding the dynamics between principals and agents within an organization. The integration of forensic accounting as a preventative measure enables the detection and mitigation of agency problems, while corporate governance mechanisms establish a structure to manage and oversee agency relationships. Ultimately, the evaluation of financial performance serves as a key indicator to gauge the effectiveness of these relationships, leading to the resolution of agency problems, improved corporate governance and enhanced financial performance.

Empirical Review

Between 2010 and 2016, Alhares (2020) investigated the impact of ownership structure and board structure on risk-taking as assessed by research and development (R&D) intensity in OECD countries using panel data of 300 enterprises from Anglo-American and European countries. The correlations are investigated using the standard least square multiple regression analysis approach. Alternative measurements and endogeneities had no effect on the results. The findings reveal that institutional ownership, board size, independent directors, and board diversity all have a detrimental impact on risk-taking, with Anglo-American countries having a stronger impact than Continental European countries. Director ownership, on the other hand, is statistically insignificant, according to the findings.

Alaoubi and Almomani (2021) investigated the role of forensic accounting in the relationship between corporate governance and accounting information quality in Jordanian public shareholding companies, with the study population consisting of all external certified accountants and the study sample consisting of a random sample of external certified accountants. External certified accountants were given (217) questionnaires. The study data was subjected to the multiple regression equation and the hierarchical regression equation test. The findings showed that there was a statistically significant impact on the application of governance standards in its many dimensions.

Ali and Fathyah (2020) focused on combining related literature and empirical research in order to enhance the projected powers of forensic accounting on corporate governance maturity, particularly for publicly traded businesses. The two major responsibilities of forensic accounting will be identified in this paper: preventative and detective roles. By combining agency theory, fraud triangle theory, and path dependence theory, this research indicates that fraud risk assessment plays a mediating function between forensic accounting and corporate governance maturity. The effect of CEO duality on the effective tax rate of listed food and beverage firms was studied by Ezejiofor and Ezenwafor (2020).

Likewise, Bhuiyan and Roudaki (2018) employed multivariate analysis to investigate the existence of related party transactions (RPTs) and the functions of auditors in insolvent financial companies in New Zealand. The study posits that nearly half of the failing finance firms were engaged in RPTs using a sample of 65 firms (including 38 failed finance firms) and 219 firm-year data. RPTs were mostly represented by interlocking directors and audited by non-Big4 auditors in the collapsed corporations, showing that lesser monitoring quality may assist RPTs. The paper also shows evidence that firms that participated in RPTs were later convicted of improper accounting and disclosure procedures using a sub-sample.

Kyere and Ausloos (2020) used cross-sectional regression to investigate the influence of excellent corporate governance on the financial performance of non-financial listed enterprises in the United Kingdom. Using cross-sectional regression methods, five corporate governance mechanisms are studied on two financial performance measures, return on assets (ROA) and Tobin's Q. The results of an empirical test conducted on 252 companies listed on the London Stock Exchange in 2014 show a positive or negative link, but occasionally no effect, between corporate governance procedures and financial success. Their findings suggest that by selecting the appropriate corporate governance mechanisms, a company's finances can be improved.

In a sample of 100 Australian and Sri Lankan companies, Pratheepkanth et al. (2016) investigate the relationship between board qualities and company performance. Size, gender ratio, fraction of non-independent members, and experience are among the factors examined by the Board. The degree to which the economy has developed is thought to have a confusing effect on the results. According to the findings, Australian boards are substantially larger than those in Sri Lanka; both countries' boards are male-dominated; and while board structure provides predictive insight into business success, only a few particular qualities are important. The larger Australian boards had a substantially stronger influence on business performance than the relatively smaller Sri Lankan boards, according to this study. The review of the effects of board size on corporate success should be expanded in future study.

Elkelish (2018) examined the link between corporate governance risk and agency expenses in various countries. Institutional Shareholder Services Europe (S.A.) provided corporate governance risk indicators for 4,135 companies in 27 countries. The DataStream database was used to extract agency costs and other control variables from annual financial reports. The study hypothesis was tested using an ordinary least squares multiple regression analysis model. Across countries, agency charges have a strong negative influence on corporate governance risk. However, the extent to which corporate governance measures are implemented varies by geographic region and industry type. In the non-financial sector, the link between corporate governance risk and agency costs is clearer than in the finance sector. After multiple statistical checks, these findings were found to be reliable.

To discover project governance mechanisms that correspond with success, Young et al. (2020) built a theoretical model of project governance and evaluated it with secondary industry data acquired from 51 global organizations and 66,817 replies. Five project governance mechanisms (Vision, Change, Sponsor, KPI, and Monitor) were found to have a strong relationship with project success and to be effective at various points of the project lifecycle. In the UK listed firms, Katmon and Farooque (2018) looked on the impact of internal corporate governance on the relationship between disclosure quality and earnings management. The findings reveal that for all proxies in restricting earnings management, regressions consistently report a strong negative relationship between earnings management and disclosure quality. Corporate governance characteristics, on the other hand, are usually unrelated to earnings management. This demonstrates an expanding trend of disclosure quality outperforming internal governance procedures in terms of earnings management.

Using a regression model using panel data from 24 Asian nations from 2006 to 2015, Anwar et al. (2019) explore the extent to which governance affects enterprises' cost of equity capital in Asian countries. The findings show that the Quality of Corporate Governance (QCG) index has a considerable impact on lowering the cost of equity for Asian companies. According to the agency hypothesis, explicit corporate governance variables such as board independence, audit committee independence, ownership concentration, and CEO duality have a substantial relationship with a firm's cost of equity in Asian countries.

Using US-based enterprises, Hussain et al. (2018) empirically explores the relationship between corporate governance and triple bottom line sustainability performance using agency theory and stakeholder theory. In fact, they claim that no single explanation can account for all of the hypothesized correlations.

The study aims to address the gaps in the existing studies by examining the relationship between forensic accounting, corporate governance, and financial performance. While previous studies have explored the impact of fraud on listed deposit money banks' performance and factors influencing corporate governance, none have explored the role of forensic accounting in corporate governance as a solution to improving financial performance. This study seeks to fill this gap by investigating the effect of forensic accounting on the corporate governance and financial performance of listed deposit money banks in Nigeria.

The study will take a different perspective and provide a deeper understanding of these variables by incorporating the information asymmetry theory, unlike previous studies that predominantly used the agency theory. Additionally, the study intends to assess three metrics of financial performance, namely returns on assets, returns on equity, and Tobin's q, within a single study, which has not been done in developed economies. Overall, this study aims to contribute to the literature by exploring the relationship between forensic accounting, corporate governance, and financial performance, particularly in the context of listed deposit money banks in Nigeria. By addressing this research gap, it seeks to provide valuable insights and a more comprehensive understanding of the topic. Based on these, the null hypotheses will be stated as follows:

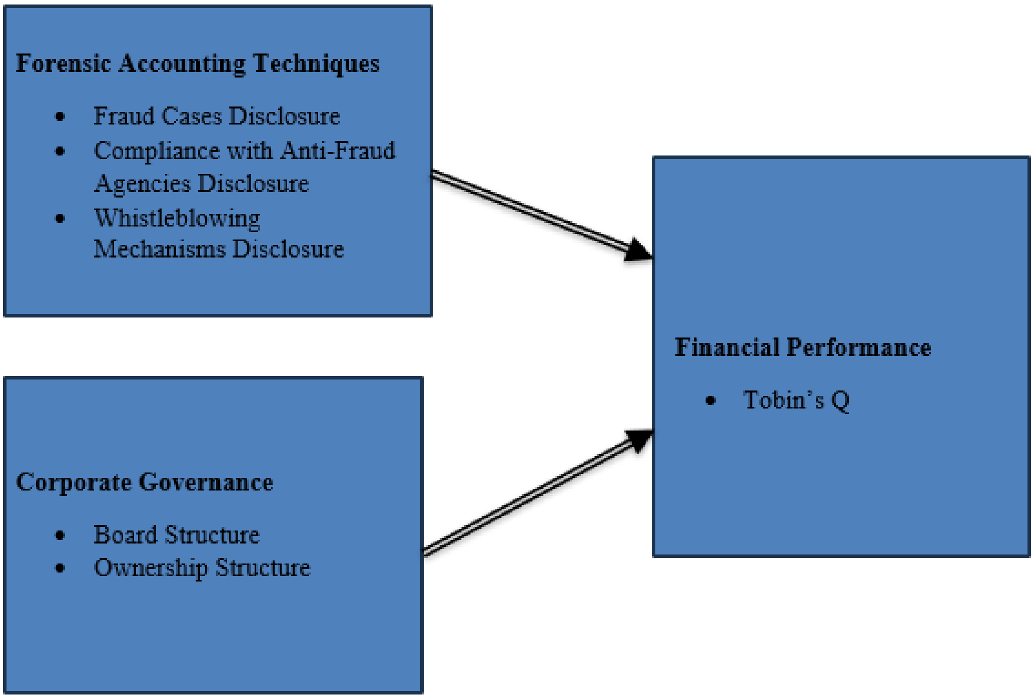
H_{01}: There is no significant difference between forensic accounting and financial performance of the listed deposit money banks in Nigeria.

H_{02}: There is no significant difference between corporate governance and financial performance of the listed deposit money banks in Nigeria.

Conceptual Framework

The study aims to shed light on the effects forensic accounting and corporate governance practices can have on the financial performance of the listed deposit money banks.

Figure 1 Conceptual Framework to show the interaction between Forensic Accounting, Corporate Governance and Financial Performance of listed financial institutions on the Nigerian Exchange Group.



Source: Author's Concepts (2023)

METHODOLOGY

This study employed *ex-post facto* and panel data research designs. The purpose was to collect and analyze data that were retrospectively recorded over a specific time period and were available in the administrative records and accounts of deposit money banks listed on the Nigerian Exchange Group (NGX). These records were deemed sufficient, representative, and reliable for conducting the study. The study utilized secondary data obtained from the annual reports and audited financial statements of deposit money banks that were listed in Nigeria. The study focused on a population of fifteen (15) deposit money banks listed on NGX. The study employed a purposive sampling technique to select ten (10) firms due to the availability of complete dataset of the targeted population. The collected data in this study underwent analysis using both descriptive and inferential statistical methods. Descriptive statistics such as mean, median, mode, and standard deviation were employed to summarize and describe the data. Additionally, panel regression analysis was conducted.

Model Specification

The econometric model for this study was specified in line with the previous study of Bhasin (2017) and Ahmed (2019) respectively to analyze the relationship that exists between the financial performance of quoted banks in Nigeria, forensic accounting and corporate governance. This stated as follows:

Model

$$FP = \beta_0 + \beta_1 FCD + \beta_2 CAD + \beta_3 WMD + \beta_4 BSIZE + \beta_5 BINDE + \beta_6 BGOVO + \beta_7 INTO + \varepsilon\ it$$

Where:

FP = Financial Performance
FCD = Fraud Cases Disclosure
CAD = Compliance with Anti-Fraud Agencies Disclosure
WMD = Whistleblowing Mechanisms Disclosure
BSIZE = Board Size
NINDE = Board Independence
BGOVO = Block Government Ownership
BINTO = Block Institutional Ownership
ε it = Error term
β0 = Intercept
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = The Coefficients of the unknown variables

The *a-priori* expectation = $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7 > 0$, the implication of this is that a positive relationship is expected between the explanatory variables and the explained variable.

Table 1: Operationalization of Variables

Variable	Type	Source	Description and Measurements of variables	Reference
Performance (Tobin's Q)	Dependent	Audited Annual report	Market capitalization divided by total shares (%).	(Kyere & Ausloos, 2020)
Fraud Cases Disclosure (FCD)	Independent	Audited Annual report	Measured as a dummy where "1" is assigned to the bank with annual reports with cases of fraud reported information and "0" for otherwise	(Bhasin, 2017)
Compliance with Anti-Fraud Agencies Disclosure (CAD)	Independent	Audited Annual report	Measured as a dummy where "1" is assigned to the bank with annual reports with compliance with anti-fraud policies and procedures information and "0" for otherwise.	(Bhasin, 2017)
Whistleblowing Mechanisms Disclosure (WMD)	Independent	Audited Annual report	Measured as a dummy where "1" is assigned to the bank with annual reports with the existence and effectiveness of internal reporting mechanisms for	(Bhasin, 2017)

			whistleblowing information and "0" for otherwise.	
Ownership Structure (OS)	Independent	Audited Annual Report	**Block Government Ownership** Measured as the shares ownership concentration of all the block government shareholders with 5% and above shares ownership (%) **Block Institutional Ownership** Measured as the shares ownership concentration of all the block institutional shareholders with 5% and above shares ownership (%)	(Ahmed, 2019)

Source: Researcher's Compilation (2023)

RESULTS AND DISCUSSIONS

In an attempt to examine the effect of forensic accounting and corporate governance on the financial performance of listed deposit money banks in Nigeria, the study begins with the characteristic of the variables with the aid of descriptive statistics; this is presided over by the panel unit root test. The test outcomes of these estimations are given as follows:

Descriptive Statistics

Table 2: Descriptive Statistics of Variables

	FP	FCD	CAD	WMD	BSIZE	BINTO	BGOVO	BINDE
Mean	0.858532	0.263636	0.809091	0.754545	13.26364	0.323679	0.005505	0.610342
Median	0.792701	0.000000	1.000000	1.000000	14.00000	0.345850	0.000000	0.583333
Maximum	2.550000	1.000000	1.000000	1.000000	20.00000	0.798900	0.293200	0.909091
Minimum	0.630000	0.000000	0.000000	0.000000	6.000000	0.000000	0.000000	0.000000
Std. Dev.	0.264616	0.442621	0.394816	0.432326	3.030963	0.237315	0.029711	0.126090
Skewness	4.074403	1.072906	-1.572911	-1.182952	-0.143979	0.055391	8.577512	-0.344162
Kurtosis	22.36862	2.151128	3.474050	2.399375	2.607148	1.847972	81.86938	7.613806
Jarque-Bera	2023.754	24.40669	46.38757	27.30865	1.087407	6.139107	29858.92	99.73792
Probability	0.000000	0.000005	0.000000	0.000001	0.580594	0.046442	0.000000	0.000000
Sum	94.43855	29.00000	89.00000	83.00000	1459.000	35.60467	0.605600	67.13757
Sum Sq. Dev.	7.632381	21.35455	16.99091	20.37273	1001.355	6.138717	0.096219	1.732964
Observations	110	110	110	110	110	110	110	110

Source: Author's Computation (2023)

Table 2 revealed the descriptive test conducted on the effect of forensic accounting and corporate governance on the financial performance of listed deposit money banks in Nigeria. The average values of financial performance, fraud cases disclosure, compliance with anti-fraud agencies disclosure, whistleblowing mechanism disclosure, board size, board independence, block government ownership and block institutional ownership stood at 0.858532, 0.263636, 0.80909, 0.754545, 13.26364, 0.323679, 0.005505 and 0.610342 respectively. The degree of variation measured by standard deviation indicated that board size has the highest rate deviation while the lowest discrepancy rate is blocked by government ownership. In the same vein, the asymmetry given by the Skewness output indicated that FP, FCD, BINTO, and BGOVO have long-right tails due to their positive values while CAD, WMD, BSIZE, and BINDE have a long-left tails. The Kurtosis showed that FP, CAD, BGOVO, and BINDE are leptokurtic as their values are above 3 while FCD, WMD, BSIZE, and BINTO are platykurtic since they have values that are below 3. The outcome of Jarque-Bera statistics showed that only BSIZE is normally distributed while others are not.

Panel Unit Root

Table 3: Unit Root Test

Variables	Panel Unit Root Test Method			
	Levin, Lin & Chu (LLC)		ADF Fisher statistics	
	LLC statistics	Integration order	ADF Fisher statistics	Integration order
FP	-5.33332	I(1)	44.4029	I(1)
FCD	-2.18232	I(1)	17.4113	I(1)
CAD	-3.35717	I(1)	12.6310	I(1)
WMD	-11.92419	I(1)	5.07119	I(1)
BSIZE	-4.72799	I(0)	35.7768	I(0)
BINDE	-4.96349	I(1)	62.2177	I(1)
BGOVO	-29.6191	I(0)	21.2932	I(0)
BINTO	-180.490	I(0)	34.1534	I(0)

Source: Author's Computation (2023)

The panel unit root outcome of the effect of forensic accounting and corporate governance on the financial performance of listed deposit money banks using LLC and ADF test statistics is reported in Table 3. The Table revealed that FP, FCD, CAD, WMD, and BINDE were stationary after their conversion to first difference using Levin, Lin & Chu (LLC) and ADF Fisher statistics while BSZE, BGOVE, and BINTO were stationary at level. The status of the panel unit root provided the led way to estimate using pooled least square, fixed and random effect models.

Correlation Analysis

Table 4: Correlation Analysis

	FP	FCD	CAD	WMD	BSIZE	BINTO	BGOVO	BINDE
FP	1	-0.16121	0.06556	0.16615	-0.23637	0.41819	-0.03360	-0.00690
FCD	-0.16120	1	0.29065	0.24538	-0.03860	-0.05089	-0.06917	-0.07182
CAD	0.06556	0.29065	1	0.69042	-0.15688	0.15301	-0.00773	0.04589
WMD	0.16616	0.24538	0.69043	1	-0.14620	0.35143	0.05724	0.06942
BSIZE	-0.23637	-0.03861	-0.15689	-0.14620	1	-0.19437	0.02654	-0.49183
BINTO	0.41819	-0.05089	0.15302	0.35143	-0.19438	1	0.05232	0.16667
BGOVO	-0.03361	-0.06918	-0.00773	0.05724	0.02654	0.05232	1	0.09808

BINDE	-0.00690	-0.07182	0.04590	0.06942	-0.49183	0.16666	0.09808	1

Source: Author's Computation (2023)

Table 4 revealed the correlation analysis of the effect of forensic accounting and corporate governance on the financial performance of listed deposit money banks in Nigeria. The result revealed that fraud cases disclosure, the board size, block government ownership, and block institutional ownership have a negative correlation of -0.16120, -0.23637, -0.03361, and -0.00690 respectively with the financial performance of deposit money banks while compliance with anti-fraud agencies disclosure, whistleblowing mechanism disclosure, and board independence have a positive correlation of 0.06556, 0.16616, and 0.41819 respectively.

Estimates of Parameters for Panel Regression Model

Table 5: Pooled LS (PLS) Random Effect (RE) and Fixed Effect (FE) Specification

	Dependent Variable FP		
Independent Var	Pooled OLS	Fixed Effects	Random Effects
Constant	1.316563*** (5.931897)	1.093707*** (4.891062)	1.301651*** (7.044156)
FCD	0.109149* (2.019283)	0.053565 (0.982981)	0.107288** (2.388829)
CAD	0.014151 (0.174764)	0.010707 (0.141744)	0.012376 (0.184734)
WMD	0.044551 (0.576143)	0.013547 (0.189700)	0.043732 (0.683062)
BSIZE	-0.023373*** (-2.676867)	-0.017520 (-1.659376)	-0.023054** (-3.156415)
BINDE	0.415158*** (3.959991)	0.221298 (1.624573)	0.410552*** (4.684387)
BGOVO	-0.373891 (-0.486496)	-1.505994** (-2.225045)	-0.433478 (-0.682501)
BINTO	-0.448491** (-2.153525)	-0.087770 (-0.379416)	-0.430149** (-2.473349)
No. observations	110	110	110
R-squared	0.262011	0.542935	0.254508
Adjusted R^2	0.211365	0.464300	0.203347
F-statistics	5.173351	6.904511	8.974626
Prob. (F-Statistics)	0.000046	0.000000	0.000000
Dubin-Watson	1.052529	1.487377	1.068325

Note: t-Statistic is provided in parentheses. *, **, *** indicate the significance at 10%, 5% and 1% level respectively.

Source: Author's Computation (2023)

Table 5 presents the effect of forensic accounting and corporate governance on the financial performance of listed deposit money banks in Nigeria, the study used panel regression analysis of pooled least square, fixed effect, and random effect models. The pooled least square, fixed, and random effect showed that if all the independent variables (fraud cases disclosure (FCD), compliance with anti-fraud agencies disclosure (CAD), whistleblowing mechanism disclosure (WMD), board size (BSIZE), board independence (BINDE), block government ownership (BGOVO), and block institutional ownership (BINTO) stood are held constant financial performance (FP) of the deposit money bank will increase by 1.316563, 1.093707 and 1.301651 units respectively in the three models. Similarly, the coefficient of fraud cases disclosure has a positive coefficient in all three models with a value of 0.109149, 0.053565, and 0.107288 for pooled least square, fixed, and random effect respectively. This implied that a unit increase in fraud cases disclosure will increase the financial performance of deposit money banks in Nigeria by 0.109149, 0.053565, and 0.107288 units respectively.

The value of the coefficient is only significant under the random effect result. More so, the coefficient of compliance with anti-fraud agencies' disclosure has insignificant positive coefficients of 0.014151, 0.010707, and 0.012376 units under the pooled least square, fixed, and random effect respectively. The result indicates that a unit increase in anti-fraud agencies' disclosure will increase the financial performance of deposit money banks in Nigeria. In the same vein, whistleblowing mechanism disclosure has an insignificant positive coefficient of 0.044551, 0.013547, and 0.043732 units under the pooled least square, fixed, and random effect respectively. This implied that a unit increase in whistleblowing mechanism disclosure will lead to 0.044551, 0.013547, and 0.043732 respective units for pooled least square, fixed, and random effect models. Board size is negative and significant under the pooled least square and random effect with a value of -0.023373 and -0.023054 units respectively. The result implied that a unit increase in board size will lead to -0.023373 and -0.023054 respective unit decrease under the pooled and random effect models while this coefficient is also negative but not significant under the fixed effect with a value of -0.017520 units.

Similarly, board independence has a significant and positive coefficient of 0.415158 and 0.410552 units under the pooled least square and random effect respectively. The result implied that a unit increase in board independence will lead to 0.415158 and 0.410552 unit increases under the pooled least square and random effect model respectively while it indicates a positive but insignificant relationship of 0.221298 with the financial performance of deposit money bank in Nigeria. Block government ownership has an insignificant negative relationship with the financial performance of deposit money banks with a value of -0.373891 and -0.433478 units for pooled least square and random effect respectively while its effect is significant under the fixed effect result. The result implied that a unit increase in block government ownership will lead to a decrease in the financial performance of deposit money banks.

Lastly, the coefficient of block institutional ownership is negative and significant under the pooled least square and random with a value of -0.448491 and -0.430149 unit respectively while its effect is also negative but not significant under the fixed effect result as it showed a coefficient of -0.087770 unit. The F-statistics that reveal the statistically significant of the whole model when combined revealed that the three models used in explaining the effect of forensic accounting and corporate governance on the financial performance of listed deposit money banks in Nigeria are statistically significant.

Hausman Test Result

Table 6: Result of the Hausman Test

Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	51.715388	7	0.5261

Source: Author’s Computation (2023)

From Table 6, the Chi-square probability value is 0.5261 which is not significant; hence the random effect model is accepted and therefore used for forecasting and prediction in this study.

Discussion and Implication of Findings

The increasing prevalence of financial fraud and corporate misconduct on a global scale has emphasized the importance of forensic accounting and effective corporate governance in identifying and preventing such activities. This study focused on investigating the impact of forensic accounting and corporate governance on the financial performance of listed deposit money banks in Nigeria. The study utilized the Husman test to compare fixed and random effect models, with the random effect model chosen for further analysis.

The results revealed a significant positive effect of disclosure of fraud cases (FCD) on the financial performance of deposit money banks in Nigeria. This suggests that disclosing fraud cases helps mitigate the adverse effects on the banks' performance and aids in reducing the occurrence of fraud. These findings align with previous research by Kyere and Ausloos (2020), Elkelish (2018), Anwar et al. (2019), and others. However, compliance with anti-fraud agencies’ disclosure (CAD) and whistleblowing mechanism disclosure (WMD) showed an insignificant positive relationship with financial performance. This implies that while there is some connection between compliance with anti-fraud measures and financial performance, it is not a substantial enough link to significantly influence the banks' financial success. Therefore, more efforts or strategies are needed to strengthen the banks' performance in terms of financial outcomes, beyond just complying with anti-fraud regulations and whistleblower mechanisms.

On the other hand, this study found a significant negative relationship between board size (BSIZE) and the financial performance of deposit money banks in Nigeria. Based on this, the statement suggests that this study's findings show that as the size of the board of directors of deposit money banks in Nigeria increases, their financial performance tends to decrease. In other words, having a larger board appears to have a negative impact on the banks' financial performance. This could imply that larger boards might lead to inefficiencies or challenges in decision-making processes that can hinder the banks' ability to achieve better financial results. Furthermore, this study highlighted that board independence (BINDE) has a significant and positive effect on the financial performance of deposit money banks in Nigeria. In essence, this study suggests that having an independent board of directors in deposit money banks in Nigeria is associated with better financial performance. This could imply that a board that is free from undue influences and conflicts of interest is better equipped to make decisions that positively impact the bank's profitability, efficiency, and overall financial success. These results support the findings of Alaoubi and Almomani (2021), Alhares (2020), and Kyere and Ausloos (2020) and others.

Additionally, block government ownership (BGOVO) is negatively related but insignificantly impacting financial performance. The statement implies that while government ownership might have some influence on financial performance, there might be other factors at play that are more influential in determining the entity's financial performance. Also, block institutional ownership BINTO) has a negative significant effect on the financial performance of deposit money banks in Nigeria. This statement suggests that having a significant amount of ownership by institutional investors is associated with poorer financial performance. This implies that the presence of institutional ownership might lead to decisions or influences that negatively affect the bank's financial metrics, such as profitability, efficiency, or other relevant indicators. These findings are consistent with previous studies by Alhares (2020), Alaoubi and Almomani (2021), Ali and Fathyah (2020), Bhuiyan and Roudaki (2018), and others.

In summary, the collective predictive ability of all independent variables, including fraud cases disclosure, compliance with anti-fraud agencies disclosure, whistleblowing mechanism disclosure, board size, board independence, block government ownership, and block institutional ownership, was statistically significant, suggesting that these variables together play a crucial role in predicting the financial performance of deposit money banks in Nigeria. Overall, the interpretation indicates that the study's findings show that the considered independent variables, including various aspects related to fraud, compliance, governance, and ownership, together have a meaningful impact on predicting the financial performance of deposit money banks in Nigeria. This implies that these factors interact and contribute significantly to the banks' financial performance.

CONCLUSION AND RECOMMENDATIONS

This study investigated the importance of forensic accounting and effective corporate governance in the context of the increasing prevalence of financial fraud and corporate misconduct globally. This study focused specifically on listed deposit money banks in Nigeria. The findings revealed that disclosing fraud cases has a significant positive impact on the financial performance of deposit money banks in Nigeria. This suggests that such disclosure helps mitigate the adverse effects of fraud on the banks' performance and reduces the occurrence of fraudulent activities. Additionally, the study showed a significant negative relationship between board size and block institutional ownership with the financial performance of these banks, emphasizing the need for careful consideration in these areas to enhance financial performance. On the other hand, board independence was found to have a significant and positive effect on financial performance, while block government ownership had a negative impact, though it was not statistically significant. Overall, the collective predictive ability of the various independent variables examined in the study is essential in forecasting the financial performance of deposit money banks in Nigeria. It was concluded that fraud case disclosure highlights the significance of transparency and reporting mechanisms in deterring fraudulent activities and safeguarding banks' financial performance.

Based on the empirical findings, several recommendations are put forth to enhance the financial performance of deposit money banks in Nigeria:

i. Deposit money banks should prioritize and improve the disclosure of fraud cases and mitigate fraud and other financial irregularities occurrences in order to cushion its adverse effects on financial performance and foster investor confidence.

ii. Banks must actively improve compliance with anti-fraud agencies and whistleblowing mechanisms. Implementing effective compliance strategies will help mitigate fraudulent activities and contribute to better financial performance.

iii. Banks should carefully evaluate their board sizes and strive for a size that allows effective communication, collaboration, and informed decision-making can contribute to better financial performance.

iv. Banks should prioritize and maintain a high level of independence within their boards and efforts should be directed towards selecting board members who are free from undue external influences and conflicts of interest.

v. Deposit money banks should assess their ownership structures and understand how different ownership entities impact their financial results. Strategies to align the interests of institutional owners with the bank's financial success might be explored.

By adopting these recommendations, deposit money banks in Nigeria can strengthen their financial performance and create a robust foundation for sustainable growth and stability.

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Evaluation of Forensic Accounting Techniques in Fraud Prevention/Detection in the Banking Sector in Nigeria

Abstract The study evaluated the application of forensic accounting techniques in preventing/detecting fraudulent practices in commercial banks in Nigeria by specifically assessing the impact of commercial data mining, ratio analysis and trend analysis techniques in fraud detection/prevention. With the aid of descriptive statistics and Ordinary Least Square (OLS) model, the result revealed the application of forensic accounting techniques significantly enhanced detection/ prevention of fraud in the banking system. The study further revealed the importance of ratio analysis as well as trend analysis techniques in fraud detection/prevention. Also the study revealed the importance of commercial data mining software in fraud detection/prevention and the lack of capacity and awareness of most staff of the workings of data mining technology as well as the use of trend analysis technique in detecting/preventing fraud in the banks. It was recommended that commercial banks should mandatorily be required to acquire robust data mining software facilities as well as enhanced training on the application of data mining and its usefulness in the banking sector. Also, use of anonymous response hotlines be encouraged as well as extensive awareness put in place for the attention of the public as well as quick responses from the banks to queries.

Keywords Forensic accounting, Fraud, Commercial banks, Data mining

1. Introduction

According to Association of Certified Chartered Accountants (ACCA) & Ernst and Young (EY.) [1], the scale of financial crimes is enormous, with global estimates ranging from US$1.4 trillion to US$3.5 trillion annually. Underlying these trillions of dollars is criminal activities that damages human wellbeing and harms economies and societies throughout the world, Thomas & Dancey [39]. The banking sector globally plays a crucial role in economic development of any nation. In Nigeria while money supply to Gross Domestic Product (GDP) in 2018 stood at 19.63% and credit to private sector to GDP stood at 17.63%, every other sector revolves around the banking sector for credit management and so it is a critical sector in any developed or developing economies of the world. In view of the pivotal and critical role it plays in the economy, governments all over the world are keen in ensuring the sector is devoid of fraudulent manipulations and avoid the 2008 financial crisis in the US and Europe. In Nigeria because of socio-political and economic dynamics, there is a general upward trend in corrupt and fraudulent practices among the people. Nigeria has thus faced various financial crisis resulting from many failed banks and finance houses in the last two decades. There are various advanced fee and other investment frauds perpetrated in Nigeria and that has bedevilled the Nigerian economy and the world. This is fuelled by the emerging trend where societal appeal for power, authority and recognition is strong and compelling as many believe that power, authority and recognition can be achieved through acquisition of wealth, legally or illegally. This desire for wealth is also propelled by the need to take care of personal health, education, housing, security and other services which are the primary responsibilities of governments, but which governments have failed and/or neglected to provide.

Also as stated by Ewa, Adebisi & Kankpang [9], Nigeria has thus experienced big investment frauds and trading scams that have resulted in the loss of billions of dollars from gullible people as it is alleged Nigeria's financial sector does not have efficient fraud detection mechanism and the prevailing business laws are inadequate to prosecute offenders. Globally many financial institutions collapse like Fannie Mae, Freddy Mae, Stamford Group, Leman Brothers and Northern Rock in the US and UK are attributable to fraud. These criminal vices have led to reduction or even dis-investment from Nigeria and its attendant negative consequences on economic growth is enormous as unemployment is projected to hit 33.5 per cent by 2020 and national poverty rate of 40.09 per cent, NBS [26] & Ngigi [27]. Also with the introduction of electronic banking and enhanced Information and Technology (IT) infrastructures in

the banking sector and in Nigeria generally, there is an astronomical increase in financial crimes, mismanagement and misappropriation of funds in the government agencies and the banking sector. In 2017, the Nigerian Deposit Insurance Corporation (NDIC) reported that frauds and forgeries involved in the banking sector amounted to ₦12.01 billion.

This growing level of fraudulent activities and the negative image on the banking sector is a cause of concern for necessary mechanism or controls that will address this cancer in the system. Against this backdrop is the introduction of forensic accounting techniques in curbing fraudulent practices and easy identification of infractions in the banking system in Nigeria.

1.1. Statement of the Problem

As the fraudsters have over time developed and are continuously developing skills to outwit both internal and external auditors and management who are expected to superintend over the businesses, there is an urgent need to put in place mechanism to address this menace. As Wall and Fogarty [40] stated, fraud mitigation remains key in the justification for internal control implementation, auditing effect and regulatory design. Therefore there arises the need to evolve techniques to stem the tide of these fraudulent practices. In fact most of these frauds are perpetuated under the watchful eyes of both Internal and External Auditors without their knowledge interrogating a vexed question of the capacity of the auditors and the application techniques the organizations are adopting. Uncovering and fighting these fraudulent activities and illicit financial flows requires information on how, where, who owns, controls or ultimately benefits from any business involved in potentially illegal activities in the bank: namely, the beneficial owners. Could the ineffectiveness in tackling this menace therefore be as a result of the lack of application of forensic accounting techniques in banks' operations in Nigeria?

It is in the light of the above that this study attempts to evaluate the extent to which Forensic Accounting techniques can help in the prevention and detection of fraudulent activities in the banking sector in Nigeria.

1.2. Objectives of the Study

Anchored on fraudsters' continuous development of skills to outwit both internal and external auditors and management, this study is to evaluate the probable effect of forensic accounting techniques on fraud prevention and detection in the banking sector in Nigeria. Specifically to:

i. Ascertain the effect of commercial data mining technique (CDM) on fraud prevention and detection in commercial banks in Nigeria.
ii. Ascertain the effect of the application of ratio analysis technique (RAS) in fraud prevention and detection in commercial banks in Nigeria.
iii. How the application of trend analysis technique (TRD) prevents or detects fraud in commercial banks in Nigeria.

1.3. Research Question

The research question for the study is to examine to what extent can forensic accounting techniques (commercial data mining, ratio analysis and trend analysis) detect or prevent fraudulent activities in the banks in Nigeria.

i. To what extent can the application of commercial data mining technique (CDM) prevent or detect fraud in commercial banks in Nigerian.
ii. To what extent can the application of ratio analysis technique (CDM) prevent or detect fraud in commercial banks in Nigerian.
iii. To what extent can the application of trend analysis technique (CDM) prevent or detect fraud in commercial banks in Nigerian.

1.4. Research Hypotheses

The research hypotheses are:

H_{O1}: The application of commercial data mining technique (CDM) has no significant effect on fraud prevention and detection in commercial banks in Nigerian.

H_{O2}: The application of ratio analysis (RAS) technique has no significant effect on fraud prevention and detection in commercial banks in Nigerian.

H_{03}: The application of trend (TRD) analysis technique has no significant effect on fraud prevention and detection in commercial banks in Nigerian.

2. Literature Review

2.1. Theoretical Framework

Several attempts have been exerted on defining fraud. This is so because it evokes a visceral reaction in the society. It could be described as a trick with a purpose to obtain someone else assets. It thus involves deception, confidence and trickery. Fraud can thus be distilled into four basic elements of false representation of a material nature which is false, and or recklessly so but is believed and acted upon by the victim and the victim suffers damages resulting from his reliance thereon. This study is anchored on rational choice theory and the fraud deterrence cycle following the rational behaviour of man in satisfying his wants and the deterrence of management to stem the tide of individuals' quest for illegal acquisitions.

2.1.1. Rational Choice Theories

The Rational choice theories which were developed by Marcus Felson and Lawrence Cohen (1968) (cited by Felson & Clarke in [15] are applicable to employee fraud by combining elements of classical theory as well as economic theory in explaining the criminal behaviour of individuals. Human beings from a classical perspective are considered inherently reasonable and hedonistic who rationally evaluate the possible costs and benefits of a given act (Beccaria, 1764 cited by Hollinger & Davis [17]. Ordinarily people are tempted to take decisions that will avoid pain but with maximum amount of satisfaction notwithstanding breaking the law of the land (Bentham, 1789 cited by Hollinger & Davis [17].

2.1.2. Fraud Deterrence Cycle Theory

Individuals may not often make distinction between the outrageous and the fraudulent or between bad judgment and wrong doing. A systematic and rigorous approach is essential to manage transactions from the prism of deterrence, discovery, investigation and remediation, [16]. Fraud deterrence cycle according to Golden, Skalak and Clayton [16] is an interactive process with four main elements of corporate governance, transaction level controls, retrospective examination of governance and control processes and investigation and remediation of suspected or alleged problems.

2.1.3. Fraud Triangle

Classic fraud theory explains the reasons behind fraud as a triangle of perceived opportunity, perceived motivation and perceived rationalization. Edwin Sutherland in his book *White Collar Crime* in 1949 is credited to have coined the term and so he is seen as the initial contributor to the model. The fraud triangle theory was propounded by Cressy [7] in an attempt to understand what precipitates, inspire or motivates people to commit fraud or crime. Through extensive interview of fraudsters in prisons, he postulated that every fraud has three things in common – motivation or pressure, rationalization and opportunity to commit the crime. Fraud or crime will occur only when there is pressure of motivating factor on the fraudster. These factors may be extreme financial need, organizational action, entailed organizational rewards or punishment for individuals not meeting set targets. Notwithstanding the desire to commit fraud, without the second leg of the triangle – existence of opportunity, the fraud will not occur. There must therefore be a distinctive avenue or situation for the fraudster to gain access or control over the resources to be defrauded. These opportunity ranges from weak internal controls in the organization, absence of proper accountability and disproportionality between the perceived benefits of the fraud and the perceived costs of being detected and punished. According to the theory, although there may be pressure and opportunity to commit fraud, without rationalization fraud will not occur. Rationalization thus completes the precipitating factors that must be present for fraud to occur. Rationalization is self-justification for deviant act which involves justifying the crime under the circumstance by giving excuses why the action is necessary as perpetrators need a way to justify their actions as being acceptable or normal.

2.2. Conceptual Framework

2.2.1. Fraud and Its Classification

The word Fraud has many definitions according to the circumstance. Fraud as a crime includes all the multifarious means that man invents to get an advantage over others by false representation. Fraud as a tort in the other hand is defined as a material representation by the defendant which is false and which was not actually believed by the defendant to be true and was made with the intent to be acted upon and indeed it was acted upon innocently by the compliant to his detriment. However, to the layperson, fraud is dishonesty in the form of an intentional deception or manipulation of material facts with clear intension to deceive by coercing people to act against their own best interests for the fraudster's material gain.

Fraud may be classified according to those committed against organizations or committed on behalf of the organizations. Employee fraud is a fraud where the victim of the fraud is the organization while financial statement fraud is fraud committed on behalf of the organization by making the financials of the organization look better than they actually are. Fraud may also be classified under occupational fraud taxonomy. Occupational fraud is the use of one's position in the organization for personal enrichment through the deliberate misuse or misapplication of the organization's resources or assets. This involves use of official resources for personal benefit. This ranges from asset misappropriation, corruption and fraudulent falsification of an organization's financial statements. Occupational fraud classes include employee embezzlement, management fraud, investment scams, vendor fraud, customer fraud and miscellaneous frauds. The Association of Certified Fraud Examiners [2] defined Occupational fraud as "the use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the employing organization's resources or assets".

2.2.2. Forensic Accounting

Forensic Accounting has been defined by many scholars according to their perspective of the subject matter. Whereas Zysman [43] defined forensic accounting as the integration of accounting, auditing and investigative skills, Joshi [20] defined forensic accounting as the application of specialized knowledge and specific skill to stumble up on the evidence of economic transaction. On the application of forensic accounting while Coenan [6] opined that it involves the application of accounting concepts and techniques to legal problem, Akintoye [3], Degboro and Olofinsola [8] and Singleton, Bologna, Singleton and Lindquist [38] opined that it involves with the relationship and application of financial facts to legal problems. Forensic accounting is also seen as the practice of utilizing accounting, auditing and investigative skills to assist in legal matters, Manning [22]; Murray [25]; Owojori & Asaolu [33].

As the discipline is changing in response to the growing needs of corporations, so it is being redefined as the application of financial expertise and detailed examination and analysis of financial documents and records for use as evidence in a court of law, Howard & Sheetz [18]; Ramaswamy [34]; Sage Forensic Accounting [36] and Zysman [34].

2.2.3. Forensic Accounting Tools

Among the tools employed by experts in the profession to carry out investigation, detailed examination, analysis and diagnosis of financial transactions with a view to giving expert advice include; Data mining, ratio/vertical and horizontal analysis and trend analysis.

2.2.3.1. Commercial Data Mining

Data mining is the application of specialized software that looks for anomalies, patterns and correlations in databases to predict outcomes. It facilitates the extraction of hidden predictive information from large databases and has great potential to assist organizations identify trends, anomalies and other unusual activities thus allowing businesses to make proactive knowledge driven decisions. Data mining software are extremely helpful in detecting fraud as it has scripting capabilities and can search organizations' databases for anomalies and suspicious patterns that are symptoms of fraud. Some of the commercial data mining software are Audit Command Language (ACL) and CaseWare IDEA.

2.2.3.2. Ratio Analysis

Ratio analysis is the act of measuring the relationships among different financial statement items as well as between these items and nonfinancial data. While vertical analysis is a method of comparing elements of a financial statement with a common base item, horizontal analysis is used to understand the ratio of change in different financial statement items over a defined period. Ratio analysis as a forensic accounting technique is used to compare either on a historical basis, industry basis or against a defined benchmark. It identifies fraud therefore by examining the patterns of the data to highlight possible deceitful transactions. Vertical analysis in the other hand expresses financial statement numbers to percentages.

The technique is very useful for fraud detection because percentages are easily understood by all and sundry. When vertical analysis is applied in analysing changes in income statement, gross sales are set at 100 per cent while all other amounts are converted to a percentage of sales. Horizontal analysis focuses on changes over period. While under ratios and vertical analysis, statements are converted to numbers that are easier to understand and the numbers are compared from period to period, under horizontal analysis, the changes in amounts from period to period are converted to percentages.

2.2.3.3. Trend Analysis

Trend analysis is one of the important forensic accounting techniques that can be deployed to identify frauds. Emphasis is on focusing on the transactions which are exceptional in nature. It may be difficult to identify certain transactions from the current data but if the transactions current entries are compared with the previous year data entries they can easily be identified as fraudulent. By comparing sales and bad debts data over the years in an organization, it is easy to establish if the level of sales increases is at the same rate as bad debts increases. Under such scenario, it could be suspected that such bad debts are nothing but the product of fraudulent sales transactions or manipulations entered in the system to increase turnover. Such fraudulent manipulations could not be identified without the help of trend analysis over a defined period.

2.3. Empirical Review

There are numerous researches carried out on impact of forensic accounting and fraud prevention and detection both in Nigeria and globally. In examining forensic accounting and financial Crimes, Izedonmi and Ibadin [19], looking at some basic and common financial crimes in corporate organizations in Nigeria revealed the motivations for financial crimes are built around some risk factors, such as incentive (or pressure), opportunity and rationalization surrounding the financial criminals.

In the study that examined the application of forensic auditing in fraud control by analysing the trend of fraud cases, Zachariah, Masoyi, Ernest and Gabriel [41], recommended the employment of forensic auditing in Nigeria by amending the Audit Act to incorporate compulsory inclusion of forensic auditors in each audit team. In the study examining the level of forensic auditors' ability to fulfil effectiveness in detecting, investigating and preventing fraud, Njanike, Dube and Mashayanye [28] found among other constraints, lack of technical capacity by auditors, lack of necessary resource materials, and management interference on audit assignments and non-recognition of the profession.

Also on the need to enhance capacity, Okafor and Agbiogwu [29] in their study on the effect of forensic accounting skills on the management of fraud in banks in Nigeria highlighted the need to enhance accountants' skills as it aids in the discharge of their duties. However, in their study, Enofe, Omagbon and Ehigiator [12] examined the impact of forensic audit on corporate fraud and concluded that frequent utilization of forensic audit services will significantly help in detecting, preventing and reducing incidences of fraud.

Investigating the relative merits of engaging forensic accountants when drawing up an audit plan to effectively identify management fraud, Okoye and Gbegi [30] study revealed forensic accountants effectively modified the scope and nature of audit tests when the risk of management fraud was considered high by proposing special audit procedures. They recommended more training and the involvement of forensic accountants' right from the planning stage of an audit when there is suspicion of management fraud risk. In investigating how forensic accounting services can prevent and manage fraud in Microfinance banks, Bassey [5] employed litigation support and forensic investigation services as independent proxies and the study revealed an active engagement of both litigation support and forensic investigation services by Microfinance banks drastically reducing fraud and playing a significant role in the prevention of crimes and corruption.

In examining agreement amongst stakeholders on the effectiveness of forensic accounting in the control of financial fraud, qualities of financial reports and internal control, Modugu and Anyaduba [23] adopting a survey research method revealed significant agreement among the stakeholders on the effectiveness of forensic accounting in controlling fraudulent practices, improvement in the quality of financial reports as well as improvement in the quality of internal control procedures in the organizations. On his part Ejoh [10] investigated the impact of forensic accounting application in monitoring internal controls, detection and prevention of financial fraud in Nigeria. The study which employed survey research design and enlisted 150 accountants, auditors and top management staff revealed the application of forensic accounting techniques is effective and significant in fraud detection, prevention and in monitoring and evaluating internal controls.

In investigating the role of forensic accounting in curtailing financial crimes, Enofe, Agbonkpolor and Edebiri [11] study revealed the dire need for forensic accountants in the banking sector in Nigeria as forensic accounting is an effective tool to addressing financial crimes. In its ability in combating fraudulent activities in the banking sector, Ezejiofor, Nwakoby and Okoye [14] study revealed that forensic accounting is an effective tool for handling financial crimes and ensuring corporate governance in the banking sector. Examining the relationship between fraud detection and forensic accounting services, Enofe, Okpako and Atube [13] found the application of forensic accounting services by organizations affected the level of fraud incidences in the organizations.

Investigating the effect of forensic investigation methods on corporate fraud deterrence in Nigerian Banks, Onodi, Okafor and Onyali [31] adopting a survey research design method revealed among others the existence of a significant relationship between the forensic investigative methods and corporate fraud deterrence. But examining the impact of using forensic accounting on financial corruption, Albdullah, Alfadhl, Yahya and Rabi [4] adopting survey research method to gather respondents for the research revealed existence of significant relationship between forensic accounting methods and the effectiveness of audit firms in detecting financial corruption.

In examining data mining framework for prevention and detection of financial statement fraud following the alarming proportion of reported financial statements frauds globally, Rajan and Nasib [35] proposed data mining framework for prevention and detection of fraudulent practices in financial statements whose features includes the various financial ratios measuring profitability, liquidity, safety and efficiency and also incorporating behavioural characteristics. Surveying data mining techniques used in fraud detection and prevention, Sheela and Sandip [37] stated that data mining is a powerful tool applied by many enterprises to enhance their operations and competitive advantage. They stated that although there are studies on data mining and various data mining techniques that can be used to detect and identify different types of fraud, this study arose due to little research that synthesizes various facets of fraud that uses the data mining technique. The study thus categorized fraud into four categorizes management fraud, customer fraud, network fraud and computer based fraud. In the study to explore the effectiveness of data mining classification techniques in detecting firms that issue fraudulent financial statements, Kirkos, Spathis and Manolopoulos [21] investigated the usefulness of decision tree, neural networks and Bayesian Belief Networks in the identification of fraudulent financial statement and found dependency between falsification and the ratio, debt to equity, net profit to total assets, sales to total assets, working capital to total assets and Z score under Bayesian model. The decision tree model revealed falsification of financial statements with distress. Investigating detection of financial fraud using data mining techniques, Monsa [24] revealed logistic regression model tool as the leading data mining tool employed by many organizations in detecting financial fraud.

In a study on fraudulent activities and forensic accounting services of banks in Port Harcourt, Nigeria, Onuorah and Ebimobowei [32] employed a sample of (24) banks and analysed the data with the aid of least-squares, and Granger Causality. The study revealed a significant impact of forensic accounting applications on the level of fraudulent activities in the banks as forensic accounting services gives banks good mechanisms that help to detect these fraudulent activities.

3. Research Methodology

The study is geared towards evaluating the application of forensic accounting techniques in fraud prevention and detection in the banking sector in Nigeria. The study sampled respondents from commercial banks operating in Cross River State, Nigeria.

A survey design was adopted for the study. Its anonymity necessitated by the sensitive nature of the subject of this study allowed participants to make honest responses. The population of the study consisted of 170 senior and management staff of the 15 commercial banks branches in Cross Rivers State. They include accountants, auditors, IT specialists and economists. Using purposeful sampling, 150 out of the population of 170 were selected to participate in the study and 150 structured questionnaires were distributed. A five-point Likert scale (strongly agree – 5points, agree – 4points, undecided – 3points, disagree – 2points and strongly disagree – 1point) was used to grade the responses and logically reflect the degree of the ranking. The number of questionnaires distributed yielded 140 useful responses which were then used in the data analyses.

Since this study is an opinionated research, the questionnaire instrument was structured to elicit responses from the research participants. The questionnaire was divided into two sections, A and B. Section A contained the demographic data of the respondents while section B contained critical belief questions that elicited responses on the impact of forensic accounting techniques in fraud prevention and detection. The instrument was designed so as to enable respondents choose from the five optional probable responses to each belief question.

3.1. Techniques of Data Analysis

This study examined the extent of the application of forensic accounting techniques using proxies as commercial data mining technique, ratio analysis technique and trend analysis technique in detecting and preventing fraudulent activities in the banking sector in Nigeria using multiple regression analysis. This model is suitable because the research focus is on examining the relationship between forensic accounting techniques and fraud prevention and detection in Nigerian banks. All estimations were performed using SPSS 20.0 software.

3.2. Model Specification

The model specification used to examine the forensic accounting techniques as the determinants of fraud prevention is specified functionally as:

Fraud prevention/detection = f (Forensic accounting technique) = FP = f (CDM, RAS, TRD)

It is stated econometrically as:

$$FRP = \beta_0+\beta_1 CDM+\beta_2 RAS+\beta_3 TRD+\mu_1$$

Where:

β_0 = Unknown Constant term to be estimated

FRP = Fraud Prevention/Detection

CDM = Commercial Data Mining Software technique

RAS = Ratio Analysis technique

TRD = Trend Analysis technique

μ = Stochastic error term

$\beta_1 - \beta_3$ = Unknown coefficients to be estimated

$\beta_0, \beta_1, \beta_2, \beta_3 \geq 0$

3.2.1. A Priori Expectation

This is a theoretical statement which expresses what a probable result analysis would be. In this study, it is assumed commercial data mining technique, ratio analysis technique and trend analysis technique are to be positively related to fraud detection and prevention. The coefficients of $\beta_1, \beta_2, \beta_3 > 0$.

4. Data Presentation

4.1. Test of Hypotheses

Table 2. Descriptive statistics result on the effect of commercial data mining software (CDM), ratio analysis (RAS), and trend analysis (TRD) techniques on fraud prevention and Detection (FRP)

	Mean	Std deviation	Min	Max	Skewness	Kurtosis
CDM	27.050	5.094	20.00	33.00	0.118	-1.837
RAS	40.471	4.688	34.00	45.00	-0.271	-1.890
TRD	22.129	4.863	12.00	27.00	-0.990	-0.603
FRP	33.643	2.919	27.00	37.00	-1.019	0.029

Dependent Variable: FRP
Independent Variables: CDM, RAS, TRD
Source: Researcher's SPSS 20.0 Computation, 2020

Table 3. Inter correlation among the variables

	FRP	CDM	RAS	TRD	SIG
FRP	1.000	0.746	0.855	0.782	0.000
CDM	0.746	1.000	0.822	0.516	0.000
RAS	0.855	0.822	1.000	0.750	0.000
TRD	0.782	0.516	0.750	1.000	0.000

Dependent Variable: FRP
Independent Variables: CDM, RAS, TRD
Source: Researcher's SPSS 20.0 Computation, 2020

Table 4. Least square regression result model summary of Forensic Accounting Techniques on Fraud Prevention and Detection (Regression constant and coefficients)

Item	Unstandardized Coefficient		Standardized Coefficients		
	B	Std Error	Beta	t	Prob
Con	15.559	1.133		13.728	0.000
CDM	0.145	0.040	0.253	3.583	0.000
RAS	0.225	0.057	0.361	3.959	0.000
TRD	0.229	0.036	0.381	6.269	0.000
R	0.892				
R Square	0.796				
Adjusted R square	0.791				
F. Ratio	176.390				
Prob.	0.000				
Durbin-Watson	0.160				

Dependent Variable: FRP
Independent Variables: CDM, RAS, TRD
Source: Researcher's SPSS 20.0 Computation, 2020

Hypothesis 1:

H_{O1}: The application of commercial data mining technique (CDM) has no significant effect on fraud prevention and detection in commercial banks in Nigerian.

H_{A1}: The application of commercial data mining technique (CDM) has a significant effect on fraud prevention and detection in commercial banks in Nigerian.

Decision rule: accept H_{O1} if probability of t-stats is greater than 0.05 else reject H_{O1}. From our model we can see that CDM has a probability of 0.000 which is less than 0.05, therefore we reject the notion that the application of commercial data mining technique (CDM) by banks has no significant effect on fraud prevention and detection in the commercial banks in Nigerian rather accept that, the application of commercial data mining technique (CDM) has significant effect on fraud prevention and detection in the commercial banks operations. This implies that commercial data mining technique has a significant effect in preventing or detecting fraudulent activities in the banking system in Nigerian. This is in agreement with [24,35&37].

Hypothesis 2:

H_{O2}: The application of ratio analysis (RAS) technique has no significant effect on fraud prevention and detection in commercial banks in Nigerian.

H_{A2}: The application of ratio analysis (RAS) technique has a significant effect on fraud prevention and detection in commercial banks in Nigerian.

Decision rule: accept H_{O2} if probability of t-stats is greater than 0.05 else reject H_{O2}. From our model we can see that ratio analysis technique has a probability of 0.000 which is less than 0.05. Arising from the result, the null hypothesis is rejected while the alternative hypothesis that ratio analysis technique has a significant effect on preventing and detecting fraudulent activities in the banking system in Nigeria is accepted.

Hypothesis 3:

H_{03}: The application of trend (TRD) analysis technique has no significant effect on fraud prevention and detection in commercial banks in Nigerian.

H_{A3}: The application of trend (TRD) analysis technique has a significant effect on fraud prevention and detection in commercial banks in Nigerian.

Decision rule: accept H_{O3} if probability of t-stats is greater than 0.05 else reject H_{O3}. The model result shows a probability of 0.000 which is less than the test significance of 0.05. Arising from the result, the null hypothesis is hereby rejected while the alternate hypothesis that trend analysis technique has a significant effect in preventing and detecting fraudulent activities within the banking system is accepted.

5. Discussion of Findings

The descriptive statistics in Table 2 shows that the mean response for the entire commercial data mining is 27.0500 which indicated that the average responses to the nine belief statements clustered around the undecided responses. This implies their lack of awareness of the functionality of data mining technique in detecting and preventing fraudulent activities in the banks. The standard deviation of 5.09383 is an indication of the degree of dispersion of the total responses from the mean response. The maximum and minimum values are 33.00 and 20.00 respectively.

Also, the mean response for the entire ratio analysis technique sample in Table 2 is 40.4714 which translated to average response of the nine belief statements clustering between strongly agreed and agreed responses. That is most of the respondents' responses either fell under strongly agreed or agreed. This shows the awareness of the respondents to the application of ratio analysis as forensic accounting technique that can be used in detecting and preventing fraudulent acts. The standard deviation of 4.68803 indicates the degree of dispersion of the total responses from the mean response. The maximum and minimum values are 45.00 and 34.00 respectively.

Similarly, the mean response for the entire trend analysis technique sample in Table 2 is 22.1286. This showed the average response of the six belief statements clustering between agreed and undecided responses. That is most of the respondents' where either agreeing or undecided to the belief questions. Again this implies respondents' limited awareness of the functionality of trend analysis technique in detecting and preventing fraudulent activities in the banks. The standard deviation of 4.86337 indicates the degree of dispersion of the total responses from the mean response. The maximum and minimum values are 27.00 and 12.00 respectively.

The mean response for the entire dependent variable sample in Table 2 is 33.6429. This showed the average response of the nine belief statements skewed to agreed response. Again this highlights respondents' degree of knowledge of policies in place to detecting and preventing fraudulent activities in the banks. The standard deviation of 2.91873 indicates the degree of dispersion of the total responses from the mean response. The maximum and minimum values are 37.00 and 27.00 respectively.

The Ordinary Least Squares (OLS) results presented in Table 3 revealed positive and significant relationship between the commercial data mining, ratio analysis and trend analysis and fraud prevention and detection in the banking sector. This is evidenced by their correlation coefficients of 0.746, 0.855 and 0.782 and their probability values of 0.000, 0.000 and 0.000. The result implies application of forensic accounting techniques in the operations of the banks have strong association with fraud prevention and detection in the system. This confirms the various studies on the impact of forensic accounting on fraud detection and prevention, [4,5,13,14,10,31&12].

Table 4 is the econometric linear model specified in our model equation. The result suggests that a one unit rise in data mining leads to 14.5 unit increase in fraud prevention and detection with a probability value (p= 0.000). The probability value (0.000) is less than the test significance level of $\alpha < 0.05$. This is in agreement with [24,35,&37]. Also one unit rise in ratio analysis technique in the banks' operations leads to 22.5 unit increase in fraud prevention and detection with also probability value (p=0.000) which again is less than the test significance level of $\alpha < 0.05$. The result similarly revealed a one unit rise in in the use of forensic accounting technique of trend analysis leads to 22.9 unit increase in fraud prevention and detection commercial banks in Nigeria with a similarly probability value (p=0.000) which is less than the test significance level of $\alpha < 0.05$, implying the significant effect that trend analysis which is one of the forensic accounting techniques has on fraud prevention and detection in commercial banks operations. Likewise, the coefficient of determination (adjusted R-Square) shows that 79.1 per cent of the variation in fraud prevention and detection is attributable to the application of forensic accounting techniques proxies of data mining, ratio and trend analysis techniques by the banks while the remaining 20.9 per cent is due to other factors not included in the model. The F-ratio of 164.169 confirmed the fitness of the model to test the data. The Durbin Watson of 0.160 indicates positive autocorrelation among the variables.

The three forensic accounting techniques studied (CDM, RAS and TRD) are significant and positively related to fraud prevention and detection in the commercial banks in Nigeria with probability value ($p = 0.000$) at 0.05 per cent significance level. The result reveals that everyone per cent increase in CDM, RAS and TRD will lead to 14.50 per cent. 22.50 per cent and 22.90 per cent respectively in fraud prevention and detection in the commercial banks in Nigeria.

5.1. Summary of Findings

This study revealed that a significant relationship exists between forensic accounting techniques application and fraud detection and prevention as the three forensic accounting techniques investigated have positive relationship between with fraud detection and prevention in commercial banks in Nigeria. The study specifically showed that data mining software is a veritable in detecting and preventing fraudulent practices in the banking sector. Also, the study highlighted the importance of ratio analysis technique as it is also a veritable tool to detect and prevent fraudulent activities in the banking operations. Thirdly, the study showed the importance of trend analysis technique in detecting and preventing fraudulent practices.

5.2. Conclusions

Arising from the analysis of participants' responses, many bank staff are ignorant of what data mining software is all about and so they were on the fence in their responses to the belief questions put across to them. Also from the analysis of participants' responses, there is limited awareness of trend analysis technique as a tool that can be employed to detect or prevent fraud in the system.

5.3. Recommendations

In view of the observations and findings that the application of forensic accounting techniques have the potential to detect or prevent fraudulent practices in the banking system and the apparent weaknesses highlighted, we recommend as follows:

1. All commercial banks as a regulatory policy should be mandated to install robust commercial data mining software in their internal audit units and Servers across the branches. Also as the banks embraces technology, there should be human capacity building through staff training in information technology system.
2. Anonymous response hotline should be introduced in all the banks and extensive awareness put in place for the attention of the public.
3. The data mining software should incorporate features that will capture independently from the branch management instances where deposits and withdrawals from same account are made on a given date to be used in cross checking the exception reports from branches on the subject matter. Also features that will capture exception reports reflecting fraudulent transactions with unusual questionable patterns of supervisory overrides or transactions with no apparent business purposes as well as instances where accounts are either opened or closed or transactions are effected in an account in the absence of the account holder.

Annexures

Questionnaires Analysis

Key:
SA = Strongly Agree
A = Agree
UD = Undecided
DA = Disagree
SD = Strongly Disagree

Table 1A. Analysis of commercial data mining technique questionnaire

S/N	Belief statement	SA	A	UD	DA	SD
	Commercial Data Mining Software					
1	The bank hasn't the technique that can examine loan portfolio trends of customers by sector, age and individual		125	15		
2	The bank hasn't facility that looks for anomalies in the banks database		10	130		
3	The bank hasn't the facility that detect amount of pass due	54	68	18		
4	The bank hasn't facility to electronically compare employees telephone numbers with customers telephone numbers		69	23	21	27
5	The bank hasn't a software that reports transactions with no apparent business purpose and transactions involving unusually large amounts		69	31	29	11
6	The bank hasn't the possibility of identifying instances of journal vouchers containing only one signatory and reflecting transfers between different customers' accounts		69	30	40	1

S/N	Belief statement	SA	A	UD	DA	SD
	Commercial Data Mining Software					
7	The bank hasn't the possibility of identifying instances of deposits and withdrawals from the same account made on the same day or within a short period of time and not appearing on the exception reports			55	49	36
8	The bank hasn't the possibility of identifying instances of customers not present when accounts were opened and closed or when transactions were effected in their account			50	65	25
9	The bank hasn't the software that reports exception reports reflecting fraudulent transactions which exhibits unusual, atypical and otherwise questionable patterns of supervisory overrides, transactions with no apparent business purpose and transactions involving unusually large amounts			50	73	17

Source: Field survey analysis

Table 1B. Analysis of Ratio analysis technique questionnaire

S/N	Belief statement	SA	A	UD	DA	SD
	Ratio analysis technique					
1	Ratio analysis is the use of our accounting information to help us be aware of prospective problems and to compare with other industry ratios.	79	61			
2	Return on Assets (ROA) is expressed as: Net Income divided by Total Assets, Multiplied by 100. This ratio is computed in your bank to measure how management is using its assets to generate more income.	79	61			
3	Return on Equity (ROE) is expressed as: Net Income divided by average Equity, Multiplied by 100. This ratio is computed in your bank to measure how well management is using investments (shareholders fund) to generate more income.	79	61			
4	Return on Investment (ROI) is expressed as: Net Income divided by cost of investment, Multiplied by 100. This ratio is computed in your bank to evaluate the efficiency of an investment or compare the efficiency of a number of different investments.	43	57	31	9	
5	Debt-to-assets ratio is an indicator of a company financial leverage. Expressed mathematically as Total debt divided by total assets. This ratio is computed in your bank to measure total assets financed by creditors.	79	61			
6	Debt-to-equity ratio is an indicator of a company financial leverage. Expressed mathematically as Total debt divided by total equity. This ratio is computed in your bank to measure if it has more debt financing than equity financing and vice versa.	79	61			
7	Debt-to-capital ratio is an indicator of a company capital structure, financial solvency and degree of leverage. Expressed mathematically as Total debt divided by total debt plus total equity. This ratio is computed in your bank to measure total debt and financial liabilities against the total shareholders' equity.	79	61			
8	Asset-to-equity ratio is an indicator of a company financial leverage. Expressed mathematically as Total assets divided by total equity. This ratio is computed in your bank to measure the portion of the bank's assets that are financed by shareholders equity.	79	61			
9	The cash ratio compares a company's liquid assets to its current liabilities. It is the most conservative of all liquidity measurements. Expressed mathematically as Total cash and cash equivalents divided by current liabilities. Your bank uses this ratio to determine if it can meet its short-term obligations.	79	61			

Source: Field survey analysis

Table 1C. Analysis of Trend analysis technique questionnaire

S/N	Belief statement	SA	A	UD	DA	SD
	Trend analysis technique					
1	The bank has not the technique that can compare loan granted to customers categorized into principal sum, date of loan and name of approving/booking officials	41	59	23	17	
2	The bank has not the facility that has register of gratifications to staff and comparing yearly impact on staff character		105	14	21	
3	The facility enables procurement prices to be cross-checked outside monthly and BY sector.		55	64	21	
4	The facility enables effective monitoring of employees via telephones, their financial transactions and close associate		105	14	21	
5	The facility is enabled to detect all possible collusion between employees and others in business transactions		105	14	21	
6	The facility is enabled to detect loose internal controls in the bank operations	55	35	18	32	

Source: Field survey analysis

Table 1D. Analysis of Fraud prevention/detection questionnaire

S/N	Belief statement	SA	A	UD	DA	SD
	Fraud Detection/Prevention					
1	There is no policy in the bank to report all fraudulent cases to the public.					
2	There is no deliberate policy in the bank to prosecute all fraud perpetrators in court without fear of backlash					
3	Risk assessment processes under forensic accounting does specially cover risk of fraud					
4	Staff are not allowed to grant overdraft facilities to one singular customer					
5	There is no policy regulating the frequency of staff going on vacation					
6	There is no policy regulating gratification to staff from customers.					
7	There is no policy as to how long a staff spends in a given department.					
8	The banks' response hotline does not acts swiftly to anonymous tips.					
9	It is not normal for a staff to grant temporary overdraft without reporting to the head office					

Source: Field survey analysis

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FORENSIC ACCOUNTING AND FINANCIAL CRIMES CONTROL IN NIGERIAN COMMERCIAL BANKS IN NIGERIA

ABSTRACT

The study examined forensic accounting and financial crimes control in Nigerian Commercial banks in Nigeria. The objectives of the study among others were; to examine the relationship between expert witness and money laundering control commercial banks Nigeria. To investigate the relationship between expert witness and bribery control commercial banks Nigeria. To investigate the relationship between expert witness and falsification of records commercial banks Nigeria. The study adopted correlational survey research design. The population for this study is twenty-one (21) commercial banks in Nigeria. The sample size is 300 respondents in twenty-one (21) commercial banks in Nigeria. The instrument for this study was the questionnaire. The research questions were analyzed using Mean and Standard Deviation in the distributive statistics tables. The formulated hypotheses were tested using the simple bivariate regression analysis. The findings of the study among others were that; there is no significant relationship between expert witness and money laundering control commercial banks Nigeria. There is a significant relationship between expert witness and bribery control commercial banks Nigeria. There is a significant relationship between expert witness and falsification of record control commercial banks Nigeria. Based on the findings of the study, the following recommendations are therefore made among others; shareholders and directors of banking industry should provide regular training on data mining techniques to equip their accounting staff with the relevant and up-to-date skills, abilities, attitude and competences for fraud detection. The Institute of Chartered Accountants of Nigerian should organise regular conferences, seminars and workshops for their members where emerging trends in anonymous communication are highlighted to help professional accountants and auditors detect and prevent frauds or at least reduce the incidence to save their employers. Bank staff should endeavour to support forensic auditors with relevant background information that could lead to fraud detection to ensure that the occurrence of fraud is minimised to the barest minimum.

INTRODUCTION

The banking industry in Nigerian is one of the most controlled and regulated industries. Despite this, financial crimes have perpetually reared its ugly face in the industry. Financial crimes are illegitimate activities committed with the purpose of amassing riches either individually, in group or organizationally, thereby violating existing legislation or accounting standards and policies governing the economic activities and administration of the banking industry (Ojaide, 2020). Today, the events of fraud and other financial crimes have gone sophisticated and even more computerized with the introduction of internet facilities. Hence, the detection and / or reduction of these fraudulent activities are made more difficult and committing these crimes much easier. Onodi, et al., (2019), opined those forensic investigative skills are required to expose and establish the occurrence of financial crimes.

Thus, forensic accounting is a new specialty area in accounting profession that involves intellectual application of accounting, auditing and investigative expertise to collect, analyze and report financial information for the purpose of finding reliable evidences suitable for use at the law court or in administrative proceedings. Forensic accounting refers to the application of analytical and investigative skills for the purpose of resolving financial issues in a manner that meets standards required by court of law. Forensic accounting services are often provided in the areas of litigation support engagement, fraud investigation, expert witnessing, forensic expert consultation, dispute resolution and a host of other services, using an intuition approach (Chen & Akkeren, 2021). Imoniana et al., (2021). also identify prominent areas of forensic accounting service to include: economic damages calculations (whether suffered through tort or breach of contract); litigation support. business/employee fraud investigations, financial/securities frauds, business interruptions/business failures, computer forensics/c- discovery, discovery of hidden assets, professional negligence, matrimonial disputes.

Globally, financial crimes and frauds occurrence in corporate enterprises is becoming pandemic and it has shown in a large number of reported cases of falsification of records, embezzlement, bribery, money laundering, tax evasion, racketeering, fraudulent forgery, financial reporting, etc, are through which both financial and economic dishonesty are being committed (Ofiafoh & Otalor, 2013). Hence recent banking failures could be drawn in Nigeria via management who has fraudulently give loans without board approval or diversion of bank financial investment and yet such bank annual report has been audited unqualified (Eyisi & Ezuwore, 2014). Thus, there are issues to be addressed in commercial banks in Nigeria as financial crimes cases have only been detected after massive funds have disappeared from the coffers. Owojori and Asoula (2009), state that the failure of statutory audit to prevent or reduce corporate employee's misappropriation and embezzlement has put pressure on the professional accountant's and legal practitioners to find a better way of combating and exposing fraud in business entities in the world. therefore, focusing on expert witness and litigative support would be an efficient and sufficient means to unravel and control financial crimes in commercial banks in Nigeria.

Statement of the Problem

Unfortunately, Nigeria has been bedeviled with corruption in all facets of her polity and economy with the banking sector as a major victim from the late 1980s till today (Dike, et al., 2016). For instance, the Nigerian Deposit Insurance Corporation (NDIC) annual reports for various years revealed colossal frauds and forgeries in the banking sector soaring to billions of Naira. The contending issue is that despite the perception that there is a steady growth in the number of forensic accountants in the country, the rate of fraud across all banks continues to climb exponentially (Emeh & Obi, 2021; Adebisi, et al., 2016; Dike et al., 2016; Abaje & Adeniran, 2017; Oseni, 2017).

In an attempt to address this problem, prior empirical studies (Emeh & Obi, 2021; Enofe, et al., 2019) report that effectiveness of forensic accounting and the presence of forensic accountants can reduce the occurrence of fraud. Their engagement by the Federal Government in 2019 to investigate the case of the nine collapsed banks in Nigeria was noticeable, which led to detection of about one trillion naira reported to have been lost through different financial malpractices. It is perturbing to note that this intervention does not seem to have yielded any positive result as fraud has continued to cripple the expected growth of banks prompting curiosity for further investigation.

Several empirical studies have been conducted to examine the effect of forensic accounting on fraud or financial crime in commercial banks in Nigeria. These studies mainly concentrated on the use of forensic accounting in detecting or investigating financial crimes or frauds in various sectors / industries especially in the deposit money banks. Therefore, these published studies focused on studying or investigating financial crimes and frauds that have already been committed either by employee, group or organizationally in commercial banks for litigation.

Hence, no known research has been studied on the effect of forensic accounting on financial crime control. Which is the application of forensic accounting in controlling or preventing financial crimes before it occurs in commercial banks in Nigeria to the best of our knowledge

Again, from the empirical studies reviewed, it was observed that most of the previous studies do not link each dimensions of forensic accounting (expert witness and litigation support) to the measures of financial crime control (money laundering, bribery control and falsification of records) to determine their extent of relationship, rather they came up with a broad conclusion that forensic accounting has a positive relationship with fraud or financial crime, this is also to the best of our knowledge. This study also fill the vague literature gap of moderating variable of environmental factor by providing Economic and Financial Crime Commission (EFCC). Hence, there is a need to link each dimension of forensic accounting to the measure of financial crime control as to ascertain which aspect is related. This study by examining these dimensions of forensic accounting and measures of financial crimes control in commercial banks will fill the existing research gap in forensic accounting and financial crime control in commercial banks in Nigeria.

Conceptual Framework

The study has two main variables, dependent and independent. Forensic accounting is the independent variable of the study and its dimensions are: litigation support and expert witness. Financial crimes control is the dependent variable and is measured with, money laundering, bribery and falsification of records and economic and financial crime commission (EFCC) as an environmental factor variable, shown using the chart below.

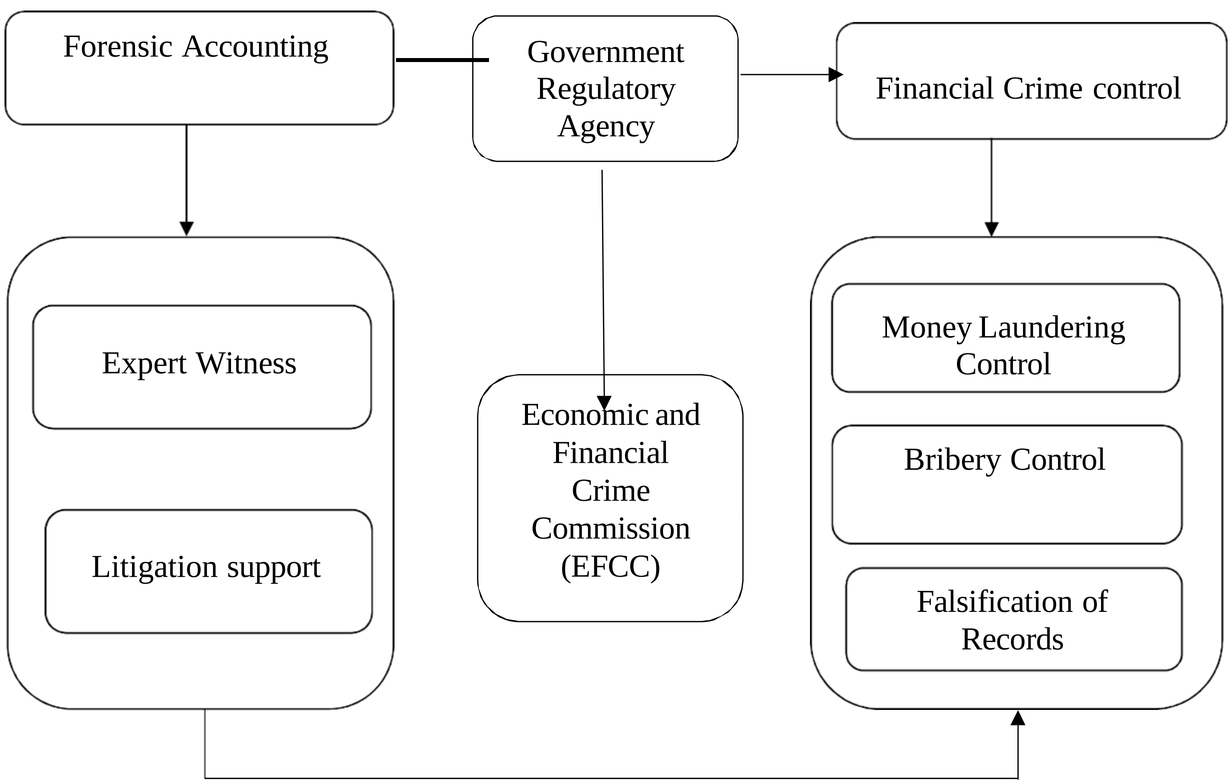

Figure 1.1 Researcher's Conceptual Framework Model

Sources of conceptualization

Zachariah, et al., (2021), Enofe and Otalor, (2103), Ewa and Udoayang (2021) and Researcher's conceptualization, 2020

Aim/Objective of the Study

The aim of this study is to investigate forensic accounting and financial crimes control in Nigerian Commercial banks in Nigeria. Specifically, the study attains the following objectives to:

1. Determine the relationship between expert witness and money laundering control in commercial banks in Nigeria.
2. Investigate the relationship between expert witness and bribery control in commercial banks in Nigeria.
3. Investigate the relationship between expert witness and falsification of records in commercial banks in Nigeria.
4. Evaluate the relationship between litigation support and money laundering control in commercial banks in Nigeria.
5. Determine the relationship between litigation support and bribery control in commercial banks in Nigeria.
6. Investigate the relationship between litigation support and falsification of records in commercial banks in Nigeria.
7. Evaluate the moderating influence of EFCC in the relationship between forensic accounting and financial crime control of commercial banks in Nigeria.

Research Hypotheses

In order to provide answers to the research questions raised, the following hypotheses stated in null form are presented below:

$H0_1$: There is no significant relationship between expert witness and money laundering control in commercial banks in Nigeria.

HO_2: There is no significant relationship between expert witness and bribery control in commercial banks in Nigeria.

HO_3: There is no significant relationship between expert witness and falsification of records in commercial banks in Nigeria.

HO_4: There is no significant relationship between litigation support and laundering control in commercial banks in Nigeria.

HO_5: There is no significant relationship between litigation support and bribery control in commercial banks in Nigeria.

HO_6: There is no significant relationship between litigation support and falsification of records in commercial banks in Nigeria state.

HO_7: EFCC does not influence the relationship between forensic accounting and financial crime control of commercial banks in Nigeria.

Conceptual Framework Concept of Forensic Accounting

Howard and Sheetz (2019), opined that forensic accounting is the process of interpreting, summarizing and presenting complex financial issues clearly, succinctly and factually often in a court of law as an expert. In the view of Okunbor and Obaretin (2010), it involves the use of accounting discipline to help determine issues of facts in business litigation. According to Skousen and Wright (2018), forensic accounting is an accounting field of study that has its own methodologies and models of investigative techniques that search for assurance, attestation and advisory viewpoint to produce legal evidence. It is concerned with the evidentiary nature of accounting data, and as a practical field tied up with fraud and forensic auditing; compliance, risk assessment and due diligence; financial statement fraud and detection of financial misrepresentation, tax evasion, bankruptcy and valuation studies; violation of accounting regulation. Curtis (2018), added that fraud can be subjected to forensic accounting, since fraud comprise of acquisition of property or economic advantage by means of deception, through either a misrepresentation or camouflage. Bhasin (2007), notes that the design of forensic accounting include: assessment of damages caused by an auditor's neglectfulness, fact finding to see whether an embezzlement has taken place, in what amount, and whether criminal proceedings are to be initiated; collection of evidence in a criminal proceeding. Hence corporate enterprises like banks are essentially made-up physical actors; persons who execute some functions and / or tasks that lead to the attainment of certain goals and these stakeholders who are probably within and / or outside the enterprise may for various reasons have engaged in fraudulent financial crimes, (Akenbor & Oghoghomeh, 2021). The banking industry in Nigerian is one of the most controlled and regulated industries. Despite this, financial crimes have perpetually reared its ugly face in the industry. Financial crimes are illegitimate activities committed with the purpose of amasses riches either individually, in group or organizationally, thereby violating existing legislation or accounting standards and policies governing the economic activities and administration of the banking industry, (Ojaide, 2020).

Dimensions of Predictor Variables

Expert Witness Service

Expert witness; is a witness provided by a professional who is knowledgeable and skillful in the field of the case under investigation. Institute of Forensic Accounting in Nigeria (2016) reported that an expert witness is member who has been engaged, assigned or otherwise obligated to provide an Expert Witness Service. As an Expert Witness, the Member may express opinions or provide Other Evidence to the Court based on the Member's specialized knowledge derived from the Member's training, study or experience on matters such as whether technical or Professional Standards have been breached, the amount of damages, the amount of an account of profits, or the amount of a claim under an insurance policy (Zachariah et al., 2021).

Generally, all opinion evidence is expert evidence if it is wholly or substantially based on the specialized knowledge derived from the Member's training, study or experience, however not all expert evidence is opinion evidence. Expert evidence may be opinion or Other Evidence. A forensic accountant plays an important role in the criminal investigation, and expert witnessing in the law court to assist the judge in understanding accounting language. Being an expert witness is a key attribute of a forensic investigator and it is essential that they are suitably trained and qualified to provide this service (Okolie, 2021).

When an accounting expert is called to testify as a fact-finding witness, he or she is expected to offer only factual analysis regarding the case without rendering an opinion (Michaelson, 2005). Effiong (2021), stated that the perception of objectivity is an important element for a forensic accountant engaging in expert testimony. The transparency of an experts' impartiality is vital from a critical position because this ultimately establishes the credibility of the expert's findings. Thus, scholars believed that with the creation of forensic accountant as an expert witness, aid enforcement in the fight against coordinated and complex financial fraud and economic crime in our society, leading our society, leading to reduction in fraudulent activities.

Litigation Support

Litigation is a term encompassing the use of court processes to resolve a dispute, in line with the rules in place in that jurisdiction. According to Harwood (2016), stages in litigation involves before litigation starts, preparing a case and finally, trial and enforcement. Before litigation begins various forms of preliminary investigations takes place also, various forms of alternative dispute resolution (ADR) are encouraged to be examined. It is encouraged that parties consider alternative means of resolving the disputes first. The more conventional alternative dispute resolution (ADR) options include: Arbitration a confidential form of dispute resolution where one or more arbitrators decide a case rather than a court appointed judge. Mediation is a facilitated negotiation assisted by an independent third- party mediator appointed by the parties. An independent expert is appointed to resolve the matter by producing a legally binding decision (Harwood, 2016). In preparing cases for litigation claim forms and particulars of claims for both parties are drafted and served accordingly, this is usually followed by defense and counter claims and replies by the parties involved. Allocations and directions for future conducts of the case are done, presentation of documents, statements by witnessing, expert reports and meetings with experts all form part of the preparation of cases for litigations. This stage is now followed by the trial and enforcement stage as well as appeals by the parties involved. The concept of litigation and business advisory adopted in this study is how the fear and possible avoidance of a court process as well as yielding to expert's objective and independent advice as a forensic accounting technique can serve as an instrument for mitigating as well as possible curbing of financial crimes in the public sector organizations by the perpetrators of these crimes (Harwood, 2016).

Litigation Support provides assistance of an accounting nature in a matter involving existing or pending litigation. It deals primarily with issues related to the quantification of economic damages. A typical litigation support assignment would be calculating the economic loss resulting from a breach of contract in court. Litigation support interprets and represents problems which are current and are about going for litigation at the law court. It helps in the utilization of the forensic accountant or the expert witness or job performance. The forensic accountant /expert witness or is called upon to show some evidence as the litigation proceedings are on. The expert in this field is also required to make his or her input in the resolution of the court cases, (Dhar & Sarkar, 2010).

Financial crimes Control

Financial crimes are a form of theft/larceny that occur when a person or entity takes resources (money or property), or uses them in an illegitimate manner, with the intent to gain a benefit from it. These crimes typically involve some form of deceit, subterfuge or the abuse of a position of trust, which distinguishes them from common theft or robbery. Financial crimes may involve falsification of records (fraudulent loans, and diversion of financial investment crimes) litigation of money laundering crimes, and bribery (financial statements crimes by employees and auditors, management and other frauds or financial crimes in the organization) theft; embezzlement, tax evasion, scams or confidence tricks, identity theft, forgery and counterfeiting (production of counterfeit money and consumer goods), Fraud (mortgage fraud, cheques fraud, credit card fraud, corporate fraud, securities fraud such as insider trading, market manipulation, medical fraud, insurance fraud, bank fraud, payment (point of sale) fraud, health care fraud). Financial crimes may be carried out by individuals, corporations, or by organized crime groups. Victims may include individuals, corporations, governments, and entire economies, (Amahalu, et al., 2018).

Imoniana, et al., (2021), explained financial crime as acts and statements through which financial market participants misinform or mislead other participants in the market by intentionally or recklessly providing them with fraudulent, incomplete, or manipulative information related to investment opportunities, products, services, or in a way that breach any kind of legal rule or law, be it a regulatory rule, statutory law, civil law, or criminal law. In legal and regulatory parlance, such acts are often described in terms of “misrepresentations,” “misreporting,” “false disclosure,” “non-disclosure,” or “fraud.”

Financial crimes have differently been described in various literatures. No one description is sufficient. Wikimedia dictionary on financial crimes describes financial crimes as crimes against resources, involving the illegal conversion of resources belonging to another (business enterprise) to one ‘s owns. Williams (2005), associated falsification of records to his explanation of financial crimes. Other components of financial crimes by William‘s, (2010) explanation include; bribes sufferance, nepotism, graft, artificial pricing and frauds of all kinds. The constituent of financial crimes, some of which are highlighted above, are just few. Hence, the EFCC Act (2004), venture to grasping the various economic and financial crimes found within organizations internally or externally. The definition included, “violent, criminal and illicit activities committed with the objective of earning wealth illegally… in a manner that violates existing legislation and these include any form of fraud, narcotic drug, trafficking, money laundering, embezzlement, bribery, looting and any form of corrupt malpractices and child labour, illegal oil bunkering and illegal mining, tax evasion, foreign exchange malpractice including counterfeiting, currency, theft of intellectual property and piracy, open market abuse, dumping of toxic waste and prohibited goods, etc”. This definition is all-encompassing and feasibly includes financial crimes in corporate enterprises.

Measures of Consequences of Financial Crimes

Falsification of Records

Falsification of records is the act of destroy, alter, mutilate, or falsify any original documents are considered as falsifying. In the accounting context, it is referred as false accounting which is the falsification, concealment, or destruction of records, (Shah, et al., 2011) and is commonly used as the way to trick people into parting with money or any other property, or to cover up what have been done by falsifying the account (Rantanlal & Dhirajlal, 2007). Falsification of documents, forgery, and fraud are categorized as white colour crime offences. To establish successful prosecution and civil claim, the prosecutor and claimant must prove the intention and conduct of the accused person and the presumption of intention that fall under respective statutory provision. Falsifying financial statements involves the manipulation of financial accounts by overstating assets, sales and profit, or understating liabilities, expenses or losses. This paper explores the effectiveness of an innovative classification methodology in detecting firms that issue falsified financial statements (FFS) and the identification of the factors associated to FFS (Ibu et al., 2019).

In R v. Shama 91 Cr App R138, the act of falsifying the documents includes the act of making a false entry. In the case of Tan Ker Loo v. Pendakwaraya [2011] MLJ 714, the court ruled the knowledge over and falsifying the documents is important to determine liabilities. The court emphasis the element of knowledge as an important aspect of determining the conviction for falsifying the specific documents for the purpose of defrauding others and obtaining specific financial advantages. However, in forgery cases, the court approach is different.

Money Laundering

This is a financial crime of concealment in the flow of fund. It represents the illegal flow of money across the borders of states or nations. Corporate enterprises could be victims especially deposit money banks. The Money Laundering (Prohibition) Act, 2004 makes various provisions prohibiting laundering of money as proceeds of crimes or illegal activity, and provides for appropriate penalties for money laundering infringements. According to the Money Laundering Act, no person or corporation or enterprise is allowed to make or accept cash payments of a sum in excess of five hundred thousand naira (₦500, 000.00) and two million naira

(₦2,000,000.00) or its equivalent in the case of an individual, and enterprise respectively, unless such cash payment or acceptance is undertaken through a deposit money banks, (Owojori & Asaolu, 2019). Onuorah and Ebimobowei (2011), a transfer of funds or securities to or from a foreign country in excess of $10,000 dollars or its naira equivalent must be reported to the Central Bank of Nigeria or the Securities and Exchange Commission in the case of a public enterprise. The mandatory reporting of all monetary transfers to or from outside the country must indicate the nature of the transfer, the amount of the transfer, the names and addresses of the sender and the receiver of the funds or securities that were transferred, and the ultimate beneficiary of the transfer if different from the latter persons. The Money Laundering Act (Prohibition) (2004) of Nigeria is an attempt to control the illegal flow of funds into and out of Nigeria including funds from corporate enterprises. Top management and opportunist ride on the back of the organization to embezzle funds met for the organization. Joseph (2021), estimates that funds laundered across the globe are between $300 and $500 million worldwide. In the context of fund flowing from the organization and committed by staff from within, it is a financial crime from within. The law specifies what constitutes money laundering offences and the liability of directors of financial institutions in the event of money laundering offences. Even though the Act provides that any movement of cash in excess of five hundred thousand naira (₦500, 000.00) or its equivalent in the case of an individual now one million (₦1, 000, 000.00) and two million naira (₦2, 000,000.00) or its equivalent in the case of an enterprise, now ten million (₦10, 000,000.00) for corporate enterprise beyond should be reported to CBN; this has in most cases not been the case because of the sophistication in the act of committing the crime.

Money laundering is the criminal act of filtering illegally obtained (dirty) money through a series of transactions designed to make the money appear legitimate (clean). Money laundering often involves three steps. First, the money is deposited typically into a financial institution such as a bank or brokerage. Next, the money is separated from its illegal origin by layers of often complex transactions, making it more difficult to trace the "dirty" money. The third step is integration. This is where the freshly "cleaned" money is mixed with legally obtained money, often through the purchase or sale of assets. top management staff assist and also involve in this practice. Thus, litigation of money laundering crimes by forensic accountant becomes necessary (Ramaswany, 2019).

Bribery

According to Wikipedia, bribery is the act of giving or receiving something of value in exchange for some kind of influence or action in return, that the recipient would otherwise not alter. Bribery is defined by Black's Law Dictionary as the offering, giving, receiving, or soliciting of any item of value to influence the actions of an official or other person in charge of a public or legal duty. Essentially, bribery is offering to do something for someone for the expressed purpose of receiving something in exchange. Gifts of money or other items of value which are otherwise available to everyone on an equivalent basis, and not for dishonest purposes, is not bribery. Offering a discount or a refund to all purchasers is a legal rebate and is not bribery. For example, it is legal for an employee of a public utilities commission involved in electric rate regulation to accept a rebate on electric service that reduces their cost for electricity, when the rebate is available to other residential electric customers. Giving the rebate to influence them to look favorably on the electric utility's rate increase applications, however, would be considered bribery. According to Ine-Tonbarapa (2017), a bribe is the gift bestowed to influence the recipient's conduct. It may be money, goods, rights in action, property, preferment, privilege, emolument, objects of value, advantage, or merely a promise to induce or influence the action, vote, or influence of a person in an official or public capacity.

Ine-Tonbarapa, many types of payments or favors can constitute bribery: skim, inflated sale of an object or property, gift, waived fee/ticket, sop, perk, discount, tip, favor, free trip, free tickets, sweetheart deal, kickback/payback, funding, sweetheart deal, lucrative contract, stock options, campaign contribution, secret commission, or promotion (rise of position/rank).

Employees, managers, or salespeople of a business may offer money or gifts to a potential client in exchange for business. For example, in 2019, German prosecutors conducted a wide- ranging investigation of Siemens AG to determine if Siemens employees paid bribes in exchange for business and mostly practiced by the banking industry. In some cases, like Nigeria, where the system of law is not well-implemented, bribes may be a way for companies to continue their businesses. In the case, for example, custom officials may harass a certain firm or production plant, officially stating they are checking for irregularities, halting production or stalling other normal activities of a firm. The disruption may cause losses to the firm that exceeds the amount of money to pay off the official. Bribing the officials is a common way to deal with this issue in countries where there exists no firm system of reporting these semi-illegal activities. A third party, known as a White Glove, may be involved to act as a clean middleman, (Ine-Tonbarapa, 2017).

Forensic Accounting and Financial Crimes Control

Numerous third world and developing countries are perplexed with either falsification of records or high falsification of records index perception due to weak regulatory environments. Thus, many a time's statutory audit has shown passive and disinterested attitude towards financial crimes fighting and have failed to inform the public with the needed guarantee and professionalism of their preparedness to stand up to falsification of records, bribery, money laundering, etc. The Nigerian Economy has been attributed traditional problem of financial crime has hindered the economic growth and development of the nation. According to EFCC (2004), financial crimes such as bribery, bankruptcy, security fraud, embezzlement, among others, have taken the center stage in both private and public financial discourse and is assuming a position of preeminence.

Hence is of utmost believe that since the traditional auditing can't properly laid down guidelines to control and prevent financial crimes, forensic accounting can be used in prosecuting and or controlling financial crimes in corporate enterprises especially commercial banks in Nigeria.

Forensic accounting is field of specialization that has to do with provision of information that is meant to be used as evidence of internal control and especially for legal purposes, (Cole, 2019). The persons practicing in this field (i.e. forensic accountants) investigate and documents financial crimes and white-collar crimes. They provide those services for corporation, attorney, criminal investigators and the government. Coenen, (2005), in Zysman (2001), that forensic accountant's engagements and job descriptions are usually geared towards finding where money went, how it got there, who was responsible, filling documents for litigation and finally establishing control measures for reoccurrences. In the view of Bhasin (2007), "forensic accountants are trained to look beyond the numbers and deal with the business realities of situations; summarization, analysis, interpretation, and the presentation of complex financial business-related issues and recommendations are prominent features of the profession. He further reported that the activities of forensic accountants involve investigating and analyzing financial evidence by developing computerized applications to assists in future analysis and presentation of financial evidence. Their findings in the form of reports, exhibits and collections of documents and assisting in legal proceedings, including testifying in courts, as an expert witness and preparing visual aids to support trial evidence".

The application of forensic accounting in financial crime control is a necessity. As opined by Akenbor and Oghoghomen, (2021), most cases corporate enterprises has loss valuable employees as a result prosecution, found guilty and terminated of their job or innocent employees who may voluntarily resign their employment due to humiliating experience they had during the financial crime investigation.

Crumbley (2003), discuss the field of forensic accounting as the product of forensic science and accounting, he describes forensic scientists as the examiners and interpreters of evidence and facts in legal matters. The science according to Sadiq (2018), involves the examination and interpretation of economic information. Thus, forensic accountant provides information that is used as evidence in the court of law. It investigates, appraises and documents financial fraud and white-collar crimes such as falsification of records (litigation of fraudulent loans, and adjudication of diversion of financial investment crimes) litigation of money laundering crimes, and bribery (adjudication of financial statements crimes by employees and auditors, management and other frauds or financial crimes in the organization). He estimates losses, damages and assets misappropriation and any other complex financial transaction. The whole process ends in the production of report which is tendered to assist in legal adjudication and internal control process.

Theoretical Framework

White Collar Crime Theory: Sutherland, 1949 cited in Michael (2004), defined white collar crime as crime committed by a person of respectable and high social status in the course of his occupation stating that white collar crime are crimes committed respectable and of high-status staff in his place of work. White collar criminals are intelligent, opportunists, affluent and educated individuals who believed they can take advantage of circumstances to accumulate financial gain. Commercial banks and their staff are highly educated and Fraudulent financial activities are illicit activities committed with the purpose of acquiring riches either individually, in group or organized manner thereby violating existing legislation or accounting policies governing the economic activities and administration of the organization. Hence, forensic accounting is needed to fast track these highly educated fraudulent staff of banks. via relating effectively with litigation of money laundering crimes, litigation of fraudulent loans, adjudication of diversion of financial investment crimes and adjudication of financial statements crimes.

Sutherland noted that in his time, less than 2 percent of the persons committed to Prison in a year belong to the upper class. He tried to establish a relationship between money, social status, and the likelihood of going to jail for a white-collar crime with a more visible, typical crime. He tried to separate and define the difference between the blue-collar street crimes like burglary, theft, rape, arson and vandalism which are often blamed on psychological, associational and structural factor with white collar crimes committed by criminals who are opportunists who overtime learn that they can take advantage of their circumstances to accumulate financial gains. These criminals are educated, intelligent, affluent individuals who can get a job which allows them unfettered and unmonitored access to often large sum of money. White collar crimes include such illegal acts which are characterize by deceit, concealment, or violation of trust and which are not dependent on the application of physical force or violence. This study will be anchored on white collar crime.

Reasons for anchoring on white collar fraud theory

Most white-collar crimes are committed in a business setting mostly banks, and all of them are committed for financial gain. In many instances, the person committing the white-collar crimes is a trusted acquaintance or senior staff that appears to be innocent while taking advantage of the relationship they have with their company.

White collar crimes occur over the course of weeks, months or years. It usually takes some time to establish a relationship of trust and then to carry out the act. Plus, if the white-collar crimes go undetected, the criminal can take advantage of the victim for a long time before being found out, as is sometimes the case when senior bankers embezzle funds from their banks and we hear it in the dailies and various news mediums. The amount of money lost due to white collar crimes amounts to hundreds of billions of dollars per year according to a New York Times article, (2017).

Empirical Literature Review

Many researchers have attempted to examine the effect of forensic accounting on financial crime investigation, some of these eminent scholars includes: Oseni (2017), examined the effects of forensic accounting services on fraud and financial crime detection and prevention in Nigeria. The survey designed was used in the study with a sample size of 160 consisting of Auchi Polytechnic, Edo State Ministry of Finance, Audit Firms and Federal Inland Revenue Services. The simple random technique was used as the sampling technique, while the chi- square was employed in the data analysis. The tests of hypothesis were done using Microsoft Excel 2010 version. Tests were carried out at a significant level of 5% and three degree of freedom. The paper concludes that financial crimes and fraud have serious negative effect on human capital and infrastructural development in developing economies, especially countries like Nigeria. Forensic accounting services provide corporate organizations with the necessary tools to detect and prevent frauds and financial crimes. The study therefore recommends that professional accounting bodies should constantly conduct forensic accounting training for accountants and Nigerians should embrace integrity, objectivity, fairness and accountability in their daily activities.

Kennedy and Anyaduba (2021), examined forensic accounting and financial fraud in Nigeria. Specifically, the study examined if there is significant agreement amongst stakeholders on the effectiveness of forensic accounting in financial fraud control, financial reporting and internal control quality. The survey design was used in the study with a sample size of 143 consisting of accountants, management staffs, practicing auditors and shareholders. The simple random technique was utilized in selecting the sample size, while the binomial test was employed in the data analysis. The findings of the study indicate that there is significant agreement amongst stakeholders on the effectiveness of forensic accounting in fraud control, financial reporting and internal control quality. In line with the above findings, we recommend that the Institute of Chartered Accountants of Nigeria, Association of National Accountants of Nigeria and the National Universities Commission should encourage formalization and specialization in the field forensic accounting. In addition, the government should stimulate interest in forensic accounting for monitoring and investigation of suspected corruption cases.

Izedonmi and Ibadin (2021), examined some basic and common financial crimes in corporate organizations, situating the focus on Nigeria, and by extension, the developing world. No doubt, financial crimes have affected individuals and corporate organizations negatively. Some instances of corporate scandals, occasioned by financial crimes, have put accounting professional bodies into a new perception and paradigm that go beyond statutory audit. This study discusses financial crimes and some basic and common financial crimes in corporate organizations. The review indicates that the motivations for financial crimes are built around some risk factors, which include the incentive (or pressure), opportunity and rationalization surrounding the financial criminals. This paper canvasses for the intervention of forensic accounting to solve the vexed problems of financial crimes with a further recommendation that the forensic accountant adopts the inference, relevance and logic solution approach (IRLS) in dealing with financial crimes in corporate organizations in Nigeria.

Enofe and Utomwen (2019), examined the role of forensic accounting in curbing financial crimes. The study adopts a survey research design. The method was adopted because it is likely to generate the kind of information required as well as providing good basis for the generalization of findings. The population of the study comprises of staffs of selected banks. Primary data was used for the purpose of this research. This research work employed the use of structured questionnaire in eliciting the required data needed to test the formulated hypotheses. Regression analysis was utilized as the method of data analysis and the results will be used in testing the hypotheses specified in the study. The study finding reveals that there is a need for forensic accountants in the Nigerian banking system, Forensic accounting is an effective tool for addressing financial crimes in the banking system and finally that Conventional accounting techniques are not effective in curbing financial crimes. The recommendation is that there is the need for corporations in Nigeria to engage the services of forensic accountants as forensic accounting now appears as a one of the strategic and dynamic tools for the management of all types of financial crimes. Also, they need to focus on training and up-dating the skills of the internal control and audit staffs.

Enofe, et al., (2019), examined the role of forensic accounting in combating financial crimes. The data for the study were collected through the administration of 100 copies of questionnaire to the respondents. The data was analyzed using chi square. The findings of the study showed that forensic accounting does not affect payroll fraud. Also, forensic accounting can curb management theft. The study recommends that the management in the public and private sector in Nigeria should cooperate with the forensic accountants in order to tackle the issue of financial crimes.

METHODOLOGY

This study basically adopted correlational research design. The instrument for this study was the questionnaire. At the time of this research, the population of the entire staff above in these financial institutions were one thousand one hundred and ninety-seven (1197) see appendix b. The sample size of this study is three hundred (300). The research questions were analyzed using Mean and Standard Deviation in the distributive statistics tables. A criterion means of 3.0 was set as a guideline for accepting and rejecting option. The criterion mean was calculated as follows: 5+4+3+2+1/5 = 3. The formulated hypotheses were tested using the simple bivariate regression analysis

Model Specification and Estimation

According to Nmesirionye et al., (2019), regression analysis is concerned with the study of how one or more variables affect changes in another variable. Thus, on the basis of the theoretical framework, the study adopted the regression formula adopted in the work of with some modifications. The model is specified as:

$Y = f\,(ao + bX_1) + Et$ Where:

y = Criterion variable

f = Function

x = Independent (explanatory) variables

a = Intercept

b = Slopes

In functional form, our hypotheses model are:

FCC = f (FA) + Et…..2

FCC = f (MLC + BC) + Et…..2

In functional form, our model is:

The First Model: The First hypothesis test model; shows the relationship between expert witness and money laundering: $H0_1$: MLC = f(EXW) .... (i)

The Second Model: The Second hypothesis test model; shows the relationship between expert witness and bribery control: $H0_2$: BC = f(EXW)..(ii)
The Third Model: The Third hypothesis test model; shows the relationship between expert witness and falsification of records: $H0_3$: FLS = f(EXW) ....(iii)
The Fourth Model: The Fourth hypothesis test model; shows the relationship between litigation support and money laundering control: $H0_4$: MLC = f(LGS)...(iv)
The Fifth Model: The Fifth hypothesis test model; shows the relationship between litigation support and bribery control: $H0_5$: BC = f(LGS) ....(v)
The Sixth Model: The Sixth hypothesis test model; shows the relationship between litigation support and falsification: $H0_6$: FLS = f(LGS)..(vi)
Where:

MLC	=	Money Laundering Control
BC	=	Bribery Control
FLS	=	Falsification of Records
EXW	=	Expert witness
LGS	=	Litigation Support
EFCC	=	Economic and Financial Crime Commission
	=	Regression Constant
β	=	Regression Coefficient
µ	=	Stochastic term

The model for this study was adapted from the models of Abdul, Muhammad, Hafiz, Ghazanfar, and Arslan (2021) with little modification to suit the purpose of this present study.

Data Analysis And Results

Bivariate Correlation Analysis

It is pertinent to test the hypotheses having completed the univariate analyses. Thus, this section of the study is concerned with the testing of the formulated hypotheses in 1-7. To effectively carry out the testing of the hypotheses, Everitt and Dunn (2001), was adopted as a guide to determine the r value and the extent of the relationship between the variables.

Table 4.3: Range of Relationship and Descriptive Level of Association of Relationship

Range of r values	Descriptive level of association of r
±0.80 – 1.00	Very strong
±0.60 – 0.79	Strong
±0.40 – 0.59	Moderate
±0.20 – 0.39	Weak
±0.00 – 0.19	Very weak

Regression Analysis

$H0_1$: There is no significant relationship between expert witness and money laundering control in commercial banks in Nigeria.

Relationship Between Expert witness and Money Laundering Control in Commercial Banks in Nigeria

Coefficient Table

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW
	B	Std. Error	Beta			

Constant	1.715	.251		6.829	.000	2.012
EXW	2.298	.057	.603	5.254	.000	

Dependent Variable: Money Laundering Control
***Source**: Author Computation (2021) Using SPSS 22*

Table above shows the results of the regression analysis with reference to the effect of expert witness on money laundering control. From the results, there is a high coefficient of correlation 2.298 and Beta correlation of 0.603 between the dependent and predictor variables. The implication is that the variables in the equation are useful for explaining changes in money laundering control. The T- statistic value is found to be 5.254 indicating that the overall fit of the regression model measured by the statistic, is statistically significant at this level. The Durbin Watson (DW) statistic of 2.012 indicates presence of minimal serial correlation or autocorrelation in the regression model.
The above result shows a significant effect of expert witness on money laundering control with p-value 0.000 < 0.05.

HO_2: There is no significant relationship between expert witness and bribery control in commercial banks in Nigeria.

Relationship Between Expert witness and Bribery Control in Commercial Banks in Nigeria
Coefficient Table

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW
	B	Std. Error	Beta			
Constant	1.0456	.092		1.023	.000	1.853
EXW	2.328	2.027	.732	2.063	.036	

Dependent variable: Bribery Control
***Source**: Author Computation (2021) Using SPSS 22*
From the results, there is a high coefficient of correlation 2.298 and Beta correlation of 0.732 between the dependent and predictor variables. The implication is that the variables in the equation are useful for explaining changes in bribery control. The T- statistic value is found to be 2.063 indicating that the overall fit of the regression model measured by the statistic, is statistically significant at this level. The Durbin Watson (DW) statistic of 1.853 indicates presence of minimal serial correlation or autocorrelation in the regression model.
The above result shows a positive and significant effect of expert witness s on bribery control with p-value 0.036 < 0.05.

HO_3: There is no significant relationship between expert witness and falsification of records in commercial banks in Nigeria.
Relationship Between Expert witness and Falsification of Records in Commercial Banks in Nigeria

Coefficient Table

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.	DW

	B	Std. Error	Beta			
Constant	2.164	.271		8.001	.000	1.842
EXW	4.325	.061	.514	5.311	.000	

Dependent variable: Falsification of Records
Source*: Author Computation (2021) Using SPSS 22*

From the results, there is a high coefficient of correlation 4.325 and Beta correlation of 0.514 between the dependent and predictor variables. The implication is that the variables in the equation are useful for explaining changes in falsification of records. The T- statistic value is found to be 5.311 indicating that the overall fit of the regression model measured by the statistic, is statistically significant at this level. The Durbin Watson (DW) statistic of 1.842 indicates presence of minimal serial correlation or autocorrelation in the regression model.
The above result shows a significant effect of expert witness s on falsification of records with p-value 0.000 < 0.05.

HO_4: There is no significant relationship between litigation support and money laundering control in commercial banks in Nigeria.

Relationship Between Litigation Support and Money Laundering Control in Commercial Banks in Nigeria

Coefficient Table

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW
	B	Std. Error	Beta			
Constant	1.183	1.327		8.001	.000	
LGS	3.018	2.072	.853	3.247	.002	2.431

Dependent variable: Money laundering control
Source*: Author Computation (2021) Using SPSS 22*

From the results, there is a high coefficient of correlation 3.018 and Beta correlation of 0.853 between the dependent and predictor variables. The implication is that the variables in the equation are useful for explaining changes in money laundering control. The T- statistic value is found to be 3.247 indicating that the overall fit of the regression model measured by the statistic, is statistically significant at this level. The Durbin Watson (DW) statistic of 2.431 indicates presence of minimal serial correlation or autocorrelation in the regression model.
The above result shows a significant effect of expert witness s on money laundering control with p-value 0.002 < 0.05.

HO_5: There is no significant relationship between litigation support and bribery control in commercial banks in Nigeria.

Table 4.18 Relationship Between Litigation Support and Bribery Control in Commercial Banks in Nigeria

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW
	B	Std. Error	Beta			
Constant	1.352	.257		5.265	.000	

LGS	3.378	3.058	.867	6.504	.008	2.203

Dependent variable: Money laundering control
***Source**: Author Computation (2021) Using SPSS 22*

From the results, there is a high coefficient of correlation 3.378 and Beta correlation of 0.867 between the dependent and predictor variables. The implication is that the variables in the equation are useful for explaining changes in money bribery control. The T- statistic value is found to be 6.504 indicating that the overall fit of the regression model measured by the statistic, is statistically significant at this level. The Durbin Watson (DW) statistic of 2.273 indicates presence of minimal serial correlation or autocorrelation in the regression model.
The above result shows a significant effect of expert witness s on bribery control with p-value 0.008< 0.05.

HO_6: There is no significant relationship between litigation support and falsification of records in commercial banks in Rivers State.

Table 4.18 Relationship Between Litigation Support and Falsification of Records in Commercial Banks in Nigeria

Model	Unstandardized Coefficients		Standardize d Coefficients	T	Sig.	DW
	B	Std. Error	Beta			
Constant	1.054	.065		4.003	.000	
LGS	-2.030	3.753	.743	-4.057	.805	2.226

Dependent variable: Money laundering control
***Source**: Author Computation (2021) Using SPSS 22*

From the results, there is a high coefficient of correlation -2.030 and Beta correlation of 0.743 between the dependent and predictor variables. The implication is that the variables in the equation are useful for explaining changes in falsification of records. The T- statistic value is found to be -4.057 indicating that the overall fit of the regression model measured by the statistic, is statistically significant at this level. The Durbin Watson (DW) statistic of 2.226 indicates presence of minimal serial correlation or autocorrelation in the regression model.
The above result shows a positive and significant effect of expert witness on falsification of records with p-value 0.805< 0.05.

Analysis on the Moderating Variable

$H0_7$: EFCC does not influence relationship between forensic accounting and financial crime control of commercial banks in Nigeria.

Partial Correlation Analysis showing the Impact of EFCC on the Relationship between forensic accounting and financial crime control of commercial banks in Nigeria

Partial Correlation Analysis

Control Variables			FACT	
FCC EFCC	FACT	Correlation	1.000	.964
		Significance (2-tailed)	.	.300
		Df	0	273

FCC	Correlation	.964	1.000
	Significance (2-tailed)	.300	.
	Df	273	0

Source: Result of SPSS Computation, 2021.

From the output of the partial correlation explains that, EFCC bears significant influence on the relationship between forensic accounting and financial crime control of commercial banks in Nigeria. The correlation coefficient of 0.964 means that, EFCC has positive interplay of forensic accounting and financial crime control as depicted by the probability level of 0.015 which is lower than the chosen alpha level of 0.05, thus leading to the rejection of the null hypothesis and accepting the alternative hypothesis. Hence, there is significant influence of EFCC in the relationship between forensic accounting and financial crime control of commercial banks in Nigeria.

Summary of Result Findings Result

Summary of Hypotheses Analysis

Hypotheses	**Statistical Tool**	**Coefficient**	**T-Test**	**P-value**	**Statistical Decision**	**Remark**
Ho_1	Simple bivariate regression analysis	2.298	5.254	0.000	Significant	Reject
Ho_2	Simple bivariate regression analysis	2.328	2.063	0.036	Significant	Reject
Ho_3	Simple bivariate regression analysis	4.325	5.311	0.000	Significant	Reject
Ho_4	Simple bivariate regression analysis	3.018	3.247	0.002	Significant	Reject
Ho_5	Simple bivariate regression analysis	3.378	6.504	0. 008	Significant	Reject
Ho_6	Simple bivariate regression analysis	2.030	-4.057	0.805	Not significant	Accept
Ho_7	Simple bivariate regression analysis	0.964		.300	Not significant	Accept

Source: Researcher's Computation, 2021

From the summary of hypotheses table above the result of the hypotheses of the study were presented in line with the statistical decision rule**:** **‘**if the probability value (PV) in is less than 0.05 alpha level, we Reject the null hypotheses and accept significant relationship. Meanwhile, if the probability value (PV) is greater than 0.05 alpha level, we accept the null hypothesis and accept insignificant relationship’. Hence:

$H0_1$: There is significant relationship between expert witness and money laundering control in commercial banks in Nigeria.

HO_2: There is significant relationship between expert witness and bribery control in commercial banks in Nigeria.

HO_3: There is significant relationship between expert witness and falsification of records in commercial banks in Nigeria.

HO_4: There is significant relationship between litigation support and laundering control in commercial banks in Nigeria.

HO_5: There is significant relationship between litigation support and bribery control in commercial banks in Nigeria.

HO_6: There is no significant relationship between litigation support and falsification of records in commercial banks in Rivers state.

HO_7: EFCC does not influence relationship between forensic accounting and financial crime control of commercial banks in Nigeria.

CONCLUSION

Forensic accounting is seen as encapsulating all the other areas in the use of accounting for investigative purposes. The increasing need for forensic and investigative accounting in the banking sector results from the nature of modern-day banking involves large volume of complex data, which makes it difficult to monitor those transactions by applying manual audit processes. This in turn makes the control utility of auditing ineffectual. Virtually all the weaknesses and challenges identified in the banking industry in Nigeria's post consolidation, and criminal investigations and prosecutions arising from them, are issues for forensic accounting. The general expectation is that forensic accounting may offer some respite to the seeming vulnerability of conventional accounting and audit systems to financial fraud. Consequently, the incorporation of modern forensic auditing techniques in an audit in Nigeria is seen as timely in order to prepare the accounting profession to deal effectively with the problem of unearthing ingenious fraud schemes arising from audit failure to detect frauds in Nigeria. effective in curbing financial crimes. There is a need to provide a comprehensive framework involving the use of forensic auditing methodology particularly in the areas of audit planning and execution, and for a uniform reporting practice that would spread out the implementation control failures including failure of senior management in implementing prescribed controls. Fraud and white-collar crime have increased considerably over the past years, and experts believe that the trend is likely to keep on growing if adequate measures are not taken to curb this perfidy. So in the quest to combat this economic monster (fraud), the concept of forensic accounting and audit was introduced. After carrying out this research study, the following conclusions were arrived at, that:

i. Fraud gave birth to forensic auditing and the incessant occurrence of fraud in our financial or banking sector has become the major reasons behind bank failures in the country and that the effects of the fraud cuts across every sector is the economy, because the financial sector is the custodian and engine house of every nation’s economy.

ii. Nigerian investors have lost confidence in the Nigerian system, thereby having preference to making their investments abroad rather than risking their resources in the country where fraud perpetration is seen by most people as the easiest way to get rich and undue advantage quickly.

iii. Forensic audit has been playing a vital role in fraud detection and prevention and also been regarded as a useful technique in unearthing and prevention of fraud in the business world. Based on my findings, the researcher hereby concludes that forensic accounting is a better way to combat fraud in Nigeria. It will enhance Nigerians professionals' success in their fight against corporate fraud and corruption.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are therefore made:

1. Shareholders and directors of banking industry should provide regular training on data mining techniques to equip their accounting staff with the relevant and up-to- date skills, abilities, attitude and competences for fraud detection.
2. The Institute of Chartered Accountants of Nigerian should organize regular conferences, seminars and workshops for their members where emerging trends in anonymous communication are highlighted to help professional accountants and auditors detect and prevent frauds or at least reduce the incidence to save their employers.
3. Bank staff should endeavour to support forensic auditors with relevant background information that could lead to fraud detection to ensure that the occurrence of fraud is minimized to the barest minimum.
4. Accounting staff of banking industry should always avail themselves of any training opportunity on forensic auditing investigation techniques in order to be more alert to fraudulent activities and prevent them.
5. Shareholders in the banking industry should insist that the techniques used in the study and other forensic auditing techniques are adequately utilised by holding the management accountable for fraud occurrences.
6. Commercial banks should keep proper record and consult forensic accountants to unravel falsification records of top managers.
7. Many cases of commercial bank financial crimes are in economic and financial crime commission (EFCC) custody and most of them have not been presented to court or prosecuted. Thus, EFCC should facilitate the process of adjudication of bank financial crimes

Contributions to Knowledge

1. Several empirical studies have been conducted to examine the effect of forensic accounting on fraud or financial crime in deposit money banks in Nigeria. Most of the study on forensic accounting do not lay emphasizes on financial crime control. They focused on investigating firms (banks) that have a fraud history in the past. This practice in forensic accounting research is not particularly useful to regulators. Regulators are interested in detecting and preventing on-going fraudulent activities in banks which the study entails.
2. The study has added to existing literature on forensic accounting and financial crime control by empirically validating that expert witness can effectively control financial crimes. It is the best tool in reducing white collar fraud in the banking sector.

3. The study has brought together two important aspects of forensic audit (expert witness and litigation service) to test their influence on measures of financial crime control (bribery and falsification of records) to determine their extent of relationship. Hence this study will be a reference for future researchers as it will aid their future studies.

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Forensic Accounting and Financial Fraud in Nigeria: Problems and Prospects

Abstract
The increasing rate of frauds and financial crimes in Nigerian economy has made corporate organizations to develop means of facing these challenges with the use of forensic accounting services. The study examines the effects of forensic accounting services on fraud and financial crime detection and prevention in Nigeria. The survey designed was used in the study with a sample size of 160 consisting of Auchi Polytechnic, Edo State Ministry of Finance, Audit Firms and Federal Inland Revenue Services. The simple random technique was used as the sampling technique, while the chi- square was employed in the data analysis. The tests of hypothesis were done using Microsoft Excel 2010 version. Tests were carried out at a significant level of 5% and three degree of freedom. The paper concludes that financial crimes and fraud have serious negative effect on human capital and infrastructural development in developing economies, especially countries like Nigeria. Forensic accounting services provide corporate organizations with the necessary tools to detect and prevent frauds and financial crimes. The study therefore recommends that professional accounting bodies should constantly conduct forensic accounting training for accountants and Nigerians should embrace integrity, objectivity, fairness and accountability in their daily activities.

Keywords: *forensic accounting, fraud, financial crime, economy.*

INTRODUCTION

The widespread frauds in modern organizations have made traditional auditing and investigation inefficient and ineffective in the detection and prevention of the various types of frauds confronting businesses world-wide. Fraud is a universal problem as no nations is resistant, although developing countries and their various states suffer the most pain. The increasing sophistication of financial fraud requires that forensic accounting be added to the tools necessary to bring about the successful investigation and prosecution of those individuals involved in criminal activities.

The Nigerian banking sector is one of the most controlled and regulated sectors. In spite of this, financial crimes such as embezzlement, bribery, bankruptcy, security fraud, among others, have taken the centre stage in the scheme of things in the sector (Adeniyi, 2016). The consequences and the effects of financial crimes in corporate organizations are very grave and it is against this background that forensic accounting emerged. It is a response to the growing sophistication and awareness of financial crimes.

Karwai (2002) maintains that the increasing wave of fraud is causing a lot of havoc in Nigeria. This is because fraud has eaten deep into every aspect of the Nigerian society to the extent that many organizations have lost confidence of their customers. Key institutions like Independence Corrupt Practices Commission (ICPC), Economic and Financial Crime Commission (EFCC) were established to fight corruption. All these could not work effectively because of various challenges like politicization and blackmail, constitutional immunity as stated in section 308 of Nigerian constitution, public apathy and doubtful attitudes towards anti-corruption work, and slow justice.

Forensic accounting encompasses three major areas of investigation, dispute resolution and litigation support. In the light of the problem of financial crimes discussed above, this study aims at examining the problems and prospects of forensic accounting and financial fraud in Nigeria.

LITERATURE REVIEW

Introduction

The term forensic means suitable for use in a court of law, and it is to that standard and potential outcome that forensic accountants generally have to work. Litigation services and investigative accounting are the two main branches of forensic accounting, according to some experts (Crumbley, 2005; Coppolla, 2006).Forensic accounting is a discipline that has its own models and methodologies of investigative procedures that search for assurance, attestation and advisory perspective to produce legal evidence. It is concerned with the evidentiary nature of accounting data, and as a practical field concerned with accounting fraud and forensic auditing; compliance, due diligence; detection of financial misrepresentation and financial statement fraud (Dhar and Sarkar, 2010).

Okunbor and Obaretin (2010) reported that the spates of corporate failures have placed greater responsibility and function on accountants to equip themselves with the skills to identify and act upon indicators of poor corporate governance, mismanagement, frauds and other wrong doings. It has become imperative for accountants at all levels to have the requisite skills and knowledge for identifying, discovering as well as preserving the evidence of all forms of irregularities and fraud. Therefore, fraud requires more sophisticated approach from preventative to detection. One of the modern approaches that can be used from the prevention to detection is called forensic accounting. It touches almost all disciplines especially, accounting, auditing, investigation, law and psychology (Enofe, Agbonkpolor & Edebiri, 2015).

The Concept of Forensic Accounting

Hopwood, Leiner, and Young (2008) define forensic accounting as the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets standards required by courts of law. It is the integration of accounting, auditing and investigative skills (Dada, Owolabi & Okwu, 2013).

According to Curtis (2008), forensic accountants are essential to the legal system, providing expert services such as fake invoicing valuations, suspicious bankruptcy valuations, and analysis of financial documents in fraud schemes. Crumbley (2003) defined forensic science as the application of laws of nature to the laws of man. He described forensic scientists as examiners and interpreters of evidence and facts in legal cases that also offers expert opinions regarding their findings in court of law.

Dhar and Sarkar (2010) define forensic accounting as the application of accounting concepts and techniques to legal problems. It demands reporting, where accountability of the fraud is established and the report is considered as evidence in the court of law or in administrative proceedings. Forensic accounting is a discipline that has its own models and methodologies of investigative procedures that search for assurance, attestation and advisory perspective to produce legal evidence.

Onodi, Okafor and Onyali (2015) are of the opinion that forensic investigative skills are required to uncover and establish the occurrence of financial crimes due to the incidence of fraud and misappropriation of funds in recent time that is posing a threat to traditional auditing as a branch of accounting profession. It is concerned with the evidentiary nature of accounting data, and as a practical field concerned with accounting fraud and forensic auditing; compliance, due diligence and risk assessment; detection of financial misrepresentation and financial statement fraud.

Financial Frauds

Ehioghiren, & Atu, (2016) opined that financial crimes cannot be precisely defined but can be described. No one description suffices. Williams (2005) incorporates corruptions, bribes cronyism, nepotism, political donation, kickbacks, artificial pricing and frauds of all kinds to his description of financial crimes. Nwaze (2012) defined fraud as a predetermined as well as planned tricky process or device usually undertaken by a person or group of persons with the sole aim of cheating another person or organisation to gain ill-gotten advantage which would not have accrued in the absence of such deceptive procedure.

Karwai (2002) is of the view that financial fraud in organizations vary widely in nature, character and method of operation in general. He reported that the identification of the causes of fraud is very difficult because modern day organizations frauds usually involve a complex web of conspiracy and deception that often mask the actual cause. It was noted by Nwaze (2008) that fraud is perpetrated in many forms and usually has insiders (staff) and outsiders conniving together to successfully implement the act.

Fraud may be classified into two broad ways: nature of fraudsters and method employed in carrying out the fraud. On the basis of the nature of the fraudsters, fraud may be categorized into three groups, namely; internal, external and mixed frauds. Internal fraud relates to those committed by members of staff and directors of the organizations while external fraud is committed by persons outside the organization and mixed fraud involves outsiders colluding with the staff and directors of the organization. Although fraud affects the whole world, the magnitude of fraud in Nigeria and the extent to which the economy is affected is a call for alarm (Abiola, 2009).

Financial crimes are crime against property, involving the unlawful conversion of the ownership of property (belonging to another) to one's own personal use and benefit. Financial crimes may involve additional criminal acts, such as computer crime, elder abuse, burglary, and even violent crime such as armed robbery or murder. Financial crimes may be carried out by individuals, corporations, or by organized crime groups. Victims may include individuals, corporations, governments, and entire economies.

Competences Required of a Forensic Accountant

A forensic accountant must possess the following characteristics/qualities: curiosity, persistence, creativity, discretion, organization, confidence, and sound professional judgement. A Forensic Accountant must be open to consider all alternatives, scrutinize the fine details and at the same time see the big picture. In addition, a Forensic Accountant must be able to listen effectively and communicate clearly and concisely. DiGabriele (2009) identified a set of skill, prominent amongst which are:

a) Deductive analysis: The ability to identify financial contradictions that do not fit in the normal pattern of assignment. In consideration of the barrage of recent financial reporting scandals this skill appears to be necessary and essential for a forensic accountant to meet the objective of uncovering a potential financial fraud.
b) Creative thinking: The ability to differentiate between opinion and fact. The essence of being an expert witness is to be able to perform the task of discerning fact from fiction in order to maintain a credible testimony. Courses developed in this area should emphasize the ability to remove any non-corroborated opinions from expert reports and testimony.
c) Unstructured problem solving: The ability to treat each situation as inherently unique and preparedness to solve problems with an unstructured approach. Accounting education has been based around concentrating on compliance with rules and procedures. This skill is a direct contradiction to this concept.
d) Analytical proficiency: The ability to look out for what should be provided rather than what was provided. Considering the post financial fraud regulatory environment, solving a financial puzzle with less than a complete set of pieces appears to be the direction the current business environment is heading.
e) Oral and written communication: The ability to effectively communicate in speech and in writing via expert testimony and general explanation of the bases of opinion and reports, charts, graphs and schedules the bases of opinion.
f) Specific legal knowledge: The ability to understand basic legal processes and legal issues including the rule of evidence.
g) Composure: The ability to maintain a calm attitude when under pressured. The most prevalent area where this is necessary is expert testimony in either deposition or court. The composure of an expert can be an integral component in the ultimate outcome of the case.

The Role of Forensic Accountant

The principal role of a Forensic Accountant as an expert witness is to analyse, interpret, summarize and present complex business and financial deals in a logical, understandable manner supported with facts. An expert witness is a witness, who by virtue of education, training, skill, or experience, is believed to have knowledge in a particular subject beyond that of the average person, sufficient that others may officially (and legally) rely upon the witness's specialized (scientific, technical or other) opinion about an evidence or fact issued within the scope of their expertise, referred to as the expert opinion, as an assistance to the fact-finder. The Forensic Accountant should possess the following:

a) Communicate Findings in the form of a report and supporting documents.
b) Assist in any legal proceedings.
c) Assist in obtaining documentation necessary to support or refute a claim.
d) Review of the relevant documentation to form an initial assessment of the case and identify areas of loss.

e) Assist and attend the examination for discovery including the formulation of questions to be asked regarding the financial evidence.
f) Review of the opposing expert's damages report and reporting on both the strengths and weaknesses of the positions taken.
g) Assist with settlement discussions and negotiations.
h) Attend trial to hear the testimony of the opposing expert and to provide assistance with cross- examination.

Challenges of Forensic Accounting Application in Nigeria

With an upsurge in financial accounting fraud in the current economic scenario experienced, financial accounting fraud detection has become an emerging topic of great importance for academic, research and industries. The failure of internal auditing system of the organization in identifying the accounting frauds has led to use of specialized procedures to detect financial accounting fraud, collective known as forensic accounting (Modugu & Anyaduba, 2013).

Rezaee, Crumbley, and Elmore (2006) reveal the following challenges confronting the application of forensic accounting.

a) The task of gathering information that is admissible in a court of law.
b) The admissibility, of evidence in compliance with the laws of evidence is crucial to successful prosecutions of criminal and civil claims.
c) Globalization of the economy and the fact that a fraudster can be based anywhere in the world has led to the problem of inter-jurisdiction.
d) The law is not always up to date with the latest advancements in technology.
e) Forensic accounting is seen as an expensive service that only big companies can afford.
f) It is a new trend particularly in developing economies. Hence, accountants with adequate technical know-how on forensic issues are hardly available.

The problems identified in Nigerian economy in area of financial and economic crimes are explained thus:

a) Non-availability of the appropriate litigation support services in the court has led to misjudgement or incorrect submissions by lawyers and judges. It has been discovered that offenders are not given appropriate punishment because the gravity or extent of economic loss or damages cannot be adequately determined.
b) The increasing rate of crime and corruption in the economy most especially in the area of economic governance and in public corporations have eroded public confidence and trust in matters regarding transparency and financial probity.
c) There is weakness in traditional auditing style in curbing this socio-economic evil (economic and financial crimes) in the Nigerian economy.
d) There is problem of battered image of the nation both locally and internationally. Nigeria has recorded huge loss of fund due to the bad image; Nigeria has not been able to attract Foreign Direct Investment expected of a developing economy.

Obstacles to Effective Prosecution of Corrupt Practices and Financial Crimes in Nigeria

Ribadu (2004) stated that corruption and other economic crimes are the bane of Nigeria economic development efforts. All the crimes harm the economy in no small measures.

Those who are saddled with the responsibility of fighting crimes will do well if they do not compromise, thereby making corruption a little monster to be crushed with ease. He however, outlined the following factors that affected the prosecuting of criminals:

a) Cooperation from persons/institutions who should furnish relevant information.
b) The quality of evidence gathered at the investigation stage.
c) The transparency of investigation of the case itself.
d) The prosecutorial competes of the prosecuting counsel.
e) The transparency and fairness of the presiding judge in the trail.
f) Inadequacy of existing procedural and evidence laws.
g) Congestion and slow pace of court proceedings.
h) Jurisdiction problems.
i) Cost of investigation and prosecution.

METHODOLOGY

This study is empirical and descriptive, taking the Edo State as the population. The sample represents the following entities: Auchi Polytechnic, Auchi (APA), Edo State Ministry of Finance (ESMF), Audit Firms (AF) and Federal Inland Revenue Service (FIRS). A sample size of forty (40) is targeted for each respondent groups making a total of One hundred sixty (160) copies of questionnaire administered, a total of one hundred and forty four (144) copies were returned and used for analysis. This represents an overall response rate of ninety per cent (90%) for all the groups. These responses were used in providing answers to the questions raised in the study using Likert scale which measures the extent to which a person agrees or disagrees with the question. The most common scale is 1 to 5 was used as scale 1 = strongly disagree, 2 = disagree, 3 = not sure/neutral/no opinion, 4 = agree, and 5 = strongly agree.

Chi-square was used to test the hypotheses; it measures the difference between the expected and the observed frequencies and was calculated as follows:

$$\chi^2 = \frac{\Sigma(O - E)^2}{E}$$

Where

O = Observed frequency E = Expected frequency

Decision rule at any level of significance is that the null hypothesis is rejected if the calculated chi-square (χ^2) is greater than or equal to the critical value from the chi-square table, otherwise the null hypothesis is retained.

Test of research hypotheses

Hypothesis One

H_{01}: Litigation support services by forensic accounting cannot lead to appropriate judgment for economic and financial crime eradication in Nigerian economy.

This hypothesis states that there is no significant relationship between the litigation support services by forensic accounting and appropriate judgment for economic and financial crime eradication in Nigerian economy.

In Table 1, the Chi-Square (χ^2) calculated is 22.06, while the critical value is 21.03 from the statistical table. The Chi-Square calculated value (22.06) is greater than the critical value (21.03). As a result of this, the research rejects the null hypothesis at 5% level of significance and 12 degree of freedom. It can be concluded that there is significant relationship between the litigation support services by forensic accounting and appropriate judgment for economic and financial crime eradication in Nigerian economy. It therefore means that litigation support services by forensic accounting can lead to appropriate judgment for economic and financial crime eradication in Nigerian economy.

Hypothesis Two

H_{02}: Forensic accounting has no relationship with good corporate governance for public confidence and eradication of crime and corruption in Nigerian economy.

This hypothesis states that Forensic accounting has no relationship with good corporate governance for public confidence and eradication of crime and corruption in Nigerian economy.

In Table 2, the Chi-Square (χ^2) calculated is 24.24, while the critical value is 21.03 from the statistical table. The Chi-Square calculated value (24.24) is greater than the critical value (21.03). As a result of this, the research rejects the null hypothesis at 5% level of significance and 12 degree of freedom. It can be concluded that Forensic accounting has relationship with good corporate governance for public confidence and eradication of crime and corruption in Nigerian economy. It therefore means that Forensic accounting can enhance good corporate governance for public confidence and eradication of crime and corruption in Nigerian economy.

Hypothesis Three

H_{03}: Forensic accounting cannot fill the gap created by traditional auditing style in curbing the socio- economic evil of economic and financial crimes.

This hypothesis states that there is no significant relationship between Forensic accounting and filling the gap created by traditional auditing style in curbing the socio-economic evil of economic and financial crimes.

In Table 3, the Chi-Square (χ^2) calculated is 22.56, while the critical value is 21.03 from the statistical table. The Chi-Square calculated value (22.56) is greater than the critical value (21.03). As a result of this, the research rejects the null hypothesis at 5% level of significance and 12 degree of freedom. It can be concluded that there is relationship between Forensic accounting and filling the gap created by traditional auditing style in curbing the socio- economic evil of economic and financial crimes. It therefore means that Forensic accounting can fill the gap created by traditional auditing style in curbing the socio- economic evil of economic and financial crimes.

CONCLUSION AND RECOMMENDATIONS

Financial crimes and fraud have serious negative effect on human capital and infrastructural development in developing economies, especially countries like Nigeria where the menace has become endemic. Forensic accounting services provide corporate organizations with the necessary tools to detect and prevent frauds and financial crimes. It is one of the strategic and dynamic tools for the management of all types of financial crimes. The study therefore recommended that:

a) Professional accounting bodies should constantly conduct forensic accounting training for accountants.
b) Nigerians should embrace integrity, objectivity, fairness and accountability in their daily activities.

c) The forensic accountant as an expert witness should at all times bring his education, training, skill, or experience to bear so that their specialized opinion about an evidence or fact issued within the scope of their expertise(expert opinion), as an assistance to the fact-finder.
d) The anti-graft agencies should consider engaging the services of forensic accountants to assist them in court cases involving economic or financial crimes.
e) The Institute of Chartered Accountants of Nigeria, Association of National Accountants of Nigeria and the National Universities Commission should encourage formalization and specialization in the field forensic accounting.
f) There is need for the inclusion of forensic accounting in the syllabus of all the tertiary institutions offering accountancy in Nigeria. Professional accountancy bodies should also include the course in their syllabus.

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APPENDICES

HYPOTHESIS I

Litigation support services by forensic accounting cannot lead to appropriate judgment for economic and financial crime eradication in Nigerian economy.											
	SA		**A**		**N**		**D**		**SD**		**TOT**
RESPONDENTS	**O**	**E**	**O**	**E**	**O**	**E**	**O**	**E**	**O**	**E**	
AUCHI POLY	3	6.6	4	3.2	2	4.2	9	10.8	20	13.2	**38**
ESMF	4	6.4	3	3.1	6	4.1	15	10.5	9	12.8	**37**
AUDIT FIRMS	9	5.9	4	2.8	6	3.8	5	9.7	10	11.8	**34**
FIRS	9	6.1	1	2.9	2	3.9	12	10.0	11	12.2	**35**
TOTAL	**25**	**25**	**12**	**12**	**16**	**16**	**41**	**41**	**50**	**50**	**144**

Source: Researcher's computation using Microsoft Excel, 2010.

HYPOTHESIS II

Forensic accounting has no relationship with good corporate governance for public confidence and eradication of crime and corruption in Nigerian economy.											
	SA		**A**		**N**		**D**		**SD**		**TOT**
RESPONDENTS	**O**	**E**	**O**	**E**	**O**	**E**	**O**	**E**	**O**	**E**	
AUCHI POLY	5	4.2	3	4.8	2	3.4	13	12.1	15	13.5	38.0
ESMF	2	4.1	4	4.6	1	3.3	11	11.8	19	13.1	37.0
AUDIT FIRMS	5	3.8	7	4.3	8	3.1	6	10.9	8	12.0	34.0
FIRS	4	3.9	4	4.4	2	3.2	16	11.2	9	12.4	35.0
TOTAL	**16**	**16**	**18**	**18**	**13**	**13**	**46**	**46**	**51**	**51**	**144**

Source: Researcher's computation using Microsoft Excel, 2010.

HYPOTHESIS III

Forensic accounting cannot fill the gap created by traditional auditing style in curbing the socio- economic evil of economic and financial crimes.											
	SA		**A**		**N**		**D**		**SD**		**TOT**
RESPONDENTS	**O**	**E**	**O**	**E**	**O**	**E**	**O**	**E**	**O**	**E**	
AUCHI POLY	3	3.4	5	5.5	2	3.4	10	11.1	18	14.5	38.0
ESMF	2	3.3	4	5.4	1	3.3	11	10.8	19	14.1	37.0
AUDIT FIRMS	5	3.1	7	5.0	8	3.1	6	9.9	8	13.0	34.0
FIRS	3	3.2	5	5.1	2	3.2	15	10.2	10	13.4	35.0
TOTAL	**13**	**13**	**21**	**21**	**13**	**13**	**42**	**42**	**55**	**55**	**144**

Source: Researcher's computation using Microsoft Excel, 2010.

HYPOTHESIS I					HYPOTHESIS II					HYPOTHESIS III				
O	**E**	**D**	**D^2**	**D^2/E**	**O**	**E**	**D**	**D^2**	**D^2/E**	**O**	**E**	**D**	**D^2**	**D^2/E**
3	6.60	-3.60	12.94	1.96	5	4.22	0.78	0.60	0.14	3	3.43	-0.43	0.19	0.05
4	6.42	-2.42	5.87	0.91	2	4.11	-2.11	4.46	1.08	2	3.34	-1.34	1.80	0.54
9	5.90	3.10	9.59	1.63	5	3.78	1.22	1.49	0.40	5	3.07	1.93	3.73	1.21
9	6.08	2.92	8.55	1.41	4	3.89	0.11	0.01	0.00	3	3.16	-0.16	0.03	0.01
4	3.17	0.83	0.69	0.22	3	4.75	-1.75	3.06	0.64	5	5.54	-0.54	0.29	0.05
3	3.08	-0.08		0.00	4	4.63	-0.63	0.39	0.08	4	5.40	-1.40	1.95	0.36
4	2.83	1.17	1.36	0.48	7	4.25	2.75	7.56	1.78	7	4.96	2.04	4.17	0.84
1	2.92	-1.92	3.67	1.26	4	4.38	-0.38	0.14	0.03	5	5.10	-0.10	0.01	0.00
2	4.22	-2.22	4.94	1.17	2	3.43	-1.43	2.05	0.60	2	3.43	-1.43	2.05	0.60
6	4.11	1.89	3.57	0.87	1	3.34	-2.34	5.48	1.64	1	3.34	-2.34	5.48	1.64
6	3.78	2.22	4.94	1.31	8	3.07	4.93	24.31	7.92	8	3.07	4.93	24.31	7.92
2	3.89	-1.89	3.57	0.92	2	3.16	-1.16	1.34	0.43	2	3.16	-1.16	1.34	0.43
9	10.82	-1.82	3.31	0.31	13	12.14	0.86	0.74	0.06	10	11.08	-1.08	1.17	0.11
15	10.53	4.47	19.94	1.89	11	11.82	-0.82	0.67	0.06	11	10.79	0.21	0.04	0.00
5	9.68	-4.68	21.91	2.26	6	10.86	-4.86	23.63	2.18	6	9.92	-3.92	15.34	1.55
12	9.97	2.03	4.14	0.42	16	11.18	4.82	23.23	2.08	15	10.21	4.79	22.96	2.25
20	13.19	6.81	46.32	3.51	15	13.46	1.54	2.38	0.18	18	14.51	3.49	12.15	0.84
9	12.85	-3.85	14.80	1.15	19	13.10	5.90	34.76	2.65	19	14.13	4.87	23.70	1.68
10	11.81	-1.81	3.26	0.28	8	12.04	-4.04	16.34	1.36	8	12.99	-4.99	24.86	1.91
11	12.15	-1.15	1.33	0.11	9	12.40	-3.40	11.53	0.93	10	13.37	-3.37	11.34	0.85
144	**144**	**0**	**174.71**	**22.06**	**144**	**144**	**0**	**164.17**	**24.24**	**144**	**144**	**0**	**156.90**	**22.84**

Source: Researcher’s computation using Microsoft Excel, 2010.

Forensic Accounting Practices and Fraud Management in selected listed Fast Moving Consumer Goods (FMCGs) in Nigeria

Abstract

The study explores the influence of forensic accounting practices on fraud management in selected listed fast moving consumer goods (FMCGs) in Nigeria. Survey research design was used as the method for this study. The sample size was 20 quoted consumer goods companies as at 31st December, 2023 and 15 questionnaires each were allotted to each selected company which gave 300 observations out of which 258 were found useful. The sample size determination adopted was Taro Yemane which gave 20 companies. The Simple random sampling was the method employed for the sample. A structured questionnaire was employed as the data gathering tool. The research tool adopted for descriptive statistics was simple table, mean and standard deviation while the two hypotheses were tested using inferential statistics, analysis of variance (ANOVA), and ordinary least square (OLS). The findings revealed that forensic accounting practices have significant influence on fraud prevention of FMCGs in Nigeria (F= 2.071, p-value =0.000). Also, it was also discovered that forensic accounting practices significantly influence fraud detection in FMCGs (F= 1.698, p-value =0.000) indicating that forensic accounting practices enhance fraud management in FMCGs sector in Nigeria. From the findings of this study, revealed that fraud prevention in Nigerian fast-moving consumer products is significantly correlated with the use of forensic accounting techniques. Also, it was observed that forensic accounting practices significantly detect fraudulent activities easily in Nigerian fast moving consumer goods. According to the report, it is critical to update the organizational structure of the business to better accommodate forensic accounting services. Additionally, the business needed to develop precise guidelines to direct forensic accounting practices in the quickly evolving consumer products industry.

Keywords: *Forensic accounting practices, fraud management, fraud prevention, fraud detection*

1.0 Introduction

In the recent time, the decline level of trust in auditor’s professional output has demonstrated the failure of traditional auditing. This probably due to a lack of professional skepticism and dedication, particularly in developing economies. Stakeholders in both public and private companies have long recognised the importance of quality financial reporting systems that are separate from the creation and presentation of financial statements, but this is being undermined by financial irregularities, especially in the public sector. This could have prompted scholars and other public information that argued that corruption and other fraudulent practices have becoming alarming in Nigeria (Frankline et.al, 2022; Oyerogba, 2021; Ogiriki and Appah, 2018).

Fraud is the deliberate use of false pretenses to coerce individuals or groups to give up assets or a number of legal rights. It is the dishonest act of denying someone anything to which they would otherwise be entitled because they committed fraud. (Akpoveta, Agbomah, and Onuora 2018)

Accordingly, the corrupt practices menace has become more pervasive, leading to continued resource mismanagement and the loss of government assets (Nonye & Okoli, 2015). As a result of this, the quality of financial statements produced are being undermined, leading to the public mistrust on the traditional auditing. Due to the pervasive fraud, the stakeholders, thus, are of the opinion of the need to improve the quality of financial statements in the public sector through the adoption of forensic accounting. While the functions of the traditional auditing are crucial, it is believed that the skills of forensic accounting, in the technological advancement age, especially on digital forensic accounting, will better enhance the public sector financial statement quality. The audit practice failures, however, are seen as some of the reasons that the key factors driving the development of forensic accounting, which fueled expectations gap (Okoye & Akamobi, 2009).

Regarding this, the public's expectations of the need for forensic auditors in fraud detection, prevention, and reporting have continued to grow, particularly in the public service audit, as a result of the issuance of reports by the conventional auditor that are materially fraudulent. The public anticipates that forensic accounting will alleviate the existing susceptibility of traditional accounting and auditing systems to financial fraud, even though this expectation is like a consensus in general. Studies have previously established the effectiveness of forensic accounting in the elimination of fraudulent practices in financial statements, and corruption, among others (Abdulrahman et al.; Tapang & Ihendinihu, 2020; Bangura, 2020; Akinadewo & Akinkoye, 2019). While these studies have established the relationship between forensic accounting and fraudulent practices in the financial statements, etc., there is a lacuna in the area of digital forensic through big data, business intelligence tools and cloud computing, which could be instrumental to improved quality in the output of forensic accounting investigation.

In the recent time, the decline level of trust in auditor’s professional output has demonstrated the failure of traditional auditing. This probably due to a lack of professional skepticism and dedication, particularly in developing economies. Stakeholders in both public and private

companies have long recognised the importance of quality financial reporting systems that are separate from the creation and presentation of financial statements, but this is being undermined by financial irregularities, especially in the public sector. This could have prompted scholars and other public information that argued that corruption and other fraudulent practices have becoming alarming in Nigeria (Frankline et.al, 2022; Oyerogba, 2021; Ogiriki and Appah, 2018).

In Nigeria, although the banking sector is one of the most regulated sectors, consumer goods sector plays a vital role of feeding the nation. In spite of this regulations and control, financial crimes have taken center stage in the industry, including embezzlement, bribery, insolvency, and security fraud (Adeniyi, 2016). Given the profound repercussions that financial crimes have on corporate organizations, forensic accounting was developed. It is a reaction to financial crimes' increasing sophistication and knowledge. According to Karwai (2002), the growing fraud wave is affecting a lot of havoc in Nigeria. This is because fraud has eaten deep into every aspect of the Nigerian society to the to the degree that a lot of businesses no longer trust their clients. To combat corruption, important organizations like the Economic and Financial Crime Commission (EFCC) and the Independence Corrupt Practices Commission (ICPC) were founded. Due to a number of obstacles, including political blackmail and politicization, constitutional immunity as defined by section 308 of the modified Nigerian Constitution of 1999, public indifference and skepticism toward anti-corruption efforts, and a delayed judicial system, none of them could be implemented successfully.

1.1 Statement of the Problem

Forensic accounting comprises of three major areas of investigation, dispute resolution and litigation support. In the light of the previous studies that have discussed the forensic accounting in handling problem of financial crimes in both private and public sectors of the economy without minding the consumers' goods firms and also did not take the systematic approach in the handling the financial crimes. This study aims at examining the effects of forensic accounting as a systematic tool and approach in detecting and preventing frauds in consumers' goods firms in Nigeria, with a singular question of how effective is the systematic approach of forensic accounting detect and prevent fraud in a listed consumers' goods firms in Nigeria.

Several studies conducted on forensic accounting or auditing did not investigate consumer goods industry in Nigeria, hence this study aims to identify the importance of forensic accounting practice in the consumers' goods in the detection and prevention of financial fraud which goes beyond the opinion of external auditors. The study will also fill the gap between the practice of external auditors and forensic accounting expert which also suggest to the users that in detecting financial fraud, forensic accounting exercise goes beyond public and banking sectors.

The major goal of this study is to access the influence of forensic accounting systematic approach on detecting and preventing financial fraud in the fast-moving consumers' goods in 21st century from the Nigerian perspective.

1.2 Research Objectives

This study's main objective is to find out how forensic accounting practice affect fraud management in Nigerian listed consumer goods companies. More specifically, the following specific objectives are being pursued:

i. Establish the application of forensic accounting practices prevents financial fraud in selected listed consumers' goods firms in Nigeria.

ii. Access the application of forensic accounting practices on detection of financial fraud in selected listed consumers' goods firms in Nigeria.

1.3 Research Questions

The following research questions were formulated:

i. Does the application of forensic accounting practices established prevent financial fraud in selected listed consumers' goods firms in Nigeria?

ii. Does the application of forensic accounting practices accessed detect financial fraud in selected listed consumers' goods firms in Nigeria?

1.4 Research Hypotheses

Based on the above research questions, the following hypotheses were tested and stated in null form:

Ho_1: Application of forensic accounting practices established do not prevent financial fraud in selected listed consumers' goods firms in Nigeria.

Ho_2: Application of forensic accounting practices accessed do not detect financial fraud in selected listed consumers' goods firms in Nigeria.

1.5 Significance of the Study

This study is important because it would serve as a policy framework for:

i. The management of consumer goods companies.
ii. The Independent Corrupt Practices and Other Related Offenses Commission (ICPC).
iii. The Economic and Financial Crimes Commission (EFCC).
iv. The External Auditors and other stakeholders on the influence of forensic accounting practices on fraud management and;
v. Be of great importance as it will contribute to academic knowledge.

1.6 Scope of the Study

This study covers the forensic accounting practices and fraud management in consumer goods sector; hence the scope of this paper is limited to Forensic accounting, forensic accounting practices, fraud management, fraud prevention, fraud detection and fast-moving consumer goods alone.

2.0 Literature Review

2.1 Conceptual Framework

2.1.1 Forensic Accounting

Since there are numerous authors in this field of accounting literature, there are numerous definitions of forensic accounting. As a result, no one definition is considered to be the best. The term "forensics" has to do with identifying crimes. In order to improve financial investigations and reduce or prevent financial impropriety in all its forms, science is therefore applied to resolve questions arising from crime or litigation and as such introduced in the accounting domains (Chepngeno & Fred 2020).

"The application of accounting principles and techniques to investigate and analyze financial information for evidentiary purposes" is what Wells (2019) defined as forensic accounting. Identification of financial abnormalities, calculation of fraud-related damages, and submission of financial evidence in court are all included in the purview of forensic accounting. Similarly, forensic accounting is described as "the specialty practice area of accounting that describes engagements that result from actual or anticipated disputes or litigation" by the AICPA (2021).

The scope of forensic accounting encompasses asset tracing, financial fraud investigation, and expert witness testimony. Furthermore, "the practice of utilizing accounting, auditing, and investigative skills to assist in legal matters, typically related to financial fraud or disputes" is how Ezejiofor, Nwakoby, and Okoye (2019) define forensic accounting. Identification of illicit financial activity, measurement of losses, and expert witness provision in legal procedures are all included in the purview of forensic accounting.
The use of analytical and investigative abilities to resolve financial disputes in a way that complies with legal norms is known as forensic accounting. The application of accounting principles and methods to legal issues is another definition of forensic accounting (Abdulrahman, 2019).
It is challenging to understand forensic accounting without drawing comparisons to auditing, primarily because auditing has historically been used to evaluate corporate situations, accounting malpractices, and investigative work is still done by auditors today. Auditors do due diligence, expert witnesses, fraud investigations, and other tasks. It is undeniable that accounting is following this similar trend as we enter a new era of professional progress that is welcoming diverse viewpoints and revealing a variety of strengths and opportunities.

According to Ozkul and Pamukc (2012), this profession identifies a field that consists of accounting, auditing, and investigative skills. The specialty area of accountancy that deals with engagements arising from actual or potential conflicts or litigation is called forensic accounting. "Suitable for use in a court of law" is what "forensic" means, and forensic accountants typically have to work toward that standard and possible result (Crumbley, Heitger & Smith, 2005).

Auditing and forensic accounting are closely intertwined, especially when discussing forensic auditing. Thus, expert witnesses—forensic services to provide proof in accounting issues in litigations and audits, as well as to certify the integrity of accounting statements diligence—are among the services offered by accountants. The forensic work is entirely analytical in that it ultimately seeks to determine the rate at which the company has suffered losses. In forensic accounting, reports are typically scheduled for a specific time frame. However, regulatory bodies that oversee forensic accounting are nonexistent, in contrast to auditing.

2.1.2 Systematic Approaches to Forensic Accounting Assignment

Since each forensic audit assignment is thought to be distinct, methods to be used and processes carried out will likewise be tailored to each one. Generally speaking, the following actions are taken: Every forensic accounting task is distinct. As a result, the actual strategy used and the actions taken will be unique. All things considered, a lot of forensic accounting projects will generally follow the procedures listed in Zysman (2004): meet with the client, conduct a conflict check, conduct an initial investigation, create an action plan, gather pertinent evidence, conduct the analysis, and write the report.

2.1.3 Characteristics of Forensic Accounting

According to Imoniana, Antunes, and Formigoni (2013), it is beneficial to examine forensic accounting from a wider perspective inside the taxonomies of an accounting sub-activity in order to elaborate on its unique characteristics. Forensic accounting breakdowns like these include the following: Application of forensic standards—possibility of using the reports as a proof of law in courts or tribunals—financial accounting, economics analysis, fiscal and criminal law, psychological, administrative, and investigative dispensation and suitable for usage in the subsequent circumstances.

Examining frauds entails a detailed investigation, estimating the damage to the company, and recommending the arrest of the perpetrator in order to file a criminal complaint. This becomes crucial in today's IT world, where user profiles are quite similar and access controls are somewhat deficient. When a suspect exhibits a certain unusual trait, or combination of traits, that the criminal is also known to possess, this can pose a general issue for forensic identification (Balding and Donnelly, 1995).

2.1.4 Fraud Management

The phenomenon of fraud is widespread and has been around for a while. It takes skill to describe fraud as well as to spot it. There is no one set definition of fraud that applies to all situations because it encompasses deceptive, surprising, cunning, and unfair methods of deceiving someone.

Fraud is the deliberate use of false pretenses to coerce individuals or groups to give up assets or a number of legal rights. It is the act of dishonestly denying someone something to which they might otherwise be entitled in exchange for committing fraud (Onuora, Akpoveta & Agbomah 2018).

Ehioghiren, and Atu (2016), financial crimes can be articulated but not exactly defined. A single description is insufficient. According to Nwaze (2012), In order to obtain unfair advantages that would not have come from such a deceptive procedure, fraud is defined as a prearranged and planned deceptive process or device that is typically carried out by an individual or group of individuals. Nwaze (2012) pointed out that although fraud can take many different forms, it typically involves insiders (employees) and outsiders working together to carry out the scheme.

The Electoral and Financial Crime Commission (EFCC) (2004) and Okafor (2004) define fraud as any unlawful conduct and non-violent crime carried out with the intention of obtaining illegitimate wealth, either on an individual, group, or organized level. This is against the laws currently in effect, which regulate the government's economic operations and management.
Fraud is a human behavior that involves deceit, intentionality, the possibility of getting caught, justification, intense desire, and betrayal of trust, according to Ramamoorti (2007). On the other hand, Nwaze (2012) and Wang, Liao, Tsai, & Hung (2006) have similar opinions about fraud. From their perspective, fraud is a deliberate and complex procedure or tool used by a person or group of people with the main intention of misleading a different person or organization in order to get unfair advantages.

2.1.5 Fraud Prevention

According to Afriyie Akomeah, M. O., Amoakohene, G., Ampimah, B. C., Ocloo, C. E., and Kyei, M. O. (2022), fraud prevention (FP) is the process of putting into practice a plan to identify fraudulent transactions or banking operations and stop them from affecting the client and the financial institution's money or reputation. As online and mobile banking channels grow in popularity and financial institutions continue to digitize, the need for a strong fraud protection strategy will only increase (Alamry et al., 2022). The domains of fraud prevention and cybercrime are dynamic and interconnected. While fraud prevention professionals are developing new technologies for authentication and fraud detection, criminals are using the Dark Web to network, make money, and trade information. Modern con artists use viruses and cutting-edge strategies to succeed in their scams. Internal control is one of the planning and implementation ways to improve control systems and processes to lessen the impact of potential hazards, according to Tien and Thanh (2024). An efficient internal control system must be designed, put into place, and monitored by management.

2.1.6 Fraud Detection

Fraud detection is the gathering of information available to forensic investigators regarding particular and suspected acts carried out to prevent the acquisition of funds or property through deception (Oranefo et al., 2021). Fraud detection techniques are a useful tool in forensic accounting used by a number of businesses, such as banking and insurance (Aminu et al., 2022). Examples of financial fraud include utilizing credit cards that have been stolen or forging cheques. Other forms of fraud could involve fabricating an occurrence or exaggerating losses in order to get paid. Detecting patterns is a typical goal for fraud detection since forensic accounting in fraud cases often employs multiple repeating approaches. Data analysts may, for example, prevent insurance fraud by employing algorithms to identify patterns and abnormalities (Ewa et al., 2020).

2.1.7 Fast-Moving Consumer Goods

Unquestionably, one of the largest manufacturing industries globally is the fast-moving consumer goods (FMCG) sector, which offers a wide range of products, including food, beverages, personal care items, electronics, household goods, and much more (IBAN, 2016). The products stated above are essentially inexpensive, yet they typically have a high unit turnover rate among their customers. This is due to the fact that FMCGs are typically utilized in homes and are widely available (Pradhan and Misra, 2014, KPMG, 2016). FMCGs typically have significant sales volumes, but because their profit margins are low per unit of sold product, the industry as a whole typically has poor profit margins (Bijuna & Sequeira, 2012).

2.2 Theoretical Framework

Several concepts and models that have been created over time form the basis of scholarly discourse on fraud. The fundamental theory of observation, the triangle of fraud, the social learning theory, the fraud Diamond theory, the low handling theory, the social control theory, the hyper-motivation theory, the anomie fraud theory, the differential opportunity theory, the social ecology theory, and the rotten apply theory are a few of the numerous theories on fraud. Eze (2015), Crumbley, Heitger & Smith, (2007).

2.2.1 The Fraud Triangle Theory

This theory was propounded by Donald Cressey in 1950 who believes that there must be a reason behind what people do. The basic question was that what drives people to violate trust?

Forensic accountants analyze this information to find possible fraud, its root causes, and the systemic flaw that allowed it to happen. The three elements that combine to form the fraud triangle notion are opportunity, incentive, and rationalization. An incentive must be present for someone to be a part of a deception.

Opportunity: When internal controls are lax or there is inadequate management oversight of internal control implementation, employees take advantage of their positions to conduct fraud. The majority of employees who commit fraud do so because they can access resources and data that help them hide their dishonest activities. It's true that workers require access to specific platforms in order to carry out their duties, but that same access also gives workers the chance to perpetrate fraud.

Pressure/Incentive: Staff members may commit fraud under duress. Pressure doesn't just refer to monetary hardship. According to Lister (2007), there are three different kinds of pressure or motivation: pressure from within to support one's lifestyle, pressure from the employer to maintain ongoing compensation plans or the financial interests of management, and pressure from outside sources like covenants from financiers, market expectations, and threats to the company's financial stability. The factors that have been found are the driving forces for fraud.

Rationalization: An employee's attempt at rationalization is to explain away their fraudulent actions. This could be used to excuse dishonest behavior, for instance, if an employee is having trouble getting accommodations. Additionally, a worker who feels underpaid could counter that it's a means of increasing their compensation. Therefore, the employee's justification is an act of fraud committed in order to support his behavior. It serves as a means of disguising wrongdoing against the employer. by instilling a sense of guilt in the employers for the situation. The fraud triangle is a tool used by forensic accounting to pinpoint weak places in company systems and identify potential fraud suspects. It is comprised of three fundamental ideas—incentive, opportunity, and rationalization—which when combined produce an environment that is conducive to deception. To perpetrate financial fraud, a person needs to be motivated, given the chance, and able to defend their actions. The triangular

Figure 1: Fraud Triangular Theory

2.2.2 Fraud Diamond Theory

The Fraud Diamond Theory is an off shoot of the fraud triangle theory which was first introduced by Wolf and Hermanson (2007) . According to Eze (2015), the diamond theory of fraud describes how a person's aptitude, character, and abilities play a significant part in determining the likelihood that fraud would occur.

Wolf and Hermanson (2004) and Crumbley, Heitger, and Smith (2007) contend that a fraudster needs specific characteristics, skills, or positional authority in order to carry out his criminal activity. Eze (2015) added that although opportunities can lead to fraud, people will be drawn to it by incentives and justifications; however, for this to happen, the person in question needs to be able to identify an opportunity when one is presented and should be able to take unfair advantage of any loopholes that have been found. For example, regardless of the opportunity or motive, someone who is not proficient in journal or ledger entry in the books of accounts will not be able to manipulate numbers (Rasey 2009).

The theories emphasized the actions taken by forensic accountants in identifying all the motives that led to fraud by parties involved, which can be seen the diagram below:

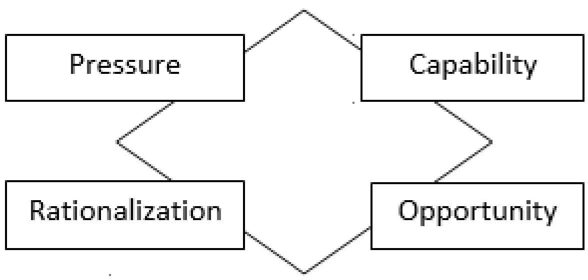


Figure 2: Fraud Diamond Theory

2.3 Empirical Framework

Adesina, Erin, Ajetunmobi, Ilogho, and Asiriuwa (2024) analyze the importance of using forensic audit in avoiding financial crimes that harm or undermine the stability and business continuity of Deposit Money Banks (DMBs) in Nigeria. Of the twenty-two (22) Deposit Money Banks, seventeen (17) banks received a structured questionnaire, which provided the study's primary source of data. The study made use of survey design techniques. The findings of the Ordinary Least Squares (OLS) method analysis and hypothesis testing showed that hiring qualified and experienced forensic auditors would not only help to mitigate financial frauds in DMBs.

Abubakar, Abubakar and Hyellaki (2022) evaluated how forensic audit affected the banking industry in Nigeria's ability to detect fraud. The study's goal is to determine whether forensic audit has an impact on fraud detection. For this study, a field survey was used as the research strategy. Data were gathered from primary sources (interviews and surveys) as well as secondary sources (textbooks, journals, and the internet). A total of 100 individuals, or ten responses, were chosen at random from ten Yola banks. Regression analysis and the Statistical Package for Social Sciences (SPSS) were used to test the hypothesis. The analysis's R square value of 0.795, or nearly 79.5%, indicates that forensic audit greatly enhances fraud detection, as the study's conclusions showed. The paper recommends frequent forensic audits of deposit money bank operations by management in order to successfully detect fraud, which is already a problem in Nigeria's financial system.

Donatus, Atayi, Dashol, Chinshaka (2022) investigated how forensic accounting affected the identification of occupational fraud in deposit money institutions in Nigeria, paying particular attention to trend analysis, data mining, and computer-assisted auditing methods. A well-structured questionnaire was used to gather data from primary sources. Ordinary least square (OLS) regression and descriptive statistics were used to analyze the data. According to the results, R2 and R 2 Adjusted are worth 0.901904 and 0.917484, respectively. Following that, the study comes to the conclusion that trend analysis, computer-assisted auditing, and data mining techniques all significantly improve occupational fraud detection. Data mining technique also significantly improves occupational fraud detection. This research suggests that using forensic accounting techniques will improve the detection of occupational fraud. Therefore, the study suggests that deposit money banks improve their internal control systems by utilizing data mining, computer-assisted auditing, and trend analysis features. This will enable the central bank of Nigeria to identify asset misappropriation fraud in Nigerian deposit money banks.

Edward and Agboare (2021) investigated how forensic accounting affected the identification of financial fraud in Nigerian Deposit Money Banks (DMBs). The study used a survey research approach and heavily relied on primary data collected using a standardized Likert scale questionnaire. Using the Statistical Package for Social Sciences (SPSS version 20.0), regression analysis and descriptive statistics were used to test the data. According to the study's findings, financial fraud detection in Nigerian deposit money institutions is significantly impacted by forensic accounting procedures that involve performing investigations, evaluating financial transactions, and reconstructing incomplete accounting records. The study's conclusions led to the following recommendations: more forensic accountants should be hired by Nigerian DMBs to help combat the financial fraud that has become more prevalent in modern times due to technological advancements. All financial institutions should work with the Central Bank of Nigeria (CBN) to build an electronic fraud risk information center manned by forensic accountants. To discourage fraud, DMBs should have automated control mechanisms like biometric transaction authentication.

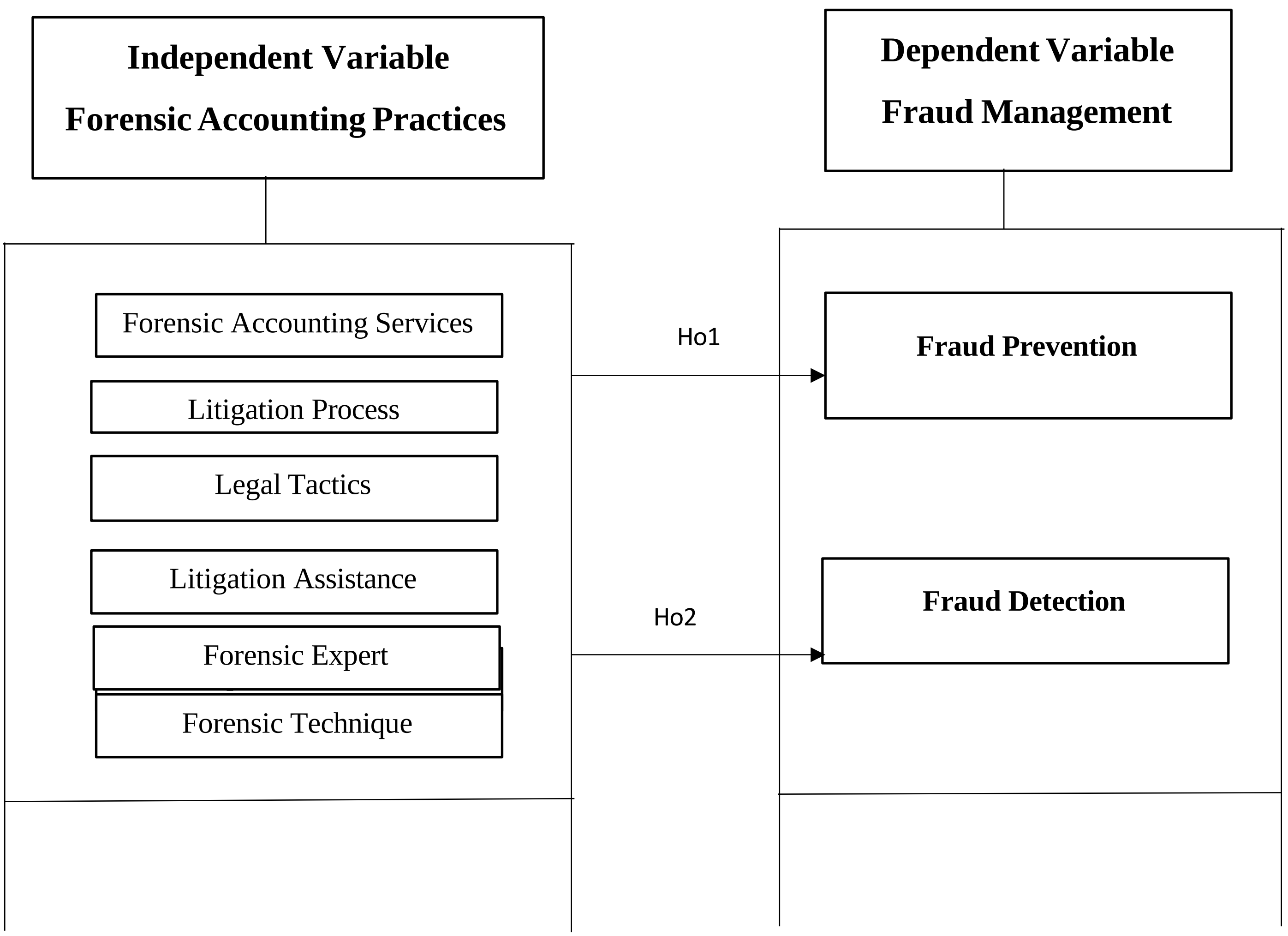
The evaluation of forensic accounting methods, accounting figures, and fraud prevention in listed insurance companies in Nigeria was investigated by Haruna, Oyedokun, and Mainoma (2020). The Cochran formula, as given by Kothari (2013), was used to sample a population of 257 professional accountants and auditors working for listed insurance companies in Nigeria, which made up the study population. The study used a questionnaire and the survey research method; secondary sources included text books, published materials such as journals, and the internet. The statistical software for service solution (SPSS V.21) was used in the study to analyze the data. Among other things, the integrity of the financial statements of listed insurance companies in Nigeria is improved by the use of investigative skill techniques. The individual level of significance of 0.005 and 0.022, both of which are less than the acceptable level of significance of 5%, and the 0.11 coefficient of determination of the primary model, which both corroborate this. This indicates that roughly 74% of the variation in the IFS can be attributed to IST, with other factors not included in the model accounting for the remaining 66% of the variation in the IFS. The most significant recommendation is that Nigerian insurance companies that are publicly traded consider creating an internal control department with a forensic accounting team. This will bolster the veracity of Nigerian insurance companies' financial accounts.

The impact of forensic auditing on bank fraud in Nigeria was studied by Adabenege (2020). Due to the extraordinary rise in bank fraud cases in Nigeria, forensic auditing has become a crucial component of the audit cycle. Modern, Forensic auditing skills, also referred to as diagnostic auditing techniques, are used to help detect, prevent, and mitigate fraud. Forensic audit abilities give the technical capacity for fraud detection, prevention, and reduction in addition to offering more current knowledge of banks' internal control procedures and risk management strategies. Thus, this study examines the relationship between bank fraud in Nigeria and forensic auditing.110 respondents—106 of whom were retrieved—were randomly assigned a well-structured questionnaire as part of our survey research design, which gathered information from primary sources. After applying spearman's rank correlation method to examine the obtained data, we found that there is a statistically significant and highly strong association between forensic audit and fraud detection, prevention, and investigation. The findings show how forensic audit enhances the identification and avoidance of bank fraud. Furthermore, the results show that forensic auditing is an effective method for locating, stopping, and reducing bank fraud in Nigeria. As a result, it is suggested that forensic audit be widely used by specialized businesses like banks and insurance companies to ensure that fraud cases are quickly found and successfully stopped. The constitution also requires that forensic auditors undergo ongoing training from a separate organization. It is recommended that our universities set up standard forensic audit laboratories furnished with the necessary tools for practical study, in addition to teaching forensic accounting and auditing.

Adejana, Ajetunmobi Aina and Samuel (2020) An inquiry examined Nigeria's use of forensic accounting in fraud detection and prosecution. The study assessed the potential impact of forensic accounting on fraud detection and prosecution in Nigeria. The study employed a survey design with a sample size of 30 respondents from the EFCC's Lagos zonal office who worked in the administration, legal, and operations departments. Regression analysis was employed for data analysis, and simple random sampling was used to determine the sample size.The results showed that while the application of forensic accounting had no appreciable impact on fraud prosecution in Nigeria, it had a considerable impact on fraud detection. In accordance with the results, we urge the EFCC to undergo an immediate reorganization in order to establish an independent directorate for forensic accounting. This will enable the organization to prosecute fraud cases more effectively while also standardizing its hiring procedures to guarantee the hiring of agents with strong technical backgrounds in forensic accounting.

Ewa, Adesola and Eseneyen (2020) examined how forensic accounting methods were used to stop or identify fraudulent activity in Nigerian commercial banks, with particular attention to how commercial identification and prevention of fraud were impacted by data mining, ratio analysis, and trend analysis techniques. The data was analyzed using descriptive statistics and the Ordinary Least Square (OLS) model. The results demonstrated that the banking system's ability to detect and prevent fraud was significantly enhanced by the application of forensic accounting techniques. The study also showed how useful trend analysis and ratio analysis techniques are for spotting and stopping fraud. The study also showed how useful commercial data mining software is for spotting and stopping fraud, as well as how most employees are unaware of the capabilities of data mining technology and how to use trend analysis techniques in these situations. It was suggested that commercial banks have to be compelled to buy dependable data mining software and be given better training on the use of data mining and its advantages for the banking sector. Public awareness efforts, the use of anonymous response hotlines, and quick bank responses to questions should also be highly prioritized.

Conceptual Model



Source: Researcher's Conceptual Model (2024)

3.0 Research Methodology

The research design adopted for this study is survey research design. The population of this study is 21 quoted consumer goods companies in Nigeria. The sample size is 20 quoted consumer goods companies and 15 questionnaires each were allotted to each selected company. This gave 300 observations. The sample size determination adopted was Taro Yemane which gave 20 sampled companies. The selected quoted consumer goods companies are Bua Foods, Cadbury Nigeria, Champion Brew, Dangote Sugar Refinery, DN Tyre & Rubber, Flour Mills Nig, Golden Guinea Brew., Guinness Nig, Honeywell Flour Mill, International Breweries, Mcnichols, Multi-Trex Integrated Foods, Nigeria Flour Mills. Nascon Allied Industries, Nestle Nigeria, Nigerian Breweries. Nigerian Enamelware, PZ Cussons Nigeria, Unilever Nigeria, Union Dicon Salt, Vitafoam Nig The sampling technique used was simple random sampling technique. The data type was primary data. And the nature of date was qualitative data. Data collection instrument used was structured questionnaire which contains section A for bio data of the respondents and section B for questions/statements on the objectives of the study. Research tool and analysis, for descriptive statistics, simple table, frequency mean and standard deviation while for inferential statistics, Ordinary Least Square (OLS) and Analysis of Variance (ANOVA) were used to test the Hypotheses.

Model Specification

The general model is:

FM = f(FAP)

The model specifications for the two specific objectives are stated below:

FD = f(FAP)

FP = f(FAP)

FDi= $\alpha 1 + \alpha 2$FAP + εi.............(i)

FPi = $\alpha 1 + \alpha 3$FAP + εi ....(ii)

Where:

FM = Fraud management;

FD = Fraud Detection;

FP = Fraud Prevention;

FAP =Forensic Accounting Practice;

α 1 = Constant,

$\alpha 2$...........$\alpha 3$= Coefficient,

εt = Error term.

4.0 Data Presentation and Analysis

4.1 Preamble

Of the three (300) questionnaires that were administered, two hundred and seventy-six (276) were returned while two hundred and fifty-eight (258) were considered to have been satisfactorily completed, resulting in a response rate of 86.0%. The study considered this to be a good representative for the data analyses.

4.2 Presentation and Demographic Distribution of Data

Table 4.2.1 Descriptive Statistics on demographic variables of Means and Standard Deviations of bio data which are: gender, age bracket, academic qualification, professional qualifications, years of experience, level in organization and department/unit.

Table 4.2.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gender	258	1.00	2.00	1.3588	.48148
Age Bracket	258	1.00	5.00	2.5420	.78701
Highest Academic Qualification	258	1.00	4.00	2.8473	.66185
Highest Professional Qualification	258	1.00	4.00	2.6412	.85096
Years of Accounting Experience	258	1.00	5.00	1.8550	.92089
Level in Organization	258	1.00	3.00	1.7634	.74247
Department or Unit	258	1.00	4.00	1.7252	.80435
Valid N (listwise)	258				

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*

From table 4.1 above and descriptively, it can be seen that gender has a mean and standard deviation of 1.3588 and 0.4815 respectively. Age bracket has a mean and standard deviation of 2.5420 and 0.7870 respectively. The staff highest qualification has a mean and standard deviation of 2.8473 and 0.6619 respectively. Highest Professional Qualification has a mean and standard deviation of 2.6412 and 0.8510 respectively. The years of accounting and related experience has a mean and standard deviation of 1.8550 and 0.9209 respectively too. The level of organization has a mean and standard deviation of 1.7634 and 0.7425 respectively and the department or unit has a mean and standard deviation of 1.7252 and 0.8044 respectively too.

4.2 Description of both independent and dependent variables

Independent Variable

Table 4.2.2 Descriptive Statistics on variables of Means and Standard Deviations of *Forensic Accounting Practices* Dimension.

	N	Minimum	Maximum	Mean	Std. Deviation
FAP_1	258	1.00	5.00	4.3206	1.00205
FAP_2	258	1.00	5.00	4.0687	1.13809
FAP_3	258	1.00	5.00	4.3664	.79620
FAP_4	258	1.00	5.00	4.3740	.77793
FAP_5	258	1.00	5.00	4.2977	.90038
FAP_6	258	1.00	5.00	4.3893	.85550
Valid N (listwise)	258				

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*
From table 4.2.2 above, it can be seen that the least mean (4.0687) is *FAP_2* which is that *Litigation processes are part of the forensic accounting services provided by FMCGs.* and the highest mean (4.3893) is *FAP_6* which is *Expert forensic accounting services are available in Nigerian FMCGs,* while the lowest Standard Deviation (0.7779) is FAP_4 which is *Litigation assistance has an impact on the proper operation of forensic accounting services in Nigerian FMCGs* and highest Standard Deviation (1.1381) which is FAP_2 which is *Litigation processes are part of the forensic accounting services provided by FMCGs*

Where FAP_1 is "*In Nigeria, FMCGs are actively using forensic accounting services."* FAP_2 is "*Litigation processes are part of the forensic accounting services provided by FMCGs."* FAP_3 is "*Legal tactics are part of the forensic accounting services provided by FMCGs in Nigeria."* FAP_4 is "*Litigation assistance has an impact on the proper operation of forensic accounting services in Nigerian FMCGs."* FAP_5 is "*There is dispute settlement as part of the forensic accounting services employed by FMCGs."* FAP_6 is "*Expert forensic accounting services are available in Nigerian FMCGs."*

Dependent Variables

Table 4.2.3 Descriptive Statistics on variables of Means and Standard Deviations of *Fraud Prevention* Dimension

	N	Minimum	Maximum	Mean	Std. Deviation
FP_1	258	1.00	5.00	4.3511	.79347
FP_2	258	1.00	5.00	4.3053	.91897
FP_3	258	1.00	5.00	4.3740	.82589
FP_4	258	2.00	5.00	4.4580	.64759
FP_5	258	1.00	5.00	4.2824	.91378
FP_6	258	1.00	5.00	4.3435	.83915
FP_7	258	1.00	5.00	4.2290	.96528
Valid N (listwise)	258				

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*
From table 4.2.3 above, it can be seen that the least mean (4.2824) is *FP_5* which is *In FMCGs, forensic accountants respond swiftly to specific fraud claims.".* and the highest mean (4.4580) is *FP_3* which is "*Forensic accounting services aid in the prevention of fraud in FMCGs."* while the lowest standard deviation (0.6476) is FP_4 which is *the use of forensic accounting raises management's awareness of internal fraud in FMCGs"* and highest standard deviation (0.9653) is FI_7 which is *the technique of forensic accounting aids in the reduction of financial fraud in Nigerian FMCGs."*

Where FP_1 is "*Forensic accounting aids in the fight against fraudulent activity in Nigerian FMCGs."* FP_2 is *A forensic accounting service minimizes the occurrence of fraud in FMCGs."* FP_3 is "*Forensic accounting services aid in the prevention of fraud in FMCGs."* FP_4 is "*The use of forensic accounting raises management's awareness of internal fraud in FMCGs."* FP_5 is

"*In FMCGs, forensic accountants respond swiftly to specific fraud claims.*" FP_6 is "*As it deals directly with fraud in FMCGs companies, forensic accounting prevents expectation gaps." and* FP_7 is "*The technique of forensic accounting aids in the reduction of financial fraud in Nigerian FMCGs.*"

Table 4.2.4 Descriptive Statistics on demographic variables of Means and Standard Deviations of *Fraud Detection* Dimension

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FD_1	258	1.00	5.00	4.3282	.91519
FD_2	258	1.00	5.00	4.3359	.83768
FD_3	258	1.00	5.00	4.4809	.69450
FD_4	258	1.00	5.00	4.4275	.77490
FD_5	258	1.00	5.00	4.4580	.78701
FD_6	258	1.00	5.00	4.4046	.75221
FD_7	258	1.00	5.00	4.3588	.84187
FD_8	258	1.00	5.00	4.3130	.85110
Valid N (listwise)	258				

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*

From table 4.2.4 above, it can be seen that the least mean (4.3130) is *FD_8* which is *In The use of Forensic Accounting aids FMCGs' internal controls in the identification of fraud".* and the highest mean (4.4809) is *FD_3* which is "*Forensic accountants specialize in fraud investigation, especially for successful criminal prosecution.*" while the lowest standard deviation (0.6945) is FD_3 which is *Forensic accountants specialize in fraud investigation, especially for successful criminal prosecution.*" and highest standard deviation (0.9152) is FD_1 which is *Forensic accounting services can aid in the detection of fraud in the Nigerian FMCGs sector.*"

Where FD_1 is "*Forensic accounting services can aid in the detection of fraud in the Nigerian FMCGs sector.* FD_2 is "*The use of forensic accounting detects fraud and increases stakeholder trust in financial accounts.*" FD_3 is "*Forensic accountants specialize in fraud investigation, especially for successful criminal prosecution.*" FD_4 is "*Computer fraudulent activities are easily identified in Nigerian FMCGs using forensic accounting.*" FD_5 is "*Forensic accounting is useful in detecting fraud in FMCGs.*" FD_6 is "*Forensic accounting is effective in tracking fraud in FMCGs.*" FD_7 is "*Forensic accounting is useful in evaluating internal controls in FMCGs.*" FD_8 is "*The use of forensic accounting aids FMCGs' internal controls in the identification of fraud.*"

4.3 Pre-Estimation Test-Homogeneity of Variance

The study conducted Levene's test of homogeneity of variance to know whether or not Analysis of Variance would be a suitable tool in estimating the specified model. The results of the test are provided in tables 4.3.1 to 4.3.3

***Forensic Accounting Practices* Dimension**

Results in table 4.3.1 show that *p*-value of 0.328 is greater than the level of significance of 0.05. These results compel the rejection of null hypothesis of homogeneity of variance and the acceptance of alternative hypothesis of heterogeneity of variance. These results therefore provide evidence that supports the appropriateness of the use of Analysis of Variance using *Forensic Accounting Practices* as the only independent variable.

Table 4.3.1: Results of Test of Homogeneity of Variance on *Forensic Accounting Practices* Dimension

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
FAP	Based on Mean	2.796	4	254	.328
	Based on Median	.797	4	254	.453
	Based on Median and with adjusted df	.797	4	253.785	.453
	Based on trimmed mean	1.888	4	254	.196

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*

***p*-value< 0.01; ***p*-value< 0.05

***Fraud Prevention* Dimension**

Results in table 4.3.2 show that *p*-value of 0.567 is greater than the level of significance of 0.05. These results compel the rejection of null hypothesis of homogeneity of variance and the acceptance of alternative hypothesis of heterogeneity of variance. These results therefore provide evidence that supports the appropriateness of the use of Analysis of Variance using *Fraud Prevention* as one of the independent variables.

Table 4.3.2: Results of Test of Homogeneity of Variance on *Fraud Prevention* Dimension

		Levene Statistic	df1	df2	Sig.
FP	Based on Mean	.421	4	254	.567
	Based on Median	.073	4	254	.830
	Based on Median and with adjusted df	.073	4	252.492	.830
	Based on trimmed mean	.176	4	254	.519

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*

***p*-value< 0.01; ***p*-value< 0.05

***Fraud Detection* Dimension**

Results in table 4.3.3 show that *p*-value of 0.326 is greater than the level of significance of 0.05. These results compel the rejection of null hypothesis of homogeneity of variance and the acceptance of alternative hypothesis of heterogeneity of variance. These results therefore provide evidence that supports the appropriateness of the use of Analysis of Variance using *Fraud Detection* as one of the independent variables.

Table 4.3.3: Results of Test of Homogeneity of Variances on *Fraud Detection* Dimension

		Levene Statistic	df1	df2	Sig.
FD	Based on Mean	2.584	4	254	.326
	Based on Median	.880	4	254	.595
	Based on Median and with adjusted df	.880	4	252.781	.596
	Based on trimmed mean	1.771	4	254	.258

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*
***p-value< 0.01; **p-value< 0.05

4.4 Test of Reliability

The reliability of the research measures, particularly with regard to the internal consistency of the scale employed and, consequently, its appropriateness, was assessed using Cronbach's Alpha test of reliability. The test's results are displayed in table 4.4 below:

Table 4.4: *Reliability Coefficient for all Research Statements*

Dimensions of Variables	Cronbach's Alpha Coefficient	Number of Items
Dimensions of Independent Variable		
Forensic Accounting Practices	0.763	6
Dimensions of Dependent Variables		
Fraud Detection	0.759	7
Fraud Prevention	0.735	8

*(**Source**: Field Survey,2024 & Computations Aided by SPSS Version 25.0)*

Table 4.4's data suggest that the study's scale is internally consistent because it displays a coefficient that is above 0.60, a benchmark set by Heliyon (2022) avail that result between 0.60 – 0.80 is good. This implies that the research measures are considerably reliable.

4.5 Test of Hypotheses

<u>**Hypothesis 1**</u>

Ho_1: The application of forensic accounting practices established does not prevent financial fraud in selected listed consumers' goods firms in Nigeria.

Table 4.5.1: Model Summary for Hypothesis One

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.325[a]	.105	.055	.97434	1.133

a. Predictors: (Constant), FAP

As noted in table 4.5.1, the R Square of 10.50% suggests a very strong model. The 10.50% R Square revealed that total variation in the fraud prevention in FMCGs is attributed to forensic accounting practices while 89.50% of the total variation in the forensic accounting practices is accounted for by other variables captured in the model.

Table 4.5.2: Result of ANOVA for Hypothesis One[a]

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.765	7	1.966	2.071	.052[b]
	Residual	116.769	251	.949		
	Total	130.534	258			

a. Dependent Variable: FP

b. Predictors: (Constant), FAP

The overall fitness of the model is established based on the results in table 4.5.2, from which it can be inferred that Forensic Accounting Practices have significant influence on fraud prevention of FMCGs in Nigeria (F= 2.071, *p*-value =0.000).

Table 4.5.3: Result of Ordinary Least Square for Hypothesis One[a]
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	1.970	1.159		1.699	.092		
	FP_1	.237	.108	.188	2.199	.030	.997	1.003

a. Dependent Variable: FAP.

Results in table 4.5.3 revealed that the partial elasticity coefficient of forensic accounting practices with respect to fraud prevention in FMCGs in Nigeria is 0.092, indicating that forensic accounting practices affect fraud prevention in FMCGs in Nigeria. This coefficient is however significant (t=1.699, *p*-value>0.05) to individually forensic accounting practices influence slightly affects r fraud prevention in FMCGs in Nigeria. With these results, the null hypothesis is rejected, while the alternative hypothesis is accepted. The inference there from is that the application of forensic accounting prevents financial fraud in selected listed consumers' goods firms in Nigeria.

Hypothesis 2

Ho_2: The application of forensic accounting practices accessed does not detect financial fraud in selected listed consumers' goods firms in Nigeria.

Table 4.5.4: Model Summary for Hypotheses Two
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.316[a]	.100	.041	.98121	1.208

As noted in table 4.5.4, the R Square of 10.0% suggests a strong model. The 10.0% R Square revealed that the total variation in the fraud detection of FMCGs is attributed to forensic accounting practices, while 90.0% of the total variation in the fraud detection is accounted for by other variables not captured in the model.

Table 4.5.5: Result of ANOVA for Hypothesis Two
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.075	8	1.634	1.698	.106[b]
	Residual	117.459	252	.963		
	Total	130.534	260			

a. Dependent Variable: FD
b. Predictors: (Constant), FAP

The overall fitness of the model is established based on the results in table 4.5.5, from which it can be inferred that forensic accounting practices have significant influence on fraud detection in FMCGs (F= 1.698, *p*-value =0.000).

Table 4.5.6: Result of Ordinary Least Square for Hypothesis Two [a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	1.025	1.313		.781	.436		
	FD_8	.231	.106	.196	2.177	.031	.907	1.102

a. Dependent Variable: FAP.

Results in table 4.5.6 revealed that the partial elasticity coefficient of forensic accounting practices with respect to fraud detection of FMCGs .436, indicating that forensic accounting practices affect fraud detection of FMCGs in Nigeria. This coefficient is also statistically significant (t=2.177, *p*-value<0.05) to individually forensic accounting practices influence affects fraud detection of FMCGs. With these results, the null hypothesis is rejected, while the alternative hypothesis is accepted. The inference there from is that forensic accounting practices significantly detect fraudulent activities in Nigerian fast moving consumer goods.

4.6 Post Estimation Tests

4.6.1 Normality of Residuals

As shown in table 4.6.1, the mean residual of is 0.0000, indicating that the residuals from the estimated ordinary least square regression are normally distributed and the variance of the residuals is the same for all values of the independent variable.

Table 4.6.1: Results of Residual Statistics

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.8652	5.2011	4.3206	.44745	258
Residual	-3.49258	1.47435	.00000	.89660	258
Std. Predicted Value	-3.253	1.968	.000	1.000	258
Std. Residual	-3.788	1.599	.000	.973	258

a. Dependent Variable: Forensic Accounting Practices

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.5132	5.0844	4.3206	.32540	258
Residual	-3.19426	1.43923	.00000	.94775	258
Std. Predicted Value	-2.481	2.347	.000	1.000	258
Std. Residual	-3.278	1.477	.000	.973	258

a. Independent Variable: Fraud prevention

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.2832	4.9996	4.3206	.31714	258
Residual	-3.40882	1.35137	.00000	.95054	258
Std. Predicted Value	-3.271	2.141	.000	1.000	258
Std. Residual	-3.474	1.377	.000	.969	258

a. Independent Variable: Fraud detection

*(**Source**: Field Survey, 2024 & Computations Aided by SPSS Version 25.0)*

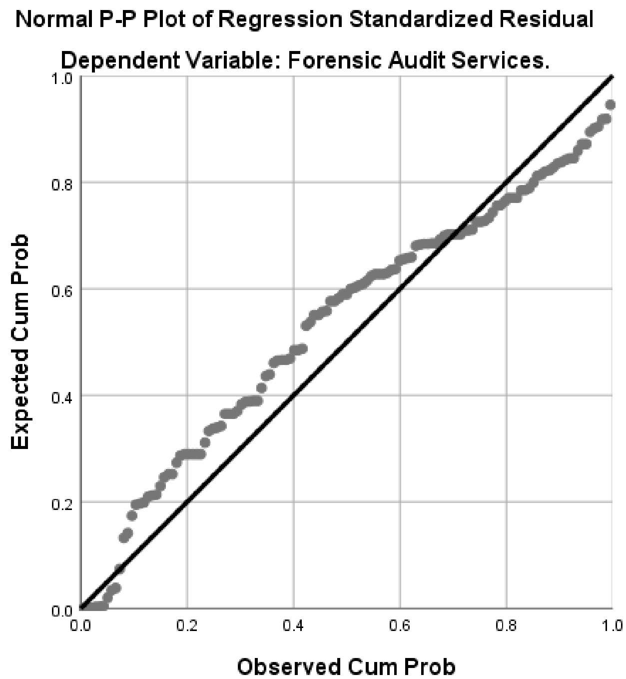


Figure 4.6: Normal P-P Plot of Regression Standardized Residual

4.7 Discussion of Findings

Analyses from the previous sections revealed that the selected Fast Moving Consumer Goods (FMCGs) embraced forensic accounting practices and fraud management in Nigeria. Inferential results using regression analysis show as noted in table 4.5.1, the R Square of 19.9% suggests a very strong model. As noted in table 4.5.4, the R Square of 10.50% suggests a very strong model. The 10.50% R Square revealed that total variation in the fraud prevention in FMCGs is attributed to forensic accounting practices while 89.50% of the total variation in the forensic accounting practices is accounted for by other variables captured in the model. As noted in table 4.5.7, the R Square of 10.0% suggests a strong model. The 10.0% R Square revealed that the total variation in the fraud detection of FMCGs is attributed to forensic accounting practices, while 90.0% of the total variation in the fraud detection is accounted for by other variables not captured in the model.

Using ANOVA, it can be inferred that the overall fitness of the model is established based on the results in table 4.5.5, from which it can be inferred that forensic accounting practices have significant influence on fraud prevention of FMCGs in Nigeria (F= 2.071, p-value =0.000). The overall fitness of the model is established based on the results in table 4.5.8, from which it can be inferred that forensic accounting practices have significant influence on fraud detection in FMCGs (F= 1.698, p-value =0.000). Results in table 4.5.6 revealed that the partial elasticity coefficient of forensic accounting practices with respect to fraud prevention in FMCGs in Lagos State Nigeria is 0.092, indicating that forensic accounting practices affect fraud prevention in FMCGs in Nigeria. This coefficient is however significant (t=1.699, p-value>0.05) to individually forensic accounting practices influence slightly affects r fraud prevention in FMCGs in Nigeria. With these results, the null hypothesis is rejected, while the alternative hypothesis is accepted. The inference there from is that There is significant relationship between forensic accounting practices and fraud prevention in Nigerian Fast Moving Consumer Goods. Results in table 4.5.9 revealed that the partial elasticity coefficient of forensic accounting practices with respect to fraud detection of FMCGs .436, indicating that forensic accounting practices affect fraud detection of FMCGs in Nigeria. This coefficient is also statistically significant ($t=2.177$, p-value<0.05) to individually forensic accounting practices influence affects fraud detection of FMCGs. With these results, the null hypothesis is rejected, while the alternative hypothesis is accepted. The inference there from is that Forensic Accounting practices significantly detect fraudulent activities in Nigerian fast moving consumer goods companies.

The study's conclusions are same with Adesina,et al (2024) whose results demonstrated that the use of knowledgeable and skilled forensic Accounting would not only contribute to the amelioration of financial frauds in FMCGs, Abubakar, et al (2022) also found from their study that forensic Accounting has a significant effect on fraud detection by virtue of the analysis showing an R square value of 0.795(i.e 79.5% approx.) Also Donatus, et al (2022) demonstrated that trend analysis and computer-assisted accounting techniques had a significant positive impact on occupational fraud detection, while data mining technique had a significant positive impact.

Edward and Agboare (2021) Results demonstrated the strong impact of forensic accounting approaches on financial fraud detection in the areas of financial transaction analysis, investigation, and reconstruction in Fast Moving Consumer Goods in Nigeria. Adabenege (2020) found out that there is a very strong and statically relationship that exist between forensic Accounting and fraud detection, prevention and investigation.

Adejana, et al, (2020) results showed that while the application of forensic accounting had no appreciable impact on fraud prosecution in Nigeria, it had a considerable impact on fraud detection.

Ewa, et al (2020) outcome showed that using forensic accounting techniques greatly improved fraud identification and prevention within the financial system. Abdulrahman, (2019) According to this study, there is a strong correlation between fraud prevention and forensic accounting methods. In 2019, Zachariah et al. In order to incorporate forensic accountants into the accounting team, the study recommended changing the current statutes to allow for the use of forensic accounting in Nigerian consumer goods companies. The findings of Onodi et al. (2019) revealed that although fraud cases usually require the specialized services of forensic investigators, the majority of Nigerian accountants and accounting staff members have a poor understanding of and familiarity with forensic investigative techniques. Aribaba (2018)’ study revealed that forensic accounting services has a lot of potential and can immensely contribute to the development of Nigerian economy.

Okoye and Gbegi (2018) in their study it was discovered that using forensic accounting can improve the detection and prevention of fraud cases in public-sector organizations by substantially lowering the frequency of fraud cases in the sector. Kolawole, et al (2018) study revealed that forensic accounting reduces asset misappropriation in Nigerian Fast Moving Consumer Goods. Ogundana, Wisdom and Oladapo's (2018) research findings showed that forensic accounting significantly affects both the prevention and detection of fraud. The findings of Onuorah and Ebimobowei (2018) showed that the degree of fraud committed by consumer goods companies is impacted by the use of forensic accounting services. According to Muthusamy's (2018) findings, the current conceptual model validates perceived risks and benefits as important direct antecedents of attitude. According to Njanike, Dube, and Mashayanye's (2018) findings, forensic accounting departments face a number of difficulties, including a lack of technical expertise, materials resources, managerial intervention, and ambiguous professional recognition.

Contribution to knowledge

The study will serve as a policy guidelines and framework for policy makers, management of fast-moving consumer goods companies, economic and financial crimes commission, and other on the importance and need for forensic accounting practices to be adopted in other to prevent and detect fraud in other industries outside Fast-Moving Consumers' Goods Companies.

5.0 Conclusion and Recommendations

5.1 Conclusion

From the findings of this study which follows Fraud triangular theory and Diamond theory, it can be concluded as follows that:

i. There is significant relationship between forensic accounting practices and fraud prevention in Nigerian fast moving consumer goods.
ii. Finally result forensic accounting practices significantly detect fraudulent activities in Nigerian fast moving consumer goods.
iii. Jointly, forensic accounting practices have significant effect on fraud prevention and detection in Nigerian fast moving consumer goods system.
iv. However, availability of forensic accounting expert has the highest force when compare to other sub variables of forensic auditing practices.
v. While the least one is among the independent variable is litigation process.

5.2 Recommendations

The recommendations made by the study align with the findings of the literature review and research objectives with their implications.

i. According to the report, it is critical to update the organizational structure of the business to better accommodate forensic accounting services in other to prevent the fraudulent activities within the organisation.

ii. It is imperative that internal controls department and management get education and information on the most prevalent kind of fraud and the department is accountable in order to detect and combat unjustifiable financial loss and fraudulent practices. This could help lower the number of lawsuits filed against the auditors, which can be expensive and harm the company's reputation.

iii. It is necessary for the industry to provide precise guidelines to direct accounting practices in the rapidly evolving consumer product's business.

iv. Professional forensic accountants are required to conduct investigations in prosecution cases according to established forensic protocols, and in fraud situations, they are to take disciplinary action.

v. Forensic accounting services should be made available to fast-moving consumer goods companies in Nigeria by the Corporate Affairs Commission (CAC), Manufacturing Association of Nigeria (MAN), and Nigeria Deposit Insurance Corporation (NDIC).

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Forensic accounting in predicting the financial performance growth of MTN mobile communication in Nigeria

Abstract

To emphasize the importance of fraud reporting, fraud prevention, and litigation as forensic accounting instruments, it is necessary to address the issue of financial performance growth in every consistent manner for any company in Nigeria to avoid a collapse in financial performance. The purpose of this paper is to demonstrate how forensic accounting may be used to predict the financial performance and growth of MTN mobile communication in Nigeria in the future.

Methods: The data used for this study was collected from world bank publication, Nigeria stock exchange factbook and National bureau of statistics (NBS) record from a period of 1990 to 2021. The method of data analysis that will be adopted for this paper are ordinary least square (OLS) regression analysis, unit root test, and cointegration analysis.The ordinary least square (OLS) regression model was used in this paper, and the results show that the model is statistically significant, indicating that there is a significant relationship between forensic accounting instruments and growth in financial performance. According to the coefficient of determination (R-squared), forensic accounting indicators can explain approximately 73 per cent of the variation in financial performance growth. This indicates that the fitted model is adequate for predicting the growth of financial performance in the future. A long-term relationship exists between forensic accounting and the financial performance growth of MTN mobile communication in Nigeria, according to the results of the Johansen cointegration test, which was conducted recently. The regression analysis conducted for this paper reveals that the number of fraud cases reported and the rate of fraud prevention, both of which are forensic accounting indicators, are statistically significant and have a positive significant impact on financial performance growth. Furthermore, if fraud is not controlled, it has the potential to devastate the financial performance of telecommunication companies. Therefore, MTN and other telecommunication companies must put in place a policy within their respective organizations that will continuously fund the cost of forensic accounting so that they can maintain a sustainable level of financial performance growth.

Keywords: Financial performance growth; forensic accounting; OLS regression model; R-squared; Johansen cointegration

Introduction

As a result of the increasing prevalence of fraudulent practices in modern organizations, traditional auditing and investigation methods have become inefficient and ineffective in the detection and prevention of the various types of fraud that confront businesses around the world, particularly in Nigeria. Oyejide (2008) said that fraud is a topic that has gotten a great deal of attention both internationally and in Nigeria, and that this is true. This heightened awareness has been fueled by several high-profile incidents involving a variety of organizations. In the academic literature, issues linked to fraud have also been the subject of careful theoretical and empirical investigation (Appah &Appiah, 2010). The increasing prevalence of fraud, according to Karwai (2002), is causing significant disruption in the Nigerian telecommunications business. There are billions of dollars in losses as a result of telecommunication fraud. Respondents to a recent Communications Fraud Control Association (CFCA) fraud study reported a total of $2 billion (USD) in proven fraud losses at their respective companies, according to the results of the poll (Communications Fraud Control Association, 2011). The most common types of fraud losses recorded by operators are compromised voicemail systems, subscription theft, and by-pass fraud, among others. The reason for this is that fraud has permeated every element of Nigerian culture to the point that many businesses have lost the trust of their customers as a result of the fraud epidemic. According to Adesola (2008), the threat of fraud to the global economy is better illustrated by statistics released by Criminologists at a consulting firm, which revealed that over two hundred thousand cases of online fraud were committed in the United Kingdom in 2006, more than doubling the number of real-world robberies committed in the same period. According to the findings of the study, online fraud accounted for 75% of all card not present fraud in 2006. Fraud in both high and low locations is a source of concern for the global market. Enron, WorldCom, and other similar companies are well-known to us. In addition, we are seeing an increase in the number of scams committed in society. Following a string of corporate failures, Okunbor and Obaretin (2010) reported that accountants now have greater responsibility and function to equip themselves with highly sophisticated skills to identify and act upon indicators of poor corporate governance, mismanagement, and fraud and other malpractices. It has now become mandatory for accountants at all levels to possess the necessary skills and expertise for identifying, uncovering, and preserving evidence of all types of irregularities and fraud, regardless of their degree of experience. As a result, fraud requires a more complex strategy for its management, ranging from prevention to detection and investigation. When it comes to fraud management, including prevention, detection, and comprehensive control, one of the more contemporary techniques that can be used is the forensic accounting service. This is one of the more modern approaches that can be used. In the opinion of Hansen (2009), computer forensics is the most appropriate and, in many cases, the greatest instrument for investigators to utilize in the detection and implementation of white-collar crime investigations. forensic accounting, according to Degboro and Olofinsola (2007), is defined as the application of criminalistic methods, as well as the integration of accounting investigative operations and legal procedures, to detect and investigate financial crimes and related accounting misbehaviors. The persistent string of embarrassing audit failures that have occurred over the previous 52 years has triggered a paradigm shift in the accounting profession (Eliezer & Emmanuel, 2015). According to popular belief, forensic accounting developed in response to several newly discovered fraud-related incidents. While the Enron and WorldCom cases are well-known, recent scandals that have rocked the business world, such as the well-publicized Enron and WorldCom cases, have also brought the field of forensic accounting to the forefront. When it comes to identifying financial wrongdoing, forensic accounting is considered a synthesis of all other investigation-related fields. Because financial fraud is becoming increasingly sophisticated, forensic accounting must be added to the arsenal of techniques available to investigators and prosecutors to ensure that those involved in criminal activities are successfully investigated and prosecuted (Moduga & Anyaduba, 2013). Generally speaking, forensic accounting is expected to provide some relief from the perceived vulnerability of standard accounting and auditing systems to financial fraud. The use of forensic accounting services in fraud management in the Nigerian telecommunications industry is projected to be a topic of great importance in the sector shortly. Unfortunately, the application of forensic accounting skills in the management of financial fraud in telecommunication businesses in Nigeria has not piqued the interest of policymakers in the industry and regulators of Nigeria's telecommunications sector. There has been a great deal of scholarly attention paid to forensic accounting and fraud control, detection, and prevention by scholars, writers, and academics in the field of accounting and other allied areas, but none of this literature has addressed forensic accounting and fraud management issues in the Nigerian telecommunications industry. Referencing the thread of studies by Akindele (2011), Chi-Chi & Ebimobowei (2012), Famous and Okoeguale (2012), Odi (2013), and others as cited in Eliezer and Emmanuel (2015), which have focused on the impact of fraud on commercial banks' performance, while another thread of studies by Idowu (2009), Nwaze (2006), Ogunleye (2010) have focused on the factors that influence the Other studies on forensic accounting, fraud detection, and prevention include those by Eliezer and Emmanuel (2015), Temitope (2014), Dada, Ajao, and Okwu (2013), Modugu & Anyaduba (2013), Okoye & Gbegi (2013), Augustine & Uagbale-Ekatah (2013), and Modugu & Anyaduba (2012). Litigation, fraud detection, fraud cases reported, and fraud prevention rate are some of the forensic accounting indicators that will be used in predicting MTN's financial performance. The major purpose of this study is to apply forensic accounting indicators to predict the financial performance growth of MTN mobile communication in Nigeria. Additionally, this research will look into the impact of forensic accounting on the financial performance growth of MTN mobile communication in Nigeria, as well as the relationship between forensic accounting and financial performance growth at MTN mobile communication in Nigeria.

Literature review

When forensic accounting was first introduced in the 1980s, it was considered a novel career, with the breadth of this new profession encompassing management accounting, auditing, and investigative abilities (Muslimat & Hammid, 2012). Individuals who served as the pharaoh's eyes and ears over his grain, gold, and other assets, according to Singleton and Singleton (2010), can trace the history of forensic accounting back to the reign of the Pharaoh in Egypt, where they worked as his eyes and ears. Forensic accounting is an indispensable tool for greater accountability, fraud detection, fraud reporting and fraud prevention that could jeopardize the performance growth of any company (Chariri.A, 2019). In addition to fraud investigation, fraud prevention, and the inspection of anti-fraud systems, they define forensic accounting as the collection of both financial and non-financial information, which includes both financial and non-financial information (Brown, Aiken, and Visser, 2020). Forensic accounting, on the other hand, is characterized by Crumbley (2016) as a subfield of forensic science that can be defined as the application of natural law to human laws, as opposed to criminal law. A forensic scientist who also provides an expert opinion regarding their findings in a court of law is regarded as an examiner and interpreter of evidence and facts in legal proceedings, according to the professor. Because it is an accounting science, it is expected that the examination and interpretation would be undertaken to obtain economic data. Based on financial data analysis, forensic accountants can compute values, draw inferences, and identify unusual patterns or questionable transactions. A forensic accountant's responsibilities include, among other things, identifying fraud offenders and tracing money laundering and theft operations, which may involve tax evasion and tax avoidance. Fraud, according to Modugu and Anyaduba (2013), is classified as a property crime. They define it as the illegal conversion of another's property into one's possession through the use of one's techniques. Williams (2005) delves more into the topic of financial crimes, which include fraud and corruption. According to Williams's (2005) description of the phenomenon, bribes and cronyism are among the methods of corruption used. Other methods of corruption include political donations, kickbacks, voicemail systems, telecommunication fraud, most notably MTN mobile communication (subscription/identity theft, international revenue share fraud, credit card fraudulent transactions, and bypass fraudulent transactions), artificial pricing, and other types of fraud. To cover all of the aspects of financial crime, several of which have already been discussed, it is impossible to list them all. The Economic and Financial Crimes Commission Act 2004, which is cited in Modugu and Anyaduba (2013), tries to capture economic and financial crimes that are committed within or outside the organization's borders. By the Economic and Financial Crimes Commission (EFCC) Act (2004), violent, criminal, and illicit actions are defined as those performed to illegally accumulate riches in a manner that violates existing regulations. In addition to child labor, illegal oil bunkering and illegal mining, tax evasion, and foreign exchange malpractice, such as the counted currency mafia, these activities include all forms of fraud, narcotics drug trafficking, money laundering, embezzlement, bribery, and looting. Among the financial crimes committed by corporate entities, as well as those described by the provision's authors, are those involving money laundering (William, 2005; Khan, 2005). According to historical evidence, financial crimes have been linked to the demise of numerous corporate entities in the past. According to Cotton (2003), corporate-wide fraud was to blame for the failure of Enron, WorldCom, Tyco, and Adelphia, among other companies. The fraudulent scheme is estimated to have cost 460 billion (USD). It has been determined that Cacao Nigeria Plc's financial records were fraudulently altered by the company's management, resulting in an N15 billion loss in the Nigerian market. Various financial malpractices are believed to have resulted in the loss of approximately one trillion nairas in Nigeria's nine collapsed commercial banks. According to the EFCC Act (2004), the EFCC is still investigating this situation. According to operators in the telecommunications industry, the following are the top five (5) categories of fraud losses: Fraud losses totalled 4.96 billion (USD), with 4.32 billion (USD) attributed to compromised PBX/Voicemail systems, 3.84 billion (USD) attributed to international revenue share fraud, 2.88 billion (USD) attributed to by-pass fraud, and 2.40 billion (USD) attributed to credit card fraud in 2013. It is possible to commit financial fraud in a variety of ways, and it is usually done by both individuals and organizations. The nature, character, and mode of operation of financial fraud in businesses vary significantly depending on the industry (Ajie&Ezi, 2000; Karwai, 2002). A fraudster who is distinct from another fraudster and a fraudster who conducts fraud using different methods are two types of fraudulent activity that can be distinguished in general. Internal fraud, external fraud, and mixed fraud are all types of fraud that can be classified according to the characteristics of the perpetrators. Internal fraud is committed by members of the organization's staff and directors, whereas external fraud is committed by individuals who are not affiliated with the organization, and mixed fraud is committed by outsiders who work in conjunction with the organization's staff and directors to perpetuate the fraud. According to Karwai (2002), pinpointing the root causes of fraud can be a difficult undertaking. Moreover, as he pointed out, modern-day corporations generally perpetrate frauds through a sophisticated web of conspiracy and deception, which serves to conceal the true nature of the fraudulent activity. In a study conducted by the researchers Ajie and Ezi (2000), it was discovered that on average, out of every ten employees, eight would look for opportunities to steal if given the opportunity, and only four would be honest in their daily work. In addition to that, forensic accounting is available. Forensic accounting, according to Joshi (2003), is defined as the application of specialized knowledge and specific talents to unearth evidence of economic abnormalities. Howard and Sheetz (2006) define forensic accounting as the process of evaluating, summarizing, and presenting complicated financial issues in a timely and factual manner, most often as a witness in a legal proceeding. Particularly relevant is the application of accounting discipline to the resolution of factual disputes in commercial litigation, which is the subject of this paper (Okunbor & Obaretin, 2010). Forensic investigation, according to Degboro and Olofinsola (2007), is defined as the discovery and establishment of facts to support a legal claim or action. Therefore, forensic accounting techniques can be applied to the detection and analysis of crimes, allowing investigators to uncover all of the underlying characteristics and identify the perpetrators. As Gray (2008) argues, forensic accountants are the best-prepared professionals to conduct forensic investigations because they combine the skills of an auditor with the skills of a private investigator. Law enforcement agents require a wide range of skills including investigative abilities, research skills, legal knowledge, mathematical methods, financial knowledge, auditing and accounting knowledge, as well as the ability to think critically. The primary responsibility of a forensic accountant is to examine complex financial and business-related issues, interpret and synthesize them, and present them in a way that the general public can understand and appreciate. Internal control systems have been referred to as the most important tool for preventing and detecting fraud in a variety of settings, including financial institutions (Wells, 2004). Forensic accounting, as defined by Dhar and Sarkar (2010), is the application of accounting concepts and procedures to the resolution of legal disputes. When fraud is discovered, it must be reported as soon as possible, and the report is admissible as evidence in a court of law or an administrative hearing procedure. A forensic accountant's skills are applied in potential, real civil or criminal disputes, such as determining losses or profits, incomes and damages, internal control estimations and frauds, and other situations involving the incorporation of accounting knowledge into the legal system. According to the Association of Certified Fraud Examiners (ACFE), forensic accounting is defined as the application of skills in potential, real civil or criminal disputes.

Review of Financial performance growth of MTN Nigeria Communication PLC

The Nigerian telecommunications industry has grown exponentially in the last two decades as a result of deregulation and liberalization (NCC, 2020). While the sector contributed only 0.1% of Gross Domestic Product (GDP) in 1999, it will generate 2.3 trillion in revenue in quarter 2, 2020, accounting for 14.30% of total GDP (NBS, 2020). The sector has established itself as one of the most resilient in Nigeria, contributing to the country's positive growth in the gross domestic product by capitalizing on the country's rapidly growing population. The Coronavirus pandemic has wreaked havoc on economies worldwide, including those in Nigeria. On the other hand, the telecommunications industry has benefited enormously from the pandemic (NCDC, 2021). The current popularity of lockdown directives and work-from-home policies has boosted the demand for virtual communications, internet access, and teleconferencing services (NCDC, 2021).

Nigeria's telecommunications industry also benefited from the pandemic printing, posting an 18.10% real growth in quarter 2, 2020, despite the economy contracting by 6.10% in quarter 2, 2020, putting the country on track to enter its second recession in less than five years (WHO, 2020).

As of July 2020, the data indicated that Nigeria had 198.9 million GSM mobile subscribers. MTN Nigeria led the market in Nigeria with a 40.39 per cent lion's share, followed by its fiercest competitors Airtel (26.99%) and Glo (26.99%). (26.51 per cent). With 12,163,330 GSM subscribers, 9mobile (formerly Etisalat) has the smallest market share at 6.11 per cent (NSE, 2020). An examination of the nitty-gritty of Nigeria's leading telecom's performance (MTN Nigeria) should shed light on how Telecoms fared both during and after the lockdown. MTN Nigeria is well on its way to achieving its lofty annual revenue target of $1 trillion.

MTN Nigeria added 6.8 million subscribers, bringing the total number of mobile subscribers on the network to 71.1 million by June 2020. Revenues generated in the first half of the year increased by 12.5% to 638.08 billion, up from 566.95 billion in the same period last year. Revenue growth was primarily driven by a 12.6% increase in revenue from services provided, which accounted for 99.8% of total revenue during the quarter (NCC, 2021).

Research methodology

This study adopted a secondary quantitative research design which involves the collection of quantitative data from already existing reliable sources such as where the data used for this work is collected. The quantitative data used for this work is also called secondary data and was collected from a world bank publication, the Nigeria stock exchange factbook and the National Bureau of Statistics (NBS) record from a period of 1990 to 2021. The secondary quantitative research was used to analyze the relationship between two variables of interest in this study and also to make useful future predictions. The method of data analysis that will be adopted for this paper is descriptive statistics (using mean and standard deviation for the data summary), ordinary least square (OLS) regression analysis, unit root test, and cointegration analysis. The variables of interest in this study are forensic accounting and the financial performance growth of MTN mobile communication.
Forensic accounting indicators are Litigation, Fraud detection, Fraud cases reported, and Fraud prevention rate, which are the independent variables while the dependent variable is the financial performance growth of MTN mobile communication. The computer software for the analysis of this work is EViews version 11.0.

Results and discussion

Table 1. Variable measurements

Variables	Measurements (unit)
Financial performance growth	Percentage (%)
Litigation	Percentage (%)
Fraud detection	Percentage (%)
Fraud cases reported	Percentage (%)
Fraud prevention	Percentage (%)

Source: Author

OLS regression analysis

Regression analysis is an analytic technique that is very appropriate for predicting a dependent variable with one or more independent variables. It also establishes relationship between the variables as well as the impact of independent variables on the dependent variable. The regression model adopted for this paper can be expressed as follow;

$$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

where

Y = Financial performance growth of MTN mobile communication

X_1 = Litigation

X_2 = Fraud detection

X_3 = Fraud cases reported

X_4 = Fraud prevention rate

β_o is the constant term or the intercept while β_1 to β_4 are the coefficient estimate of the independent variables while ε is the random error term.

The constructed model for this research is regression model and it is a parametric test predicting the financial performance growth of MTN mobile communication. Dependent variable is financial performance growth of MTN mobile communication, while the independent variables are forensic accounting indicators are Litigation, Fraud detection, Fraud cases reported, and Fraud prevention rate.

The normality and multicollinearity check are necessary to ensure the model is reliable and robust. Multicollinearity usually caused a misleading R-squared and P-values (that is, misleading results) if present. The Shapiro-Wilk test (Razali, Norna diah; Wah, Yap Bee, 2011) was performed to test for normality of the data set and variance inflation factor (VIF) is the indicator for the checks of multicollinearity (O'Brien, R. M, 2007). If VIF is less than 5 (VIF<5), it means the model does not suffer from the problem of Multicollinearity. However, for normality, the null hypothesis strictly state that the data is normally distributed when it is accepted (that is, P>0.05) and not normally distributed if rejected. EViews version 11.0 is the computer software that will be used for this research paper.

Unit root test

When a series lacks stationarity, the unit root test, also known as the stationarity test, detects the presence of a unit root, which may yield erroneous findings if not eliminated. Unit root testing is performed using the augmented dickey-fuller (ADF) test to eliminate the possibility of erroneous results. The hypothesis to accomplish the unit root test is stated below as:

H_0: there is a presence of a unit root (series is not stationary) vs H_a: there is no unit root (the series is stationary). The ADF test can be presented mathematically as:

$$\Delta Y_t = \theta + \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i Y_{t-i} + \omega_t$$

Where, θ is a constant, γ is the coefficient of process root, β_i coefficient in time tendency, p is the lag order and ω_t is the disturbance (error) term.

3.4 Cointegration analysis

Johansen cointegration test is an approach for testing cointegration of integrated series with zero level I (0), order 1, I (1)- after first difference or of order 2, I (2)- after second difference (Johansen, 2001). This test permit more than one cointegrating relationship. So, it is more generally applicable than Engle-Granger test which is based on the Dickey-fuller (or augmented) test for unit root. There are two types of Johansen test which are the trace and max eigen value, and they form the basis of the inference or decision and their result might be little different from other.

The Var model indicated by Var(p) is mathematically defined in a general term below as:

$y_t = a + \beta_1 y_{t-1} + \beta_2 y_{t-2} + \ldots\ldots + \beta_p y_{t-p} + e_t$

It is important to note that the variables should be stationary before proceeding to Johansen Cointegration test.

Result and Interpretation

Table 2 show that financial performance growth (M = 85.84, SD = 10.74) indicate that average financial performance of MTN mobile communication grow by about 86% with variability of about 11% which agree with the situation on ground as MTN Nigeria benefited greatly from the pandemic situation with an usual increase in subscribers making MTN the lead in telecommunication. Litigation (M = 70.72, SD = 8.52) implies that the average litigation cases is about 71% with variability of about 9%.

Table 2. Descriptive statistics

Variables	Observations	Mean	Standard deviation
Financial performance growth	32	85.84	10.74
Litigation	32	70.72	8.52
Fraud detection	32	52.56	7.75
Fraud cases reported	32	63.53	8.83
Fraud prevention	32	12.19	2.33

Source: Author’s computation using EViews software

The fraud detection (M = 52.56, SD = 7.75) means that the average fraud detection is about 53% with variability of about 8%. Fraud cases reported (M = 63.53, SD = 8.83) indicate that the average of reported cases of fraud is about 64% with variability of about 9%. In the same vein, fraud prevention (M = 12.19, SD = 2.33) implies that the average of fraud prevention within the period under review is about 12% with the variability of about 2%.

Table 3. Ordinary least square (OLS) Regression analysis

Variables	Coefficient estimate	STD error	Test statistic	P-value
Financial performa growth				
Litigation	0.1926	0.234	0.82	0.417
Fraud detection	0.0999	0.175	0.57	0.574
Fraud cases reported	0.6199	0.221	2.81	0.009*
Fraud prevention	1.4533	0.496	2.93	0.007*
Constant	9.8805	9.720	1.02	0.318
Model P-value	0.0000			
R-squared	0.7319			

Where asterisk * represent 1% significant level

Source: Author’s computation using EViews software

Table 3 shows that the overall model (P<0.01) indicate that the OLS regression model is statistically significant and this indicate that there is a significant relationship between Financial performance growth and forensic accounting instruments such as litigation, fraud detection, fraud cases reported, and fraud prevention. R-squared = 0.7319 indicate that about 73% variation in financial performance growth can be explained litigation, fraud detection, fraud cases reported, and fraud prevention. The regression model is significant and R-squared is relatively large which implies that the regression model is an adequate fit for the data and it is very appropriate for future prediction of MTN financial performance growth. Besides, fraud cases reported (β = 0.6199, P<0.01) and fraud prevention (β = 1.4533, P<0.01) indicate that fraud cases reported and fraud prevention are statistically significant and therefore have significant impact on financial performance growth.

Table 4. Unit root test (Augmented Dickey fuller)

Differenced Variables	Test statistic	P-value	Order
Financial performance growt	-7.32	0.0000*	I (1)
Litigation	-7.60	0.0000*	I (1)
Fraud detection	-8.57	0.0000*	I (1)
Fraud cases reported	-4.94	0.0005*	I (1)
Fraud prevention	-4.88	0.0006*	I (1)

Asterisk * represent 1% level of significance
Source: Authors computation using E-views

Table 4 shows the unit root test result using augmented dickey fuller approach and we can see that all the series (financial performance growth and forensic accounting indicators) are statistically significant which implies that they are stationary after the first difference. It also suggested that all the series are integrated of order 1. Since the series are stationary, hence, further time series analysis like cointegration test can be conducted.

Table 5. Johansen cointegration test

Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.698189	92.03700	69.81889	0.0003
At most 1 *	0.611923	57.29633	47.85613	0.0051
At most 2 *	0.417355	29.84634	29.79707	0.0493
At most 3	0.320944	14.18120	15.49471	0.0781
At most 4	0.096930	2.956697	3.841466	0.0855

The table 5 indicates three cointegrating equations are significant at 5% level and their trace statistic values are greater than their corresponding critical values which means that there is existence of cointegration among the series and this suggest a long run relationship between forensic accounting and financial performance growth of MTN in Nigeria.

Figure 1: Graph of MTN financial performance and forensic accounting indicators

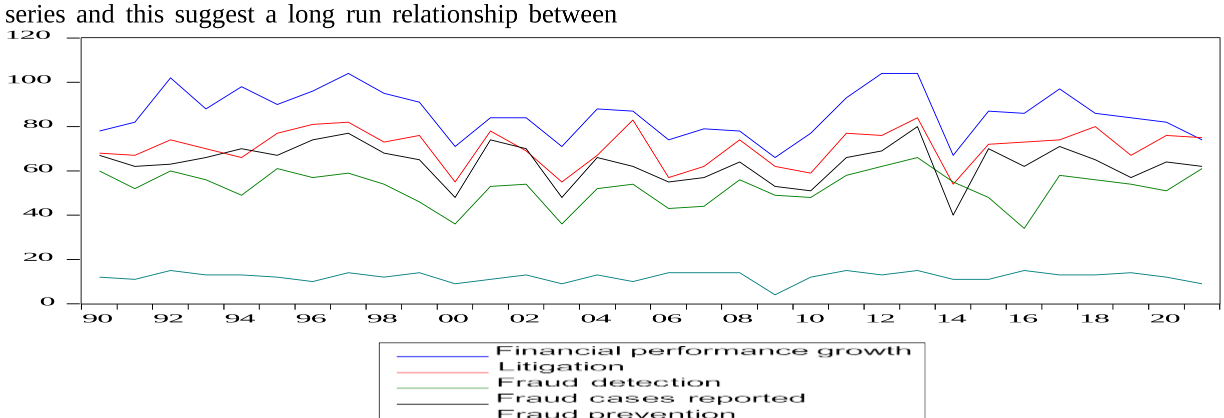

Figure 1 shows the graph of MTN financial performance and forensic accounting indicators (litigation, fraud detection, fraud cases reported and fraud prevention). The financial performance growth is seen to have the highest but fluctuating growth pattern from 1990 to 2021 being the period under review with fraud prevention having the lowest fluctuating growth pattern.

Figure 2: Graph showing the future prediction of Financial performance growth

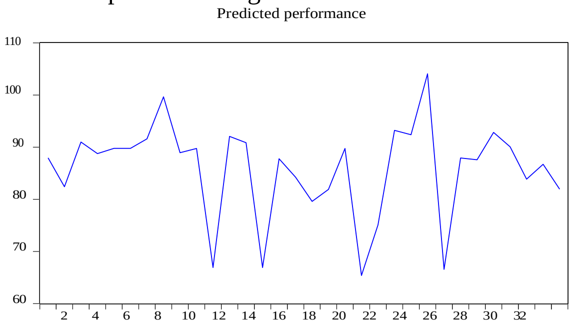

Figure 2 reveals the graph showing the future prediction of Financial performance growth of MTN mobile communication and we can see that the prediction is very close to the actual value with no volatility clustering and this implies that the future financial performance growth of MTN Nigeria is constant with no fear of future collapse in their financial performance growth.

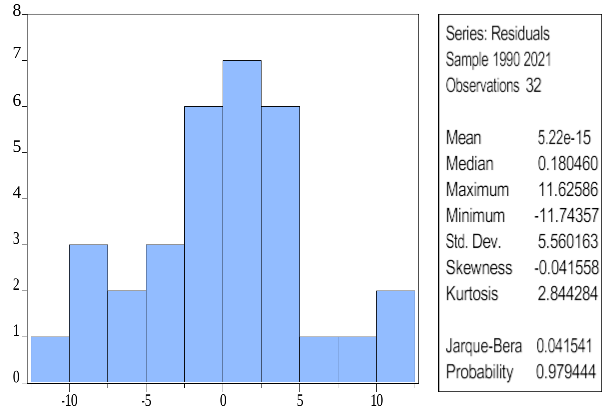

Figure 3 shows the normality test (P>0.01) using Jarque-Bera and we can see that the residual error is approximately normally distributed at 1% level of significant. We can also see that from the statistics that skewness approaches zero while kurtosis is approximately 3 which also indicate that assumption of normality is satisfied.

Diagnostic test

Figure 3: Normality test

Table 6. Multicollinearity

Predictor variables	VIF
Litigation	3.46
Fraud detection	1.61
Fraud cases reported	3.33
Fraud prevention	1.17
Mean VIF	2.39

Source: Author’s computation using EViews software

Table 6 shows that the variance inflation factor (VIF) of all the predictor variables are less than 5 (VIF<5) which indicate that the regression model does not suffer from the problem of multicollinearity.

Table 7. Heteroscedasticity and Autocorrelation

Test	Obs’R-squared	P-value
Heteroscedasticity	4.1489	0.3862
Autocorrelation	0.6495	0.7227

Source: Author’s computation using EViews software

Table 7 shows that P>0.05 for both the heteroscedasticity and autocorrelation test which means that the regression model does not occur the problem of heteroscedasticity and autocorrelation. This also satisfy the ordinary least square assumption for the regression model. This make the model robust and very reliable.

Conclusion and recommendation

Specifically, the primary goal of this research paper is to use forensic accounting instruments to predict the financial performance of MTN mobile communication in Nigeria and the growth of its financial performance. The descriptive statistics reveal that MTN's financial performance increased by approximately 86 per cent, which is consistent with the reality because MTN Nigeria benefited greatly from the covid-19 pandemic situation and has experienced an unusual increase in subscribers, propelling them to the top of the telecommunication market leaderboard which is very consistent with NCC (2021) report. The regression model demonstrates that forensic accounting indicators such as the number of reported fraud cases and the level of fraud prevention have a positive and statistically significant impact on the financial growth of MTN. The implication of this is that timely reporting of fraud cases to a regulatory body such as the EFCC, followed by prompt action to prevent fraud will ensure that MTN continues to achieve consistent financial performance growth which support the works of Chariri (2019) and Brown, Aiken, and Visser (2020). While this is happening, the regression model is significant, indicating that there is a statistically significant relationship between forensic accounting and the financial performance growth of MTN mobile

communication. It is because all of the model assumptions were met that the coefficient of determination (R-squared) is relatively large, making the model very robust and suitable for predicting the financial and economic growth of MTN Nigeria.
However, the Johansen cointegration test was used to conduct the cointegration test, and the results indicate that there is a long-term relationship between forensic accounting and financial-economic growth. The forecasting of future values of financial performance growth reveals that the financial performance growth of MTN will continue to grow at a constant and positive rate in the future, with no danger of a future performance collapse. For this reason, to maintain a consistent financial growth performance, MTN management should establish a policy that will implement proper forensic accounting procedures in order to mitigate fraud that could affect their financial performance growth.

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Forensic Accounting and Fraud Management in Nigeria

Abstract

The study evaluated forensic accounting techniques on fraud management in the public sector MDAs in Nigeria. Arising from the rise in corruption in Nigeria evidenced in the Transparency International latest corruption perception index of Nigeria and the fact that the public sector constitutes a larger part of the economy in Nigeria, the study was undertaken to ascertain the operation-ability of forensic accounting techniques in public sector accounting departments. The study investigated Data mining, accounting ratios and trend analysis tools to detect or to prevent fraudulent activities in MDAs. Survey research design was adopted for the study. The study applying multiple regression analysis technique (OLS) revealed the adoption of forensic accounting tools (data mining, accounting ratios and trend analysis) will significantly enhance ability to detect and or prevent fraud in MDAs. Also revealed knowledge gap in the application of these preventive control techniques and the usefulness of trend analysis as a technique for detecting fraudulent practices in public service operations. It is thus recommended to develop the human capital of MDAs by making professional qualification and knowledge of information technology mandatory requirements for staff working in the accounts department and robust IT facilities in each MDA.

1. Introduction

It is a common perception in Nigeria that government Ministries, Departments and Agencies (MDAs) are among the most vulnerable sectors in fraudulent practices with weak anti-corruption laws and management, (Ewa, Adesola, & Kankpang, 2019). In its 2004 Report to the Nations on Occupational Fraud and Abuse, Association of Certified Fraud Examiners (ACFE) stated that ministries, departments and agencies of government (MDAs) amongst others were the most represented sectors in the occupational fraud cases (1,483) analysed, (ACFE, 2004). According to ACCA and EY (2020) the magnitude of fraudulent and financial crimes is huge globally.

Ewa, Adesola, and Eseneyen (2020) revealed in their recent study 'forensic accounting impact on fraud detection/prevention in the banking sector' in Nigeria a 'significant relationship between application of forensic accounting techniques and fraud detection and prevention'. The study showed ratio analysis, data mining and trend analysis techniques as being considered significant in preventing or detecting fraudulent practices in the banking sector. Ministries, departments and agencies (MDAs) of government or private sector organizations' daily operational activities are evaluated, monitored and measured in monetary terms (financial statement). This covers personnel, production, capital, recurrent and overhead expenditure recognition. The recording of these transactions may be clouded with fraudulent intentions by employees towards satisfying personal ambitions. Financial statements are the window by which a succinct and comprehensive worth or health of entities are appraised. It is the channel for appraising organizations for investment and policy decision matters. The growing trend of personnel manipulating financial statements to hide their pathways so as to protect their infamous activities for personal or management interest (making an otherwise unprofitable proposal look profitable to influence investment decision) is a matter of concern necessitating essential mechanism or controls that will arrest this cancerous behaviour in the system as they will always try to compromise the accounting system. These sinister motives impact negatively in the organizations' survival. These motives are often perpetrated through various methods or schemes, be it in revenue recognition or expense classification or recognition.

As various techniques are being adopted by fraudsters to commit fraud, organizations are also deploying anti-fraud techniques (forensic accounting techniques) in detecting these fraudulent patterns. In Nigeria, the Public Sector comprising MDAs drives economic growth as it plays a leading role in capital formation. Fraud causes reputational damage and so why this damage can affect any organization, virtually all sectors of the Nigerian state are exposed to it because they all depend on public funds to be profitable and solvent. The consequence of these criminal acts has affected Nigeria's corruption perception ranking which has resulted in drop in investment in Nigeria which has an attendant adverse effect on economic growth.

1.1. Research Problem

The recent evolutions on telecommunication facilities, fraudsters are continuously developing new techniques and skills to outwit organizations' internal control systems. Also with the introduction of electronic banking services which is online real time, it is pertinent and essential to put in operation control processes to ensure fraudulent activities are identified and blocked real time. As Wall and Fogarty (2016) stated, fraud mitigation remains crucial and thus implementation of robust internal control applications, auditing effect and regulatory policies are essential. Therefore there arises the need to advance methodologies that will prevent or detect the fraudulent practices. In view of the fact that these fraudulent activities take place in the presence of both Internal and External Auditors unnoticed catechizes the vexed interrogation of the capacity of the auditors and the accounting system application tools the MDAs are operating. Are the facilities sufficient, effective and do the operatives have capacity? Therefore, exposing and addressing these dishonest activities and unlawful financial flows entails setting up relevant and effective control mechanisms that can track and expose these illicit acts. Earlier research on this area considered responses from participants drawn from deposit money banks operating in Nigeria. This study is replicating the previous study that focused on participants drawn from banks but now considered participants recruited from the public sector of the Nigerian economy with a view to validating the earlier result and findings.

1.1.1. Research Objective

Arising from continuous invention of new fraudulent schemes and or tricks to outwit the organizations' internal controls, this study is to evaluate the impact of forensic accounting techniques in preventing/detecting fraudulent practices in MDAs in Nigeria.

Specifically to:

a) Determine the extent data mining technique detect or prevent fraudulent practices in MDAs.
b) Determine the extent of the application of ratio analysis technique (RAS) in preventing or detecting fraudulent schemes in MDAs.
c) Determine the extent the use of trend analysis technique (TRD) can detect or prevent fraudulent practices in MDAs.

1.2. Research Problem

The following questions are postulated to address the research objectives:

i. To what extent does data mining technique detect/prevent fraudulent practices in MDAs.
ii. To what degree does the use of ratio analysis technique (RAS) prevent/detect fraudulent schemes in MDAs.
iii. To what magnitude does the use of trend analysis technique (TRD) detect/prevent fraudulent practices in MDAs.

1.3. Research Hypothesis

The research hypothesis is:

H_{01}: *The utilization of data mining technique in the accounting system of MDAs has no substantial effect in preventing/detecting fraudulent acts.*

H_{02}: The application of ratio analysis (RAS) technique has no significant effect in preventing or detecting fraudulent financial practices in the MDAs in Nigeria.

H_{03}: The adoption of trend (TRD) analysis technique in financial analysis of MDAs has no significant effect in preventing or detecting fraudulent activities in the organizations.

2. Literature Review

2.1. Theoretical Framework

Fraud is defined by different authors in different ways according to their circumstances. While some define fraud as a trick with intent to obtain someone else assets, the Black's Law Dictionary defined fraud as:

> *...all multifarious means which human ingenuity can devise, and which are resorted to by one individual to get an advantage over another by false suggestions or suppression of the truth. It includes all surprise, trick, cunning, or dissembling, and any unfair way by which another is cheated.*

It thus involves deception, confidence and trickery. The study is based on the Fraud Diamond Theory and the Fraud Triangle Theory.

2.1.1. The Fraud Diamond Theory

The Fraud Diamond Theory is an off shoot of the fraud triangle theory. David Wolfe and Dana Hermanson fused 'the element of capability—personal traits and abilities' that play a major role as to if fraud will actually happen or not. The theory which was propounded by Wolfe and Hermanson (2004) considered the four perceptions as triggering elements that must be contemporaneous for fraud to occur. The fraud theory model which was propounded by Cressey highlighted certain elements or features that increase the probability of fraud occurring in any given situation but the theory didn't provide perfect guidance. The fraud diamond theory therefore is an improvement over the fraud triangle theory to address the other precipitating factors not addressed by the fraud triangle model. This is the introduction of a fourth perceived element (capability) that must exist in the system for fraud to occur. Thus, in addition to addressing incentive, opportunity and rationalization, Wolfe and Hermanson added the individual capability or capacity of the fraudster as an essential ingredient that can propel fraud to occur. They reasoned that although there may be opportunity, pressure and rationalization for fraud to occur, without the right capabilities by the fraudster in place the fraud will not occur.

2.1.2. Fraud Triangle Theory

Classic Fraud Theory elucidates the motives behind fraud as a triangle of perceived opportunity, pressure and rationalization. The term 'Fraud Triangle' is credited to Edwin Sutherland who in his book *White Collar Crime* in 1949 is credited to have coined the term 'Fraud Triangle'. He is thus adjudged as the primary contributor to the model. Cressey (1953) in his attempt to render explanation as to what causes, enthuse or motivates people to commit fraud or crime propounded the theory. Arising from extensive talk with convicted swindlers in prisons, he discovered that for every fraud to occur three elements must be present – motivation or pressure, rationalization and opportunity. He observed that deception or crime will take place only when the individual is under pressure or there is a motivating factor on the fraudster. This factor may be great financial need, unrealistic target on an employee from the organization, organizations' rewards systems like performance bonus or penalty for individuals not achieving set targets. Nevertheless even with the pressure to commit fraud, without the presence of the enabling environment – opportunity, the fraud will not occur. Therefore, clear opportunity like weak internal control, absence of proper accountability or lack of supervision for the swindler to gain access or control over the resources to be defrauded must be present. Also weighing the disproportionality between the cost or repercussion of the fraudster being caught and the benefit accruable from the crime, although there may be pressure and opportunity for fraud to occur, the theory postulated that without rationalization which is justification for a given action, fraud will not materialize. Rationalization finalizes the precipitating factors that must be contemporaneous for fraud to occur. This is self-justification for deviant behaviour like justifying the criminality by advancing probable reason(s) why the action(s) is necessary and justifiable as being acceptable or normal.

2.2. Forensic Accounting

Forensic accounting which is the utilization of accounting, auditing and investigative skills to support in litigation, expert determination and investigation of suspected fraudulent practices, irregularities or impropriety disputes involves the use of investigative tools as well as investigative mindset carried out within the environment of rules of evidence in resolving complex financial issues. It incorporates financial expertise, fraud awareness and sound knowledge and understanding of business operations and the functioning of the prevailing legal system in a given organization or entity. Forensic accounting objective is the support for the propagation of the necessary data about governance and ethical policies to interested parties within and outside the organization with a view of maintaining a good image of their respective organizations to its stakeholders and also building up effective communication process and transparency.

2.2.1. *Forensic Investigative Tools*

Forensic accounting techniques or tools assist investigators in discovering and examining unexpected or unusual patterns and relationships in financial system. As fraud is the intentional misappropriation of organization's funds by employees, agents or customers, financial analysis has been a useful investigative technique when the subject matter of the investigation is more likely to be reflected in the records and financial statements of the organization. As the objective of analytic procedure is identification of unexpected relationship that does not make sense, various tools are applied to streamline emphasis of investigation on certain sections of the organizations' accounts that might have been affected by fraudulent plots. These investigative procedures are deployed to detect and or examine connections of financial data that do not appear realistic as well as other abnormal or exceptional one-off transactions or events. Abnormal or unusual transactions patterns may likely indicate errors or illegal acts or fraud. These forensic accounting analysis tools or technique include:

2.2.1.1. *Trend Analysis*

Trend analysis involves matching features (revenue, expenditure, assets and liability heads) of financial statements with a common base item. Trend analysis may be vertical trend analysis or horizontal trend analysis. The process of performing the same analysis on a disaggregated basis by an organization or by geographical basis often gives the forensic accounting investigator a deeper insight into which branch or unit of the organization is driving an unusual relationship or whether one segment of the entity is an outlier. Arising from the criticism of horizontal and vertical trend analysis that is commonly applied by organizations, Enyi (2019) proposed a combination of horizontal and vertical trend analysis which he named relational trend analysis (RTA).

2.2.1.2. *Data Mining*

Data mining concept gained prominence in the 1990s. It is widely applied in organizations to enhance their performances and gain competitive edge over their peers (Hormozi & Giles, 2004). The technique helps in extracting and analysing various data patterns, information or trends from large databases. These are queries or searches performed within accounts or other clients data to identify anomalous individual items. This involves scanning transaction listings, identifying gaps in check runs, identifying duplicate invoice numbers as well as payment vouchers numbers. Also identifying payroll payments made to the same payee within the query period, matching return dates and credit memos to test for proper cut-off. It also covers comparing recent invoice prices with costs on the archived inventory records, filtering of transactions to identify all new suppliers, nonstandard journal entries under dispute and grouping customers' accounts by balance size or employees by overtime pay. The technique applies; decision trees, neural networks and Bayesian belief networks.

2.2.1.3. *Financial Ratios*

Ratio analysis accesses the correlation among different financial statement transaction items and between these items. Ratio analysis also accesses relationship among nonfinancial data. These computed ratios are compared either on a historical basis or on an industry basis or against a defined benchmark. Ratio analysis is only a guide for further inquiry as when unanticipated changes occur, source documents and related accounts are examined in more details.

2.2.1.4. *Reasonableness Testing*

This is a technique of benchmarking the results recorded in the financial statements against an independent expectation. Here the forensic accountant benchmarks the individual transaction items against a defined external benchmark standard and any unusual fluctuations identified when comparing this independent view with the amount recorded in the financial statements is investigated. This tool makes use of regression analysis technique which will yield an explicit prediction based on solid inputs to establish the prediction on which to make comparison.

2.3. *Empirical Review*

Many researchers have dwelt on accessing the position of forensic accounting in business and its impact at detecting and or preventing fraudulent practices both in Nigeria and globally. Ewa et al. (2020) in their study revealed a significant positive relationship exist between forensic accounting techniques application and fraud detection/prevention in the banking sector in Nigeria. Izedonmi and Ibadin (2012) study which investigated forensic accounting and financial Crimes by assessing at some rudimentary and common financial crimes in enterprises operating in Nigeria revealed the motive for financial crimes hinges around elements of pressure, opportunity and rationalization that the fraudsters are exposed to.

Zachariah, Masoyi, Ernest, and Gabriel (2014) study which is on utilization of forensic auditing tool in fraud management suggested the engagement of forensic auditors in Nigeria by redrafting the country's Audit Act to make it mandatory for forensic auditors in each audit team. Njanike, Dube, and Mashayanye (2009) study found the lack of technical capacity, essential working resource materials, management meddling on audit assignments as well as non-recognition of the profession as impediments.

About enhancing capacity, Okafor and Agbiogwo (2016) study opined the need to rejig and improve accountants' skills as it improves their efficiency and effectiveness in service delivery. Enofe, Omagbon, and Ehigiator (2015) study opined that frequent utilization of forensic audit services will considerably assist fraud detection, prevention and reducing dishonest activities.

Okoye and Gbegi (2013) study showed forensic accountants creditably assisted in reviewing the extent and methodology of audit examinations when the risk of management fraud was considered high by means of introducing special audit procedures. The study suggested enhanced training and the use of forensic accountants from the planning stage of an audit of high risk enterprises. Bassey (2018) study revealed vigorous application of litigation support and forensic examination services by forensic accountants by Microfinance banks significantly reduced scams and plated an important part in crime deterrence and corruption.

Modugu and Anyaduba (2013) found substantial compromise among the interested parties on the proficiency of forensic accounting service in monitoring fraudulent practices, enhancing the feature of financial reports as well as upgrading in the quality of internal control systems in the organizations.

Enofe, Agbonkpolor, and Edebiri (2015) study highlighted the urgent necessity for fraud examiners or investigators in the banking sector in Nigeria as the study found forensic accounting as an essential ingredient to checkmate financial misconducts. Ezejiofor, Nwakoby, and Okoye (2016) study on impact of forensic accounting in combating fraud in the banking sector revealed its effectiveness as a tool to contain financial delinquencies and transparency in the banking sector. On their path, Enofe, Okpako, and Atube (2013) study revealed the level of fraud incidences being positively affected by the application of forensic accounting services by studied organizations.

Onodi, Okafor, and Onyali (2015) which applied survey research design method found a significant relationship between the forensic investigative application and corporate fraud deterrence. But Alabdullah, Alfadhl, Yahya, and Rabi (2014) study which also adopted survey research method to gather respondents found significant relationship between audit firms detecting fraudulent activities in auditee financial records and application of forensic accounting techniques in their work programme.

Arising from the frightening percentage of reported financial statements frauds globally, Gupta and Gill (2012) examined data mining framework for fraud prevention and detection and proposed a framework whose features should include the various financial ratios that measure profitability, liquidity, safety and efficiency as well as incorporate behavioural characteristics. In their study of data mining technique for fraud detection and prevention, Sheela and Sandip (2011) opined the technique is a potent device employed by many organizations to improve their operations and competitive advantage. Kirkos, Spathis, and Manolopoulos (2007) study which explored the efficacy of decision tree, neural networks and Bayesian Belief Networks in identifying fraudulent financial statements found reliance between falsification and debt to equity, net profit to total assets, sales to total assets, working capital to total assets ratios and Z score under Bayesian model. Mousa (2016) study found logistic regression model tool as the leading data mining tool adopted by many entities in detecting financial fraud. In their study, Onuorah and Ebimobowei (2012) found a robust influence of forensic accounting applications on the extent of fraudulent activities taking place in the banks examined. Materials and method

3. Research Design

The study implemented a survey research design towards ascertaining the extent forensic accounting techniques application prevent or will detect fraudulent practices in MDAs in Nigeria. Respondents were drawn from among accountants, auditors, Information Technology (IT) specialists and related disciplines working in the MDAs in Nigeria. The population is drawn from among professionals working in the south-south geopolitical zone of Nigeria public service. Purposive sampling was adopted to ensure that only knowledgeable respondents were recruited in the study. The choice of purposive sampling is that the researcher uses his dexterity and prior understanding to choose respondents (Ogunbameru, 2003) based on their specialty. Three hundred and fifty (350) respondents were chosen from the population of the study. A five-point Likert scale (to a very large extent (TAVLE)– 5points, to a large extent (TALE)– 4points, not to a large extent (NTALE)– 3points, not to a very large extent (NTAVLE)– 2points and to no extent at all (TNEAA) – 1point was applied in grading the responses and logically reflected the grade of the ranking. Two hundred and fifty one (251) (72%) questionnaires were returned.

Since this study is a perception based research, primary data were collected from the responses extracted from respondents via the questionnaire which was designed to draw responses from participants. The choice is centred on the theory that the finest method to gather information as to what is happening around is to ask questions (Patton, 1990). The questionnaire is divided into Section A and Section B. Section A comprises the demographic data of respondents while section B comprises belief questions that produced answers on the relationship between use of forensic accounting techniques and fraud prevention and detection in the public sector in Nigeria. The questionnaire was prepared so as to enable respondents select from the five optional plausible responses to each belief question.

3.1. Techniques of Data Analysis

The study tested the application of forensic accounting techniques on fraud prevention and detection in the Public Sector in Nigeria by using multiple regression analysis model and descriptive statistics. The model is considered appropriate as the research focus is on examination of the relationship between forensic accounting techniques and fraud prevention.

3.2. Model Specification

The model specification examining forensic accounting techniques as tools in detecting or preventing fraudulent practices is specified as:

$$FRP = f\,(DM, RA, TRD)$$

It is stated econometrically as:

$$FRP = \beta_0+\beta_1 DM+\beta_2 RA+\beta_3 TRD+\mu$$

Where:

β_0 = Unknown Constant term to be estimated.
FRP = Fraud Prevention and detection.
DM = Data Mining Technique.
RA = Ratio Analysis Technique.
TRD = Trend Analysis Technique.
μ = Stochastic error term.
$\beta_1 - \beta_3$ = Unknown coefficients to be estimated.
$\beta_0, \beta_1, \beta_2, \beta_3 \geq 0$

Table 1A. Presents a summary of analysis of commercial data mining technique result.

S/N	Belief Questions	TAVLE	TALE	NTALE	NTAVLE	TNEAA
1	Your MDA has facility that can query or search accounts entries or clients' data to identify anomalies	14	35	3	171	28
2	Your MDA has scanning facility software that can scan transaction listing	9	31	10	197	3
3	Your MDA has facility that can identify gaps in check runs	4	29	11	195	4
4	Your MDA has facility that can identify duplicate numbers in invoice and payment voucher numbers	11	32	9	2	197
5	Your MDA has facility that can identify duplication in payroll payment within a query period	16	31	9	193	2
6	Your MDA has facility to compare recent invoice prices with archived inventory records data	7	29	13	5	195
7	Your MDA has facility to filter transaction to identify new suppliers, profile of customer by account balance and profile staff by overtime earned	5	30	14	5	195

Source: 2021 Field survey analysis.

Table 1A presents a summary of the analysis of respondents' responses to belief questions as to application of commercial data mining technique in the MDAs, Table 1B summary of analysis of respondents' responses on the application of ratio analysis technique, Table 1C highlights a summary of respondents' responses on the use of Trend analysis technique and Table 1D presents a summary of responses of respondents on the ability of the variables in Tables 1A, B and C in detecting or preventing fraudulent practices in the MDAs.

Table 1B. Presents a summary of analysis of ratio analysis technique result.

S/N	Belief Questions	TAVLE	TALE	NTALE	NTAVLE	TNEAA
1	It is a mandatory requirement in your establishment that when unexpected changes are observed in the accounts during ratio analysis, source documents and related accounts are examined in more details.	13	19	18	3	198
2	Your establishment is mandatorily required to carry out ratio analysis routinely and compare on historical, industry and benchmark basis.	6	16	20	6	202
3	Ratio analysis is mandatorily adopted for monitoring of line, sector and units income and expenditures heads in your establishment.	8	13	21	5	204

Source: 2021 Field survey analysis.

Table 1C. Presents a summary of analysis of trend analysis technique result.

S/N	Belief Questions	TAVLE	TALE	NTALE	NTAVLE	TNEAA
1	It is mandatory for your agency to analyses by departments and location yearly capital vote expense heads with a base year over a 4 year period	11	17	21	3	198
2	It is mandatory for your MDA to carry out analysis of its financial statements line items with a base year over a 4 year period	7	25	15	3	200
3	It is mandatory for your treasury department to analyse revenue heads yearly against budgeted estimates over a 4 year period	9	14	20	6	202

Source: 2021 Field survey analysis.

Table 1D. Presents a summary of analysis of fraud prevention/detection result.

S/N	Belief Questions	TAVLE	TALE	NTALE	NTAVLE	TNEAA
1	How would you rank your organization in the application of data mining technique for preventing and detecting fraud in the system?	6	29	13	198	5
2	There is no possibility of fraudulent practices in your establishment not been discovered?	17	27	9	195	3
3	My establishment is very equipped to track double payments and ghost workers payments	13	23	15	195	5
4	My establishment is very equipped to prevent duplication of payments.	13	27	13	2	194
5	My establishment has controls embedded in the system to detect fraud	5	28	20	195	1
6	My establishment has ability to trace over invoicing in the accounts department	7	34	14	195	1
7	My establishment has in many occasions prevented and or detected fraudulent infractions in the system in the cause of carrying out the analysis	4	22	22	5	197
8	My establishment highly utilizes ratio analysis in preventing and or detecting fraudulent practices in the system	6	17	21	196	11
9	My establishment is able to track abnormalities between periods following ratio analysis	8	17	16	195	14
10	My establishment highly utilizes trend analysis technique in preventing or detecting fraudulent practices in the system	9	15	23	4	200
11	My establishment is able to discover unusual expenditure patterns in its trend analysis of its operations	6	18	22	4	200
12	My establishment is able to track abnormalities in our trend analysis	6	21	21	3	200

Source: 2021 Field survey analysis.

4. Data Presentation

4.1. Data Analysis

In Table 2, while the mean values of the raw data revealed 14.2430, 4.5259, 4.5857 and 24.0797 for DM, RA, TRD techniques and FRP respectively, minimum values of showed 10.0, 3.0, 3.0 and 19.0 for DM, RA, TRD and FRP and maximum values of 33.0, 15.0, 15.0 and 55.0 for DM, RA, TRD and FRP respectively. The standard deviation for each of the variables is 6.53550 for DM, 3.12319 for RA, 3.27347 for TRD and 10.10157 for FRP. The result shows the absence of forensic accounting tools in the administration of financial control of the MDAs.

Pearson product moment formula was adopted in computing the inter-variable correlations. These correlation coefficients are given in Table 3 showed the three independent variables correlated significantly with the dependent variables. The inter-correlations among the independent variables are also significant.

Although this phenomenon is not desirable in a multiple regression analysis, it validates our assertion that they are all elements of one variable called forensic accounting technique. The significance of their correlation with the dependent variable suggests that they may be significant predictors of fraud prevention and detection. The result implies a significant agreement in their variations.

Table 2. Shows the descriptive statistics result on the effect of Data Mining (DM), Ratio Analysis (RA), and Trend Analysis (TRD) Techniques on fraud Prevention/Detection (FRP).

Description	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Gender	250	1.00	2.00	1.196	0.398	0.377	0.307
Qualification	245	1.00	5.00	3.988	1.189	-1.151	0.310
Age range	248	1.00	4.00	2.726	0.972	-0.469	0.308
DM	251	10.00	33.00	14.243	6.536	1.014	0.306
RA	251	3.00	15.00	4.526	3.123	2.182	0.306
TRD	251	3.00	15.00	4.586	3.273	1.634	0.306
FRP	251	19.00	55.00	24.079	10.102	1.763	0.306

Source: Researchers' computation (2022) from SPSS 20.0.

Table 3. Highlights inter correlation among the variables.

Description	Variables	FRP	DM	RA	TRD
Pearson Correlation	FRP	1.000	0.904	0.931	0.934
	DM	0.904	1.000	0.883	0.861
	RA	0.931	0.883	1.000	0.872
	TRD	0.934	0.861	0.872	1.000
Sig. (1-tailed)	FRP	1.000	0.000	0.000	0.000
	DM	0.000	1.000	0.000	0.000
	RA	0.000	0.000	1.000	0.000
	TRD	0.000	0.000	0.000	1.000
N	FRP	251	251	251	251
	DM	251	251	251	251
	RA	251	251	251	251
	TRD	251	251	251	251

Source: Researchers' computation (2022) from SPSS 20.0.

The adjusted R-Square value of 0.935 in Table 4 meant about 93.5percent of the variation in ability to prevent and or detect fraudulent practices in the MDAs is accounted for by DM, RA and TR techniques with a tolerable standard error of 2.57058 while 6.5 percent of the variation is explained by the variables not captured in the model thus outside study variables of DM, RA and TRD. The relative contribution of each of the independent variables to the prediction of fraud prevention and detection measurement is estimated and tested for significance using the t-test as computed in Table 5. Although the t-statistics are not the same for DM (5.112), RA (9.902), TRD (12.135) (independent variables), they all have positive influence on the dependent variable (Fraud prevention and detection) as performance criteria. The Durbin Watson (DW) test of 1.832 is below 2.0 indicating non-autocorrelation detected in the sample.

Table 4. Highlights model summary and analysis of variance (ANOVA).

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
0.967	0.936	0.935	2.571	0.936	1204.532	3.00	247	0.000	1.833
Source of variation	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**				
Regression	23878.256	3.00	7959.419	1204.532	0.000				
Residual	1632.150	247	6.608						
Total	25510.406	250							

Source: Researchers' computation (2022) from SPSS 20.0.

Table 5. Highlights test for significance of regression constant and coefficients.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	8.107	0.431		18.793	0.000		
DM	0.295	0.058	0.191	5.112	0.000	0.186	5.380
RA	1.242	0.125	0.384	9.902	0.000	0.172	5.804
TA	1.341	0.111	0.435	12.135	0.000	0.202	4.953

Source: Researchers' computation (2022) from SPSS 20.0.

Test of hypotheses

Hypothesis 1:

Ho1: The deployment of data mining (DM) technique in the accounting system of MDAs has no significant effect in preventing or detecting fraudulent activities in MDAs in Nigeria.

H_A1: The deployment of data mining (DM) technique in the accounting system of MDAs has significant effect in preventing or detecting fraudulent activities in MDAs in Nigeria.

Decision rule: Accept Ho1 if probability of t-stats is greater than 0.05 percent else reject H_O. From the result data mining (DM) technique has probability of 0.00 which is less than the test significance of 0.05. Therefore, this postulation that the application of DM technique has no significant effect in preventing or detecting fraudulent financial practices in public sector MDAs in Nigeria is hereby rejected. Contrary to the assumption, the result indicates that the application of DM technique has a significant effect in preventing or detecting fraudulent activities in the public sector MDAs. This result conform with (Gupta and Gill (2012); Sheela and Sandip (2011) and Mousa (2016)).

Hypothesis 2:

H_o2: The application of ratio analysis (RA) technique has no significant effect in preventing or detecting fraudulent financial practices in MDAs in Nigeria.

H_A2: The application of ratio analysis (RA) technique has a significant effect in preventing or detecting fraudulent financial practices in MDAs in Nigeria.

Decision rule: Accept Ho2 if probability of t-stats is greater than 0.05 percent else reject H_O2. From our result RA has a probability of 0.00 which is less than the test significance of 0.05. Therefore, this postulation that the application of RA technique has no significant effect in preventing or detecting fraudulent financial practices in MDAs in Nigeria is hereby rejected as the result shows that the application of RA technique has a significant effect in preventing or detecting fraudulent financial practices.

Hypothesis 3:

H_o3: The adoption of trend (TRD) analysis technique in financial analysis of MDAs has no significant effect in preventing or detecting fraudulent activities in the organizations.

H_A3: The adoption of trend (TRD) analysis technique in financial analysis of MDAs has significant effect in preventing or detecting fraudulent activities in the organizations.

Decision rule: Accept Ho3 if probability of t-stats is greater than 0.05 percent else reject H_O. From the model result TRD has a probability of 0.00 which is less than the test significance of 0.05. Therefore, this postulation that the application of TRD technique has no significant effect in preventing or detecting fraudulent financial practices in MDAs in Nigeria is hereby rejected as the result indicates that the application of TRD technique has a significant effect in preventing or detecting fraudulent financial practices.

5. Discussion of Findings

The descriptive statistics in Table 2 shows that the mean responses of 14.2430, 4.5259, 4.5857 and 24.0797 for DM, RA, TRD and FRP series respectively which indicates an average responses to the individual variables belief statements that clustered between strongly agreed (SA) to strongly disagree (SD). This showed the level of awareness of the respondents to the forensic accounting techniques examined as well as their perception of fraud prevention and detection. The mean response evaluating data mining technique is 14.2430 with minimum score of 10.00 and maximum score of 33.00. On evaluating ratio analysis technique, the mean response showed 4.5259 with minimum score of 3.00 and maximum score of 15.00. Similarly, evaluating trend analysis technique, the mean response stood at 4.5857 with minimum score of 3.00 and maximum score of 15.00. The result highlights the reservation of respondents on availability of forensic accounting services in MDAs. This is in agreement with Ewa et al. (2020). In their ability in detecting or preventing fraudulent practices in MDAs, mean response stood at 24.0797 with minimum score of 19.00 and maximum score of 55.00. The result affirms the conviction of respondents of the efficacy of forensic accounting tools in fraud detection and prevention in MDAs.

The standard deviation of each of the variables is 6.53550 for DM, 3.12319 for RA, 3.27347 for TRD and 10.10157 for FRP. The Kurtosis in Table 2 showed values of 1.014 for DM, 2.182 for RA, 1.634 for TRD and 1.634 for FRP respectively. Also, the kurtosis values for the respondents' demography variables stood at 0.377 for gender, -1.151 for qualification and -0.469 for age range. Since if the values for kurtosis are greater than 1, the distribution is outside the range of normality, the result thus implies the three variables are leptokurtic.

Table 3 revealed positive and significant relationships between DM, RA TRD and FRP as is evidenced by their correlation coefficients of 0.904, 0.931 and 0.934 and their probability values of 0.000, 0.000 and 0.000. The result implies the use of forensic accounting tools will drastically prevent and or detect fraudulent schemes and practices in the financial system of MDAs. This confirms various studies on the impact of forensic accounting in fraud prevention and detection (Bassey, 2018; Enofe, Agbonkpolor, et al., 2015; Enofe et al., 2013; Ewa et al., 2020; Ezejiofor et al., 2016; Onodi et al., 2015).

The econometric linear model result as stated in Table 4 which shows the adjusted R square value of 0.935 or 93.5 per cent indicates that the variation in fraud detection and prevention is explained by the three variables DM, RA and TA while 6.4 per cent of the variation may be explained by variables not considered in the study. The result also showed all three variables are significant and positively relate to fraud prevention and or detection. The F-change of 1204.532 attests to the high value of the adjusted R-squared. This thus demonstrates the high predictive power of the model.

The result of the study also showed that a one per cent increase in DM will lead to 0.295 per cent increase in increase in fraudulent financial schemes prevention and or detection with p-value (000). Also a one per cent increase in the use of RA will lead to a 1.242 per cent increase in detecting or preventing fraudulent schemes with p-value (000) while a one per cent increase in TA will also lead to 1.341 per cent increase in detecting or preventing fraudulent schemes in MDAs financial system with p-value (000).

6. Conclusion/Recommendation

The study underscored the importance forensic accounting techniques would play in mitigating fraudulent financial practices in the public sector financial system and complementary contribution of these techniques in curbing fraudulent activities. Also, the study revealed the lack of human capital and dearth of infrastructure for providing forensic accounting services in the public sector It is thus recommended to:

i. Further research on forensic accounting and fraud prevention should exploit other variables such as, relative size factor (RSF), relational trend analysis and Benford's law technique.
ii. Government agencies and departments should be equipped with latest IT infrastructure and software programmes laced with data-mining capabilities.
iii. Public sector MDAs should recruit multi-task professional accountants with good knowledge in information technology as part of the faculty members in both the accounts and audit departments.

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Forensic Accounting and Fraud Detection in Nigerian Public Sector: A Case Study of Rivers State

ABSTRACT

The study which examined the effect of forensic accounting and fraud detection in Nigerian public sector was fueled by rising incidence of fraud now common in the public sector. The study tried to probe if by adopting forensic accounting fraud can be detected. 357 accountants, directors and senior staff of various Ministries, Departments and Agencies (MDAs) participated in this survey and were selected using stratified random sampling method. Data were gotten from the 357 respondents using structured questionnaire and analysed using Spearman rank correlation method. Forensic accounting was studied using forensic accounting competency, forensic accounting techniques and proactive fraud audit, as the two fraud dimensions addressed were payroll and procurement fraud. With the response analysed, it was discovered that all three indicators of forensic accounting are negatively and significantly correlated with payroll and procurement fraud. The take home is fraud can be detected through forensic accounting. This study advises embracing the latest technology-inspired forensic accounting practices and organizing workshops and training for staff to build their competence level.

Keywords: Forensic accounting; fraud detection; public sector; payroll fraud; procurement fraud.

1. INTRODUCTION

In recent time, fraud has become a disease working its way into the bloodstream of private agents and public servants. In the public sector, fraud has become a way of life as agents of government, right from the top being those in the Federal council to governors, assembly members, ward councillors, directors, and low- level government workers are enmeshed in one fraudulent act [1,2]. The occurrence of these financial malpractices, embezzlement and other fraudulent activities have become of concern to developing countries and also those that are developed. The alarming bell which countries are now sounding is not unconnected to Nagasaki that the perpetration of fraud leaves behind. Financial fraud has been responsible for the collapse and meltdown of the global economy, causing reputable organizations to go under. Cases in the literature points to this, from Enron, to Lehman Brothers, to WorldCom. In Nigeria, the devastation which fraud causes is still fresh in her memory from the collapse of Oceanic Bank Plc, to Cadbury Plc [14].

In the public sector, the devasting fraud can cause is better imagined. The idea that money is not free suggest the misuse of it could severely impact on the economy and development of Nigeria. In the public space, public holders are entrusted with huge resources to provide conducive business environment and promote citizen welfare. In Nigeria, there has been tremendous misuse of resources as public office holders engage in fraudulent vices and corrupt activities. These incessant events of fraud can have direct and indirectly impact, from the lack of provision of good road network or basic facilities, to increasing transaction costs, weakening domestic institutions, starving growth-enhancing sectors of resources, causing decline in human capital and increase in brain-drain, among others.

The vast direct and indirect consequences of fraud in the public sector, which most times are negative in nature, has spark the need to address such epidemic, necessitating the application of forensic accounting and its practice. Adebisi, Okike and Yoko [15] has emphasized the expectation of forensic accounting which is to tame the fraud that has engulfed the public sector in Nigeria.

Empirical literature has shown the capacity of forensic accounting to detect fraud and also prevent its occurrence. Inyada, Olopade & John [3] who used data of 128 employees of banks in Nigeria and the multiple regression method report that forensic accounting is an effective tool in stemming the occurrence of fraud in the Nigerian banking industry. Bello, Mohammed & Javan [4] corroborated this submission when they studied 10 banks in Yola State and their regression results were promising as they found forensic accounting significant in detecting bank fraud. Other studies have revealed the potency of forensic accounting in detecting fraud [5,2,6,1]. Strengthened by this, this study seeks to examine the effect of forensic accounting in the detection of fraud in the Nigerian public sector.

1.1 Objectives of the Study

This study has as its aim the examination of the impact of forensic accounting on fraud detection in the Nigerian public sector. This aim is are sub-divided into specific objectives and they are to:

i. examine the impact of forensic accounting competency on payroll fraud in the Nigerian public sector.
ii. investigate the effect of forensic accounting techniques on payroll fraud in the Nigerian public sector.
iii. assess the effect of proactive fraud audit on payroll fraud in the Nigerian public sector.
iv. determine the effect of forensic accounting competency on procurement fraud in the Nigerian public sector.
v. examine the effect of forensic accounting techniques on procurement fraud in the Nigerian public sector.
vi. investigate the effect of proactive fraud audit on procurement fraud in the Nigerian public sector.

1.2 Research Hypotheses

The following hypotheses were formulated for this study:

H_{01}: forensic accounting competency do not significantly reduce payroll fraud in the public sector.
H_{02}: forensic accounting techniques do not significantly reduce payroll fraud in the public sector.
H_{03}: proactive fraud audit does not significantly reduce payroll fraud in the public sector.
H_{04}: forensic accounting competency do not significantly reduce procurement fraud in the public sector.

H_{05}: forensic accounting techniques do not significantly reduce procurement fraud in the public sector.

H_{06}: proactive fraud audit does not significantly reduce procurement fraud in the public sector.

2. LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Fraud Triangle Theory (FTT)

The go-to theory in explaining why fraud is prevalent in organization is the fraud triangle. This theory is relied on in the identification of suspected fraud, what causes the act and identifying the weakness in a system that ensured such act was achievable. This hypothesis is to the credit of Cressy [16] who tried to grasp what pushes or motivates an individual to commit crime or fraud. The theory came from a survey conducted, as Cressy [16] exhaustively interviewed individuals who engaged in fraud and are incarcerated. On completion, his thesis was that; 3 denominating factors characterized every fraud: pressure, opportunity and rationalization. The postulation is that, these factors engendered people to fraud.

Fraud occurs because opportunity exist. An employee commits fraud because he/she find himself/herself in a situation or position where there is access to resources or control of it thereof. Factors creating these opportunities are weak internal controls, management oversight is weak, and when accountability are less prioritized. Second, pressure can propel someone to commit fraud. This pressure goes beyond financial need, encapsulating internal and external pressures such as paying for a particular lifestyle, threats to financial stability of the business, and others. The theory posits that, while opportunity and pressure to engage in fraud might exist, fraud may not be committed without rationalization. Rationalization portends to an individual justifying why they commit such act. For instance, an employ may tie his/her fraudulent acts to being underpaid, arguing that the act was just to augment his/her pay.

2.1.2 Fraud Diamond Theory (FDT)

This theory is considered an extended variant of the fraud triangle theory [19]. The FDT adds capability to the three fraud propelling factors considered in the FTT. The contention of the FDT is that, fraud is unlikely to occur even though there is coexistence between pressure, opportunity, and rationalization. A fourth factor sparks fraud and that is capability. The FTT underpins that, fraud occurs when the intended perpetrator possesses the ability and skills to engage in it. Thus, assuming aways individual's capability in the discuss of fraud will be erroneous. The FDT emphasized the potential overlapping of these factors, with the object lesson being that, an individual's capability should be assessed separately when conducting fraud risk assessment.

2.2 Conceptual Issues

2.2.1 Forensic accounting

Scholars have defined or given different perspective to forensic accounting. To Zysman (2001), forensic accounting is an integration of auditing, accounting and investigation skills. To Joshi [18], it is applying specific skill and specialized knowledge to an economic transaction with the intent of uncovering evidence pertaining to such transaction. Forensic accounting sits on a tripod of areas – dispute resolution, investigation, and supportive litigation [17]. According to Bello, Mohammed & Javan [4], forensic accounting is a tool with capability of been deployed for the detection and implementation of investigations, specifically white-collar. Bello, et al. [4] further noted that, forensic accounting involves examining and evaluating the books of a firm or financial records of an individual. During this process, the intent is to obtain evidence that are court worthy or can be put before a judge. It is also geared to uncovering criminal intent or behaviour or acts like embezzlement or fraud [4]. The conventional financial auditing process of planning, gathering sufficient evidence and report writing is followed in forensic accounting. Forensic accounting only adds the possibility of court appearance to the mix.

2.2.2 Fraud and fraud detection

Abdullahi & Mansor [19] has stressed the high frequency fraud has occurred and the growing demand for forensic accountants by organizations to arrest it. Bello, et al. [4] conceived fraud as any act, omission, or expression tactically undertaken to deceive someone to gain advantage. It involves concealing or misrepresenting material facts of a transaction made knowing the falsity of such claim.

Bello, et al. [4] conceives fraud detection as chains of activities carried out primarily to forestall property or money being acquired through dubious means/false pretense. It is deliberating misstating, omitting, or misrepresenting the records (financial) of an organization, with an object of misleading record (financial) users and giving false impression of the financial standing of the firm [2].

2.2.3 Review of empirical literature

Inyada, Olopade & John [3] noticing the upscale in bank related fraud cases in Nigeria, investigated whether bank fraud occurring in Nigerian banks can be tamed through forensic audit. The study's objective centered on the effect forensic audit has on fraud detection and its prevention. They worked with 128 respondents from a population of 165 and employed primary data. This data was collected using structured questionnaire design in line with 5-point Likert scale. They crafted a model with multiple variables and analysed the relationship using ordinary least square method. The outcome was positive as analysis divulged that conducting forensic audit enhances fraud detection and ensures fraud are prevented.

Bello, Mohammed & Javan [4] sourced data using questionnaire and interview as they probe if a link exists between forensic audit and fraud detection. Their study focused on the banking sector in Nigeria as 10 persons from 10 banks operating in Yola State were sampled for the survey, using simple random method. In their paper, a model was setup as they tried to understand fraud detection through the prism of forensic audit. With OLS method applied, the estimated model revealed promising outcome as forensic audit contributed significantly to the detection of fraud in the 10 banks survey.

Uniamikogbo, Adeusi & Amu [5] tested three hypotheses in their study as assess the possibility of detecting and preventing fraud in 16 deposit money banks (DMBs) in Nigeria through forensic audit. The hypotheses which they test were if engaging in forensic audit affect the number of fraud cases experienced at the DMBs; the amount lost to such fraud and the number of staff that are involved in such fraud. This investigation was for a period of 5 years, from 2012 to 2016. Deploying the OLS method to estimating the regression model crafted, the outcome from estimation disclosed satisfactory results. As found from the empirical result, the number of staff that engage in bank fraud, cases of bank fraud and the amount lost to fraudulent activities in the banks declined with the practice of forensic audit.

Oyerogba [7] study focus on the Nigerian public sector as it addressed the issue of fraud detection through the use of forensic auditing mechanism. The study drew respondents from the judiciary, federal, state, and private universities and forensic auditors, as 298 respondents participated in the survey. The data which the author used was collected using questionnaire and then subjected to descriptive and inferential statistical analysis. The linear logistic and OLS method was used for the latter, and mean and standard deviation for the former. In terms of finding, fraud detection in the public sector is predicted by forensic skills and techniques. Hence, to reduce the spate of fraudulent practices in the sector, it was advised that government rejig their internal control, scaling it up to forestall incidence of fraud.

Okoye, Adeniyi & James [1] used descriptive and inferential tools such as mean, standard deviation and regression method to investigate the effectiveness of forensic accounting in fraud management. In conducting this research, four manufacturing firms in Nigeria were focused on and one hundred and ninety (190) of the staff of these firms participated in the survey. The firms were Dupril Forma, Cadbury, Breweries, and Nigeria Bottling company, domicile in Aba, in Abia State. The outcome matched expectation as their work disclosed that more fraud will be detected and prevented as forensic accounting is undertaken in the companies studied. Their analysis also informed that engaging in fraud litigation really had little effect on the recovery of the funds lost to the perpetrated act.

Okoye & Ndah [2] examine how effective forensic accounting can be to preventing fraud in 10 manufacturing companies that undertake their activities in Port Harcourt, Nigeria. Fifty (50) staff of the 10 companies were involved in the survey and questionnaire were randomly distributed to them. The data collected were then analysed using OLS method. Like some studied that address this germane issue, their result showed fraud in the companies studied can be prevented using fraud litigation practices. Also, discovery made revealed that fraud in the companies can be prevented through fraud investigation.

Eko, Adebisi & Moses [6] in their work x-rayed the issue of fraud prevention and detection, focusing on the use of forensic accounting techniques to achieving it. The bank considered for the study numbered 15 and were those operating in Cross Rivers State. With purposeful sampling, 150 employees comprising of IT specialists, auditors, economists and accountant were selected from a population of 170. The 150 respondents that participated were responded to questions posed to them using questionnaire, designed to reflect the 5-point scale. While relationship was modeled in a multiple framework, they found when the OLS method was applied that banks can forestall fraud and detect it by applying the forensic accounting techniques of commercial data mining software, trend analysis, and ratio analysis.

In Imo State, Eze & Okoye [8] revisited the issue of fraud in the public sector, investigating the potency of adopting forensic accounting to detect and prevent fraud in that sector. With a sample of sixty (60) employee which constitute accountants, top executives and auditors, the data retrieved from the questionnaire administered to them were collected and analysed using mean and Z-test. According to them, detecting and preventing fraud in Imo State private sector is achievable through forensic accounting, advising that management become committed to forensic accounting.

Oyebisi, Wisdom, Olusogo & Ifeoluwa [9] examined the issue of fraud in the banking sector, with specific focus on four (4) DMBs in Nigeria. For each bank, 25 questionnaires were issued, culminating to 100 respondents, comprising management members, accountants, and auditors, selecting using stratified sampling method. The work set out to probe how fraud investigation, litigation support, and expert consultancy prevents and detects fraud. With the questionnaire validated and response found to be reliable, the data was subjected to analysis, using the analysis of variance (ANOVA) and regression methods. Empirically, it was disclosed that the application of forensic accounting significantly prevent fraud and fraud can be detected by engaging in forensic accounting.

Lawal, Yinusa, Lawal, Oyetunji & Adekoya [10] engaged four hundred and forty-nine (449) employees of P.Z. Nigeria ltd as they investigated the detection of fraud using forensic accounting. The effect of forensic investigation, litigation and accounting in the detection of fraud was x-rayed. With the data instrument certified valid and reliable, the data collected using questionnaire was analysed using regression method. From analysis, increasing forensic investigation, litigation and accounting by management of PZ ltd will increase fraud detection.

Alhassan [11] in his work based the result of his finding on the opinions of 50 respondents, which comprise of accountants and auditors, drawn from 10 ministries in FCT, Abuja, Nigeria. The survey geared towards examining the use of foreign accounting service in detecting and preventing fraud in the ministries. Those who were involved in the study were randomly selected, with ten experts each from the 10 ministries. In gathering data, questionnaire was favoured and analysis of variance (ANOVA) used to analysed the data obtained. The major discovery is that, forensic accounting is effective in the detection of fraud in the public sector and significant correlation was uncovered between forensic accounting and litigation service.

Owolabi & Ogunsola [12] studied the possibility of minimizing bank fraud through forensic auditing. The study which took place in Ibadan, Nigeria involved six DMBs and employees of these banks participated in the survey. In obtaining opinions of employees of these banks, questionnaire that reflect the 5 points scale were administered to 132 staff, with 120 returned. In turn, they combined the Pearson moment correlation and regression methods to analyse the obtained data. Evidently, they were able to show that forensic accounting skills, knowledge of forensic accounting and procedures, and legal background are significant measures that can help reduce incidence of fraud in DMBs studied.

Edheku & Akpoveta [13] in their work sampled 43 accounting officers to explore how instrumental forensic accounting can be in detecting fraud in the private and public sectors. In investigating this, they conducted the survey in Abuja, using four federal ministries and five private multinationals. With the questionnaire used to collect data validated and found reliable, the data gathered were analysed with mean, standard deviation and t-test, and they report that fraud in the two sectors can be detected by engaging in forensic accounting.

2.2.4 Gap in literature

This study investigated the effect of forensic accounting on fraud detection in the Nigerian public sector. The study considered public sector workers in Rivers State Nigeria. The study employed accounting competency, accounting techniques, proactive fraud audit and forensic accounting as measures of forensic accounting
while payroll fraud and procurement fraud were captured as measures of fraud detection, these variables make the work different from what other scholars have done and also the geographical scope considered for the study.

3. METHODOLOGY

3.1 Research Design

Ogunbayo & Mhlanga (2022) defined research design as a roadmap that describes or details how research is intended to be undertaken. Given the peculiarity of this study, the descriptive survey design was used.

3.2 Population

The population of the study are accountants, directors and senior staff of various Ministries, Departments and Agencies (MDAs) in Rivers State. This make up a population of 3974. The Ministries comprise of 1324, Departments 1673
while Agencies 977.

3.3 Sample and Sampling Technique

The random sampling method was used for this study and 363 staff were sampled for the study. The sample was arrived using the Yamene formula below:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = size of the sample
N = size of the population
e = degree of significance or sampling error.

Using the Taro Yamene formula, the sample size is given below:

$$n = \frac{3974}{1 + 3974(0.05)^2}$$

$$n = \frac{3974}{1 + 3974(0.0025)}$$

$$n = \frac{3974}{1 + 9.935}$$

$$n = \frac{3974}{10.935}$$

$$n = 363$$

3.4 Instrument of Data Collection

Primary data was used and collected through the use of questionnaire. The questionnaire adopted were closed-ended and multiple-choice format. We divided the questionnaire into two (2) sections, and each section addresses a given interest. Section One (1) consist of set of items relating to the personal data of the respondents. Section two (2) consist of set of items on the dimensions used; forensic accounting competency, forensic accounting techniques and proactive fraud audit (for forensic accounting) and payroll fraud and procurement fraud (for fraud detection).

3.5 Validity and Reliability of Instrument

The study engaged in content validity of the instrument as the questionnaire used were assessed independent by lecturers in the Department of Management, University of Port Harcourt and their opinions, comments help shaped the questionnaire. The reliability of the instrument was determined using the test- retest method. We administered the questionnaire to 20 respondents separate from those that participated in the study. We then reissued the questionnaire to them after two weeks and correlated their responses using the Pearson Product Moment correlation method to obtain the Cronbach' alpha.

3.6 Method of Data Analysis

Two different set of analyses were adopted. These are descriptive and inferential analyses. The descriptive tools were percentages and frequency. The inferential analysis include the use of Spearman rank correlation method and we employed it to test the hypotheses formulated.

4. RESULTS AND DISCUSSION

4.1 Response Analysis

Table 1 details the distribution of the questionnaire to the respondents involved in the study. 363 copies of questionnaire were distributed to employees in the public sector and
357 were returned and deemed usable for the study as relevant information were provided. 6 of the questionnaires disbursed were not returned or had missing information. The 357 returned questionnaire gives a response rate of 98.3%, which is appropriate and formed the basis for this study.

Table 2 shows higher male participation in the survey. 217 males (60.8%) were respondents for this study; female participants were 140 or 39.2% of those sampled. The age distribution of the respondents plays critical role in determining the average age distribution of the respondents. Table 2 report more of the employees are in the age bracket of 36 – 40 years (142 or 39.8%); followed by those aged between 31 – 45 years (103 or 28.9%). The next age group are those that are 41 years and above (which are 65 respondents or make up 18.2%). Analysing the data, we observed that 9.2% or 33 respondents are 26 – 30 years old, with the least age distribution being 18 – 25 years (14 respondents or 3.9%). Evidently, the pool of employees is young and vibrant and this group of persons are deemed to have technical knowledge. Next, we considered the marital status of the participants and discovered majority are married. Essentially, 201 or 56.3% of the total employees that partook in the survey are married. Next in line are those that are single and this make up 39.5% or 141 respondents. 15 of the employees divulged that they are divorced. The education level of the participants was also considered as forensic auditing skills are acquired within the educational setting and does affect efficiency and proficiency. Empirical data hints of an educated personnel as a combined number of 308 have atleast tertiary education. Disaggregating this reveals 186 or 52.1% have acquired B.Sc degree, another 100 have earned Master’s degree and 22 have their doctorate degree. 49 respondents have SSCE/OND degrees and this pool of employees may assume the role of audit assistant. A further

Table 1. Analysis of questionnaire distributed response rate

Valid	Frequency	Percent	Cumulative Percent
Returned	357	98.3	98.3
Not Returned	6	1.7	100.0
Total	**363**	**100.0**	**100.0**

Source: Researcher Computation, 2023

Table 2. Demographic descriptive analysis

Details	Classifications	Frequency	Percent
Gender	Male	217	60.8
	Female	140	39.2
Age	18-25 years	14	3.9
	26-30 years	33	9.2
	31-35 years	103	28.9
	36-40 years	142	39.8
	41 years and above	65	18.2
Marital Status	Single	141	39.5
	Married	201	56.3
	Divorced	15	4.2
Education	SSCE/OND	49	13.7
	BSC	186	52.1
	M.Sc/MBA/MA	100	28.0
	PhD	22	6.2
Professional Qualification	ACCA	91	25.5
	ICAN	191	53.5
	ANAN	52	14.6
	Others	23	6.4

Source: Field Survey (2023)

dive was taken into the professional qualification of the employees to understand if they are professionals and have in-depth knowledge or grasp of forensic accounting. We observed that majority or 53.5% or 191 respondents have ICAN, 91 or 25.5% have ACCA training and 52 or 14.6% are ANAN certified.

4.2 Bivariate Analysis

The formulated six null hypotheses are tested in this section using Correlation analysis, specifically the Spearman rank variant.

Hypothesis One:

Forensic Accounting Competency do no significantly reduce payroll fraud.

Table 3 report negative correlation exist between forensic accounting competency and payroll fraud. This positive relationship is strong as indicated by the rho coefficient of -0.862. The indication is that, payroll fraud is expected to decrease with forensic accounting competency. This decline in payroll fraud as the competency of accountants in forensic accounting improved is significant at 5% level. Evidently, the null hypothesis of forensic accounting competency insignificant reducing payroll fraud is rejected. By this, the alternative hypothesis is accepted and forensic accounting competency do significantly reduce payroll fraud.

Hypothesis Two:

Forensic Accounting Techniques do no significantly reduce payroll fraud.

From analysing responses provided, forensic accounting techniques is correlated with payroll fraud, but negatively. From this result, greater application of forensic accounting technique causes lesser payroll fraud in the public sector. The rho coefficient of -0.790 indicate that forensic accounting technique affect payroll fraud negatively and the p-value of 0.025 evident that the reduction in payroll fraud as forensic accounting technique is applied is significant. The null hypothesis is then rejected and it is concluded that forensic accounting technique significantly reduce payroll fraud.

Table 3. Relationship between forensic accounting competency and payroll fraud

Correlations				
			Forensic Accounting Competency	**Payroll Fraud**
Spearman's rho	Forensic Accounting Competency	Correlation Coefficient	1.000	-.862**
		Sig. (2-tailed)	.	.003
		N	357	357
	Payroll Fraud	Correlation Coefficient	-.862**	1.000
		Sig. (2-tailed)	.003	.
		N	357	357

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS V24 Output

Table 4. Relationship between forensic accounting techniques and payroll fraud

Correlations				
			Forensic Accounting Techniques	**Payroll Fraud**
Spearman's rho	Forensic Accounting Techniques	Correlation Coefficient	1.000	-.790**
		Sig. (2-tailed)	.	.025
		N	357	357
	Payroll Fraud	Correlation Coefficient	-.790**	1.000
		Sig. (2-tailed)	.025	.
		N	357	357

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS V24 Output

Hypothesis Three:

Proactive Fraud Audit do no significantly reduce payroll fraud.

The rho coefficient of -0.815 and p-value of 0.000 informed on negative correlation that exist between proactive fraud audit and payroll fraud. This finding indicates that, increased proactive fraud audit conducted in Ministries, Departments and Agencies (MDAs) in Rivers State will lead to lesser payroll fraud. The reduction in payroll fraud as MDAs adopt proactive fraud auditing is significant (as p=0.000). The null hypothesis is rejected, with the result indicating that proactive fraud audit does significantly affect payroll fraud, reducing it.

Hypothesis Four:

Forensic Accounting Competency do no significantly reduce procurement fraud.

The correlation result of Table 6 highlight strong negative correlation existing between forensic accounting competency and procurement fraud. This is reflected by the rho coefficient of -0.855. The coefficient portend that the adoption of forensic accounting competency is expected to lead to decrease in procurement fraud in the MDAs in Rivers State. Further suggested by the p-value of 0.001 is that, the negative correlation is significant. This suggest rejecting the null hypothesis and accepting the alternative, with forensic accounting competency significantly reducing procurement fraud.

Hypothesis Five:

Forensic Accounting Techniques do no significantly reduce procurement fraud.

The problem of procurement fraud has been a plague in the public sector and this study test its reduction through the prism of forensic accounting technique. The result so summarized in Table 7 attest to the reduction of procurement fraud when MDAs in Rivers State adopt forensic accounting techniques. The rho coefficient of - 0.903 informs on this and the p-value of 0.005 implies the negative correlation is significant. Procurement fraud that has now been ingrained in the public space can be significantly reduced through adoption of forensic accounting techniques.

Hypothesis Six:

Proactive Fraud Audit do no significantly reduce procurement fraud.

Table 5. Relationship between proactive fraud audit and payroll fraud

Correlations				
			Proactive Fraud Audit	**Payroll Fraud**
Spearman's rho	Proactive Fraud Audit	Correlation Coefficient	1.000	-.815**
		Sig. (2-tailed)	.	.000
		N	357	357
	Payroll Fraud	Correlation Coefficient	-.815**	1.000
		Sig. (2-tailed)	.000	.
		N	357	357

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS V24 Output

Table 6. Relationship between Forensic Accounting Competency and Procurement Fraud

Correlations				
			Forensic Accounting Competency	**Procurement Fraud**
Spearman's rho	Forensic Accounting Competency	Correlation Coefficient	1.000	-.855**
		Sig. (2-tailed)	.	.001
		N	357	357
	Procurement Fraud	Correlation Coefficient	-.855**	1.000
		Sig. (2-tailed)	.001	.
		N	357	357

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS V24 Output

Table 7. Relationship between forensic accounting techniques and procurement fraud

Correlations				
			Forensic Accounting Techniques	**Procurement Fraud**
Spearman's rho	Forensic Accounting Techniques	Correlation Coefficient	1.000	-.903**
		Sig. (2-tailed)	.	.005
		N	357	357
	Procurement Fraud	Correlation Coefficient	-.903**	1.000
		Sig. (2-tailed)	.005	.
		N	357	357
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: SPSS V24 Output

Table 8. Relationship between proactive fraud audit and procurement fraud

Correlations				
			Proactive Fraud Audit	**Procurement Fraud**
Spearman's rho	Proactive Fraud Audit	Correlation Coefficient	1.000	-.730**
		Sig. (2-tailed)	.	.013
		N	357	357
	Procurement Fraud	Correlation Coefficient	-.730**	1.000
		Sig. (2-tailed)	.013	.
		N	357	357
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: SPSS V24 Output

The estimated rho coefficient of -0.730 speaks to negative correlation found existing between proactive fraud audit and procurement fraud. This strong relationship implies that, procurement fraud is expected to reduce following the adoption of proactive auditing. MDAs can curb or fight procurement fraud by engaging in proactive auditing, this result suggest. The p-value of 0.013 is indicative of significant correlation among the variables. Following this, the stated null hypothesis is rejected as the conclusion is that, proactive auditing significantly mitigates procurement fraud.

4.3 Discussion

From analysis, it was found that forensic accounting and fraud detection is negative and significantly correlated, indicating that forensic accounting predicts fraud detection. The finding of this study implies that, to detect fraud in MDAs, it is imperative that forensic accounting needs to be adopted and practiced, in order to eschew corruption that is now an appendage of the public sector. The finding of this study corroborates the empirical results of Inyada, Olopade & John [3] and Bello, Mohammed & Javan [4].

The study observed the practice of forensic accounting (particularly forensic accounting competency, forensic accounting techniques and proactive fraud audit) significantly reduces payroll frauds in MDAs. The correlation result gives strength to this, as the results revealed negative correlation between indicators of forensic accounting and payroll fraud. The implication of these findings is that, to reduce payroll frauds in MDAs, personnel, directors and ministers in the MDAs must commit to adopting forensic accounting and ensuring forensic accounting are practiced to the letter in line with global best practices. The result of this study agrees with the work of Oyerogba [7] who found that forensic accounting significantly reduce the occurrence of fraud.

Likewise, the correlation analysis carried out suggest that forensic accounting does affect procurement frauds in MDAs. Specifically, the study found that all dimensions of forensic accounting are instrumental in creating a public sector environment where there is reduced procurement fraud, with the practice of forensic accounting pivotal in sanitizing the Nigerian public sector and reducing the cesspool of fraud that is now interchanged with the public sector. This will help increase efficiency in the public sector and drive the needed growth that Nigeria so desires. This result of significant impact of forensic accounting on fraud detection is similar to the findings of Uniamikogbo, Adeusi & Amu [5] Okoye, Adeniyi & James [1] and Okoye & Ndah [2].

5. CONCLUSION AND RECOMMENDATIONS

The study was motivated by the high incidence of fraud present in the public sector. With the desire to arrest the situation and breath sanity and efficiency into the public sector, this study was championed to investigate the role of forensic accounting in taming fraudulent activities perpetrated in the public sector. Two dimensions of fraud was assessed – payroll and procurement fraud and three hundred and fifty-seven (357). Analysis of the opinion which these categories of personnels expressed produced inspiring results. The twin issue of payroll and procurement fraud can be curb through forensic accounting competency, adopting forensic accounting techniques and undertaking proactive auditing. Conclusively, fraud can be detected through forensic accounting. To detection fraud in MDAs in Rivers State, this study advises embracing the latest technology-inspired forensic accounting practices and organizing workshops and training for staff to build their competence level.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Fraud Prevention Strategies: An Integrative Approach on the Role of Forensic Accounting

ABSTRACT

This study examined the role that forensic accounting play in aiding the success of fraud prevention strategies in combating frauds at both corporate and national levels. The study adopted the exploratory research design methodology involving extensive review of published articles, periodicals and other materials relevant to the subject matter. The study found that while the use and deployment of forensic accounting tools and techniques have made appreciable progress in the developed world, its appreciation and usage in emerging economies is still at the embryonic stage due to lack of political will, poor ethical tone set by management and dearth of skilled forensic accounting professionals. It therefore recommended that to ensure sustainable success of fraud prevention strategies, management of both public sector and corporate entities should demonstrate the needed political will and set the right ethical tone at the top through their actions and activities. Similarly, efforts should be made to continually upskill anti-fraud staffs (internal audit, forensic accountants, forensic investigators) through trainings and awareness programs on the latest fraud prevention methodologies. Also, that in view of the rising cases of cybercrimes, nation states should urgently consider the signing and implementation of legal treaties and frameworks to combat the scourge.

Keywords: Frauds, Fraud Dimensions, Fraud Prevention Strategies, Forensic Accounting Techniques, Capability

INTRODUCTION

Fraud incidences either at corporate or national levels have assumed global concern because of their devastating impacts leading to massive erosion of shareholder value, bankruptcy of corporate businesses, diminution of investor confidence, increased poverty and general societal discontent. Corporate level frauds such as Enron, Barings Bank, Satyam, Xerox, WorldCom, Parmalat and other similar accounting scandals have significantly dampened the level of trust and reliance placed on financial information provided (Mangala and Kunari, 2015; Ozili,2020; Okoro and Onyebueke, 2021). Similarly, national level frauds and financial misappropriations have also worsened the various human development indices of nation states thus creating room for impoverished population with all its attendant challenges together with but not restricted to the ability to provide basic amenities to citizens (Barzinji, Yusoff, Rosbi,

Salleh and Abdullah, 2022). As a result of the debilitating effects of these challenges, it has become more expedient to consider strategies and methodologies to prevent their occurrence in the first place. This is because fraud prevention is less expensive, less time consuming and more effective than attempting to detect fraud after the act especially in view of monetary savings that will result (Abdullahi and Mansor, 2015).

Fraud prevention is a forward thinking rather than a reactive process. It is the sum total of measures taken to anticipate and forestall the occurrence of frauds. When properly done, it is capable of preserving organizational reputation, enhancing enforcement of laws and deterring crime and criminals and consequently maintenance of criminal justice (Oladipo and Olurotimi, 2021). According to Ogwiji and Lasisi (2022), fraud prevention as a practice would only yield positive results if the organization enthrones an ethical culture which is supported by a sound internal control system. Among other options, a number of scholars have suggested that one of the principal tools to achieve fraud prevention on a sustainable basis is the application and deployment of forensic accounting techniques (Kumari and Mangala, 2015; Dada, Owolabi and Okwu, 2015; Ehioghiren & Atu, 2016; Sule and Sani, 2019; Okoye and Ndah, 2019; Obafemi, 2021). According to the PWC's Global Fraud Report of 2022, over half (52%) of all surveyed corporate entities having revenues in excess of $10bn documented having experienced one form of fraud or the other within the last twenty-four (24) months. In particular, the report identified cybercrimes as the primary form of fraud now confronting corporate firms thus further underscoring the need for the usage of forensics and forensic accounting techniques to address same.

Forensic accounting is a subset in the world of forensics. It has been described as "the use of the laws of nature to the laws of man to solve the problems of man" (Alhassan, 2021). It is that part of accounting that is closely associated with legal work in the sense that its output can aid resolution of criminal or civil matters. To achieve this, a mix of accounting, auditing and investigative skills are usually deployed (Obafemi, 2021). Several studies have reviewed the subjects of fraud prevention and forensic accounting from various perspectives. A close review showed that majority of the works have tended to either concentrate on the public sector only or particular nation states with little studies combining the perspectives from various countries simultaneously which this study seeks to do (Gbegi and Adebisi, 2014; Akkeren and Tarr, 2014; Sireger and Tenoyo, 2015; Claire and Jude, 2016; Hakami and Rhamat, 2018; Abdulrahman, 2019; Saifullah and Abbas, 2020; Ngosa and Mwanza, 2021; Malle, Mwonge and Naho, 2022).

Consequently, in contributing to extending the frontiers of knowledge, this study assessed the role that forensic accounting plays in ensuring the success of fraud prevention strategies for both corporate organizations and governmental institutions and from various national perspectives. The rest of the study was put together in this manner: In section 2, a review of extant literature was presented, methodology in section 3, while in sections 4 and 5, the study considered the discussion of findings, conclusion and recommendation of the work.

LITERATURE REVIEW

Frauds and Fraud Dimensions

Fraud is any decisive or intentional act carried out to secure unlawful benefit at the expense of another person(s). Persons in this case referring to both natural persons and artificial persons (corporate or governmental entities). According to the Chartered Institute of Management

Accountants (CIMA), fraud "includes activities such as theft, corruption, conspiracy, embezzlement, money laundering, bribery and extortion and that it involves using deception to dishonestly make a personal gain for oneself and/or create a loss for another." On the other hand, The Association of Chartered Fraud Examiners (ACFE) defines it as the "the use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the organization's resources or assets." A common theme in these definitions therefore is the intentionality of the act by the perpetrators.

Chen,Babaei and Maul (2020) opine that understanding the motivation behind perpetration of frauds is key to be able to detecting or preventing them in the first place. Golden, Skalak and Clayton (2006) further argued that for fraud to successfully occur, four ingredients are crucial viz: existence of a material false representation; certainty of knowledge by the perpetrator of the false representation; reliance by the victim on the material false representation so made and the suffering of financial loss or quantifiable damage as a direct result. Various scholars have viewed frauds from various dimensions and typologies, however for the purpose of this study, frauds shall be categorized into five (5) broad groups as depicted in the following chart:

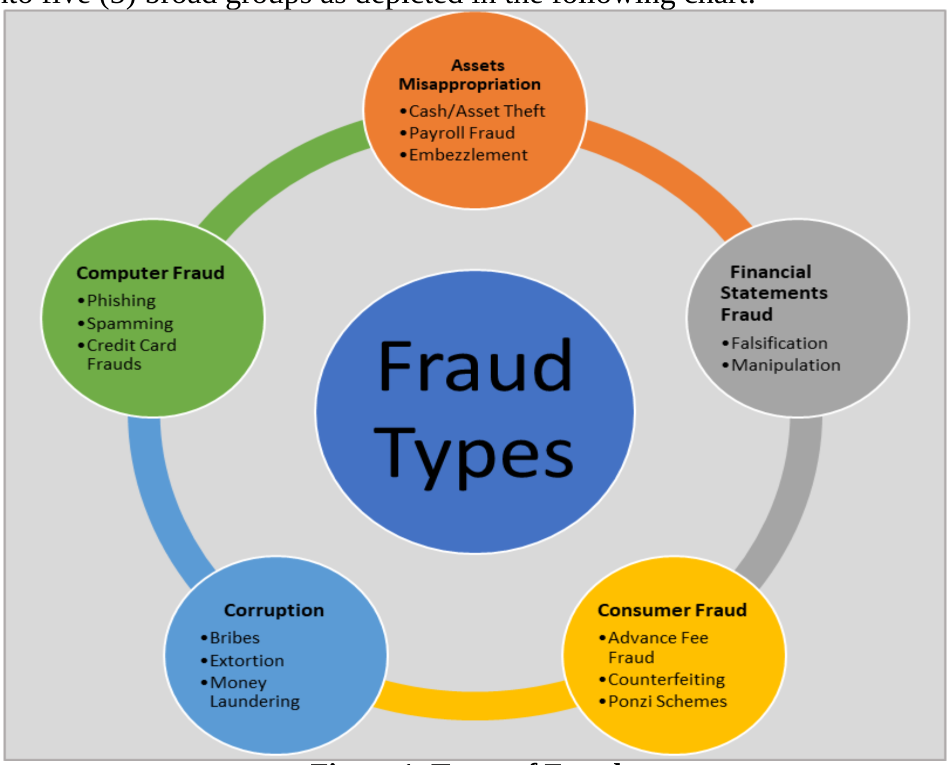

Figure 1: Types of Frauds

Source: Adapted from Golden et al, (2006); CIMA (2008); NSKT Global (2022)

The Association of Certified Fraud Examiners (ACFE) recently released its 2022 Global report on occupational frauds based upon the survey it carried out covering 133 countries with very useful insights provided. First, the report showed that nearly half (49%) of all reported fraud cases emanated from four functions within an organization namely operations, accounting, sales and top management personnel in that order. Secondly, according to the report, apart from the United States and Canada (36%), Sub-Saharan Africa is the region of the world with the highest number of reported fraud cases accounting for nearly a quarter of global cases (23%). Additionally, in terms of global costs, about $4.7 trillion (representing 5% of global corporate revenues) is lost to frauds annually with assets misappropriation and financial statements frauds accounting for about 95% of these cases in terms of volumes and values. This further underscore the need to have necessary machineries put in place to deter rather than merely detecting frauds.

Fraud Prevention Methodologies and Strategies

Fraud prevention is not a one size fits all mechanism or scheme. Rather, it involves a potpourri of measures, methodologies and strategies geared towards anticipating and reducing both opportunities and likelihood of fraud occurring. Nyakarimi et, al (2020) stated that these measures must be such that individuals in the organization ultimately find no justification to engage in frauds both now or in the future. Itemized below are key methodologies and strategies for fraud prevention:

i. **Creating and Living an Anti-Fraud Corporate Culture:** This is arguably the first and the most important fraud prevention strategy. If leadership demands and displays integrity and transparency, it typically permeates through an institution. Business owners, management and public sector leaders must therefore set the right ethical tone by instituting a zero-tolerance policy towards fraud which is communicated by their own words and actions (Gbegi and Adebisi, 2013; Golden et al, 2009; Okoro and Onyebueke, 2021; ACFE, 2022). Such zero tolerance policies must be well stated and continuously reinforced throughout the organization such that adherence to them become the norm rather than the exception. This is also reflected in the attitudes and decision of the organization on matters relating to corporate governance, legislations, honesty and openness and internal audit (Mangula and Kumari, 2015; Singal et al, 2019).

ii. **Streamlining Employee On-Boarding Process:** Given that frauds are perpetrated by individuals, it therefore becomes crucial to ensure that relevant background checks are conducted even before such individuals are on-boarded into the organization. Checks such as criminal records (if any), reference checks, past employment verifications and similar others if properly done may reveal behavioral traits that indicate likely propensity to fraud which can then be prevented by refusing such hires (Bangura, 2020; Ozili, 2020; Alhassan, 2021; Binns and Kempf, 2021). This is in line with the KYC/KYE (Know your customer/employee) principle which suggests taking necessary measures to verify identity and confirm suitability of such personnel to the organization's ideals. The same process should be repeated when considering elevations into senior, sensitive roles within an organization.

iii. **Continuous Anti-Fraud Training and Awareness Campaigns:** Organizations must develop and carry out regular anti-fraud trainings and awareness within the organization to ensure employees are aware of what constitutes frauds and their associated consequences both at individual and organizational levels (Bartsiotas and Achamkulangare, 2016; Hakami and Rahmat, 2018). Such trainings if properly structured and regularly carried out, are more probable to decline rather than cause an upsurge in the number of fraudulent occurrences (CIMA, 2008). This is especially so, as employees are vital assets in the fight against the scourge of frauds.

iv. **Entrenchment of Sound Internal Control Systems:** An effective internal control system is made up a combination of programs, procedures and processes put in place to foster overall operational effectiveness and efficiency. Strong in-built internal control systems is thus another critical component of a successful anti-fraud corporate environment (Hakami and Rahmat, 2018; Okoye and Ndah, 2019; Malle, Mwonge and Naho, 2022). Organizations must consider and entrench control processes that reinforce their stated anti-fraud corporate culture. These control processes include but not limited to conduct of surprise audits to identified high fraud risk areas, mandatory regular vacations for all employees, physical safeguards over assets, proper segregation of duties, job rotations, use of multi-levels authorizations and restriction of cash-based transactions.

v. **Creating and Sustaining an Anti-Fraud Reporting Mechanism:** Organizations must create avenues where suspicious activities which may lead to fraudulent incidences can be reported anonymously without the fear of backlash. Such avenues must be open to all categories of parties related to the organization: employees, clients, suppliers, vendors and other third-party contractors. Doing this will broaden the scope and enhance the chances of picking up unethical conduct before they occur. Such avenues for whistleblowing and anonymous reporting may be in the form of hotlines, dedicated email addresses (CIMA, 2008; Efiong, Inyang and Joshua 2016). Whistleblowing is generally a difficult and risky venture especially where adequate safeguards are not put in place to protect the identity of the persons involved.

vi. **Use of Artificial Intelligence and Data Analytics Techniques:** In view of its speed, detection capacity and ability to work unsupervised, Artificial Intelligence (AI) has been deemed "a perfect match for the rapid escalation of highly sophisticated fraud attempts" now occurring in the digital space (Columbus, 2019; Gencer, 2022). Before the advent of AI, fraud prevention systems largely operated a rules-based architecture which focused on evaluating past fraud trends without shedding sufficient light on possible future outcomes. However, with the advent of AI now, it is possible to take into account emerging activities, behaviors, and trends in transaction anomalies to ensure the prevention of frauds. AI is particularly crucial for fraud prevention mechanisms in the financial services sector (Raj and Choudhary, 2022)

The above key strategies is briefly summarized in the below chart:

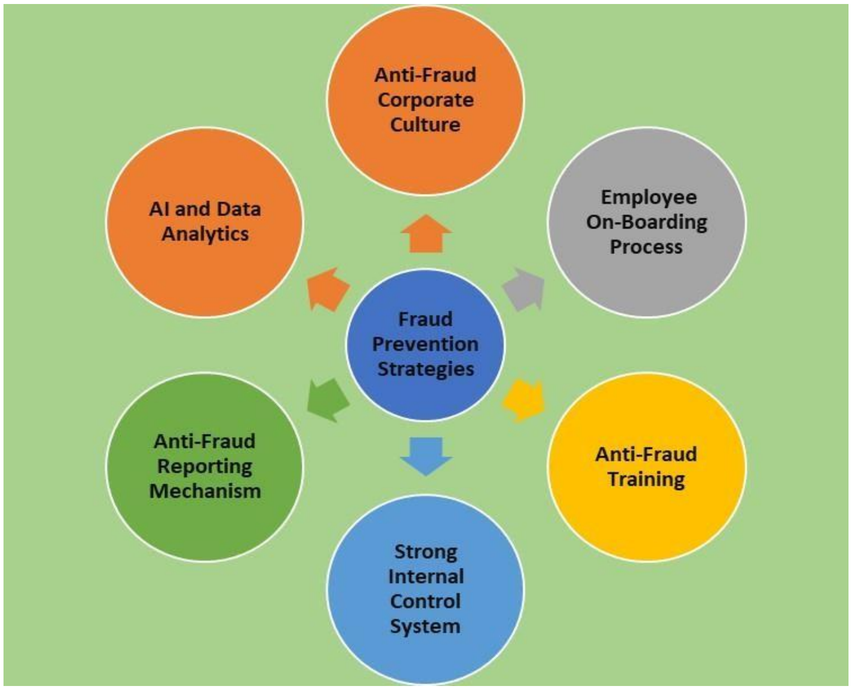

Figure 2: Fraud Strategies

Source: Adapted from CIMA (2008); BijliPay (2016); Columbus (2019); ACFE (2022)

Forensic Accounting and Fraud Prevention

Forensic accounting employs a mix of accounting, auditing and investigative capabilities to address incidences of frauds and aid resolution of civil or criminal disputes (Dada, Owolabi and Okwu, 2013; Enofe, Olorunnuho and Okporua, 2016; Ozuomba, Ofor and Okoye, 2016; Nwaiwu and Aaron, 2018; Mohite, 2019; Obafemi, 2021). Fyneface and Oseiweh (2017) asserted that forensic accounting is crucial for both fraud detection and fraud prevention efforts in organizations to succeed. According to the studies of Imoniana, Antunes and Formigoni (2018), about 42% of corporate entities have indicated interest in having at least a forensic accountant at their disposal in view of escalations in fraud incidents. Onodi, Okafor and Onyali (2015) also affirm that the services of the forensic accountant are vital in the fraud detection and prevention processes. This is in consonance with the views of Crumbley (2013) who predicted that the demand for the professional services of forensic accountants will continue to rise and therefore nation states battling with increasing cases of frauds should take advantage by stepping up their engagements. Thus, it is expected that the deployment of forensic accounting and its techniques would help in the fight against the scourge of fraud.

In the views of Uniamikogbo; Adeusi & Amu (2019), forensic accounting can particularly be useful in fraud prevention initiatives in such areas as transactions monitoring, the design and development of workable anti-fraud policies and programs and contributions to the review of the criminal justice system while serving as expert witnesses. Transactions monitoring can be carried out using spreadsheet analysis and specialized packages like anti-money laundering software. Doing this will enable the forensic accountant to zero in early on suspicious transactions patterns and trends that may be a prelude to fraud occurring.

Additional forensic accounting techniques and tools such as structured interview sessions, extensive documents review, data mining, use of digital tools (close circuit television, optical character recognition, digital cameras), Benford's Law and Beneish Model also offer significant value add to fraud prevention initiatives (Effiong, Inyang and Joshua, 2016; Dada, Oyedokun and Enyi, 2018; Saleh, Azhar and Azeez, 2020). Through the structured interview session supported by extensive documents review, the forensic accountant may be able observe discrepancies in account balances as well as extract confessions on attempted frauds. Similarly, with the use of the Benford's Law and Beneish model, it is possible to quickly decipher numerical data that are out of sequence with established normal financial flow and pattern which thus pinpoint likely illegal or fraudulent transaction occurring (Mbasiti, Ojaide and Gyang, 2021).

These techniques therefore that are most suited for fraud prevention are as depicted in the figure below:

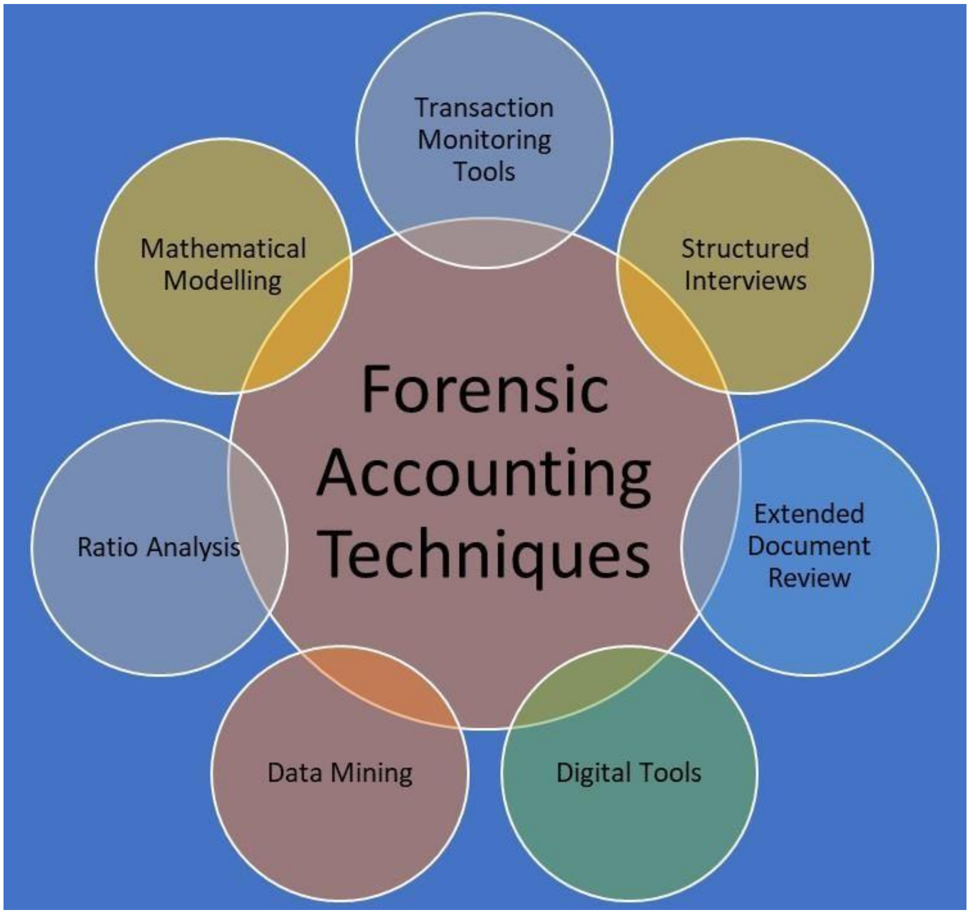

Figure 3: Forensic Accounting Techniques for Fraud Prevention
Source: Adapted from CIMA (2008), Dada et al, (2018), Saleh et al, (2020), Mbasiti et al, (2021)

Fraud Prevention: Perspectives from Emerging Economies

This section reviews perspectives from various countries, especially from the emerging economies on the state of play with respect to fraud prevention mechanism and the use or non- use of forensic accounting tools with a view to eliciting useful lessons. In Tanzania, Malle, Mwonge and Naho (2022) carried out a study to ascertain the effectiveness of fraud prevention and detection measures being taken in the country's public sector. Their study drew inspiration from previous works in the country that suggested a prevalence of fraud scandals in government institutions but with little empirical evidence to support the impact of fraud prevention measures. The study outcome showed that while traditional auditing tools such as bank reconciliations, inventory review and other internal controls were commonly used, forensic accounting tools and techniques such as data mining and digital tools were rarely used due largely to knowledge deficiencies. This therefore has the potential of limiting the effectiveness of the fraud prevention measures currently in use in the country.

Similarly, a study conducted by Singal, Nagi and Goyal (2019) to explain the Indian perspective of the effectiveness of fraud prevention strategies recommended a focus on adherence to management policies as a remedy to curbing incidences of frauds in the public sector rather than a recourse to forensic accounting methodologies. The study obtained responses from participants drawn from thirty (30) public sector organizations and found that significant internal control failings in the institutions aided the occurrence of repeated frauds. However, closing this gap of failings would have been further aided if forensic accounting techniques were also considered. In respect of Saudi Arabia, Hakami and Rahmat (2018), focused their interrogation of the effectiveness of fraud prevention strategies by considering its impact on the public sector. The study adopted a survey research design methodology using the instrument of an administered structured questionnaire to obtain responses from one hundred and fifty (150) employees of twelve (12) commercial banks in the country. The study considered various strategies aimed at minimizing the occurrence of frauds from the standpoints of pressure, opportunity and rationalization provided by perpetrators. The research however concluded that continual education and positive employee recognition were the chief tools that can aid the success of fraud prevention measures.

In Iraq, the studies of Barzingi et al, (2022) tried to establish a nexus between the use of forensic accounting and fraud prevention effectiveness in selected companies totaling one hundred and ten (110) which are duly listed on the Stock Exchange. The study adopted a quantitative deductive approach to extract data from the selected respondents which were drawn from the team of Audit Committee Chairmen of corporates, internal auditors, chief financial officers alongside their respective chief executive officers. Specifically, the study was able to establish that competence in the use of forensic accounting methodologies and techniques when moderated by sound internal control processes has a direct and positive impact in enhancing the success of fraud prevention initiatives within the Iraqi business environment.

In Indonesia, Sumartono, Urumsah and Hamdani (2020) assessed the impact that the possession of requisite forensic accounting skills had on fraud prevention and detection activities using a descriptive survey approach. Data for the work was gotten from questionnaire directed to members of Indonesia’s Supreme Audit Institution. The study identified that the problem of fraud was most prevalent in Indonesia’s public institution with the country occupying the 88th position out of 168 countries surveyed by Transparency International in 2015. The study’s ultimate findings suggested that the ability to draw upon investigative and business valuation skills were the principal tools that aided the country’s forensic accountants in fraud prevention and detection.

In terms of Pakistan, Saifullah and Abbas (2020) evaluated the degree to which forensic accounting contributed in fostering fraud prevention and consequently overall efficiency of public sector organizations. The study documented that in a survey of one hundred and fifty

(159) countries conducted in 2015, Pakistan ranked as the worst in terms of tax fraud, bribery and corruption index thus underscoring the need to consider alternative tools other than traditional auditing to combat the scourge. However, the extent of usage of forensic accounting tools were still low in the country's public sector. The study recommended that alongside improvements in internal control and financial reporting quality, efforts must be made to also utilize forensic accounting methodologies to ensure the curtailing of frauds in public sector organizations.

Suleiman and Ahmi (2018) examined the extent to which anti-corruption agencies have been able to use forensic accounting techniques and tools to combat fraud and corruption in Nigeria's government establishments. The paper based its conclusions on data that was gotten via the interview technique while the collated data was subsequently analyzed thematically. The respondents in the study were forensic experts attached to the country's principal anti- corruption agencies. Analysis of the responses received from the experts established the notion that the use of forensic accounting techniques were pivotal in successfully tracking and combating public sector frauds and corruptions in Nigeria. The study therefore advocated for a reinforcement of this approach through the purchase of more modern digital tools and increased training for the forensic personnel. We note that the study findings are in consonance with the works of Ocansey (2017) who conducted a similar study using the anti-corruption agency in Ghana as benchmark.

Theoretical Review

This research work is grounded on the Fraud Diamond Theory which was propounded by Messrs. Wolfe and Hermanson in 2004. The theory is essentially an upgrade on the fraud triangle theory which stressed that for any fraud to be successfully committed, four key elements must be present: opportunity, pressure, rationalization and capability (Wolfe and Hermanson, 2004). The fourth factor of capability is considered particularly germane because the fraud inclined individual must possess the requisite skills, traits and abilities required to execute the illicit scheme. They were of the view that "while opportunity opens the doorway to fraud and pressure or incentives added to rationalization leads the fraud inclined individual to the door, it is capability (possession of the required expertise) that will open the door and execute the fraudulent act." This is as depicted in the chart below:

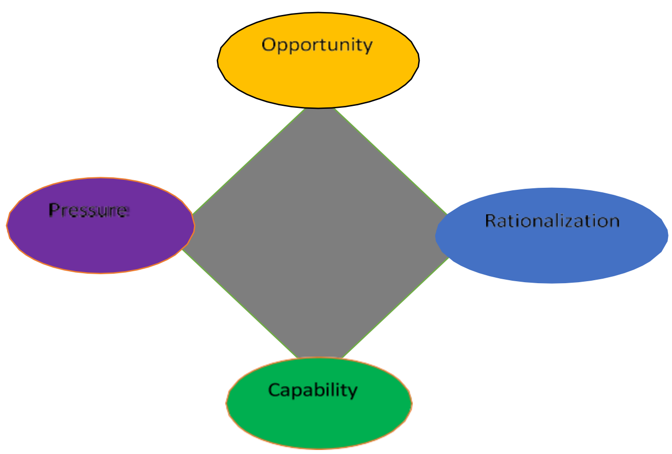

Figure 4: Fraud Diamond Theory
Source: Wolfe and Hermanson (2004)

Supporters of the theory have argued that the theory provides additional context to the notion of pressure beyond money as earlier encapsulated in the fraud triangle theory. They therefore posit that pressure would include incidences of coercion, use of ego, entitlement and ideology especially when considering large scale heist perpetrated by corporate organizations (Dorminey,et al 2010; Kranacher, et al 2011; Mackevicius and Giriunas, 2013; Puspasari, 2016). Marks (2012) have however contended that in view of the preponderance of frauds perpetrated largely by senior management of organizations, an additional element called arrogance needed to be included to produce the fraud pentagon theory. Nevertheless, the fraud diamond theory is considered pivotal for this study as it recognizes the crucial importance forensic accountants to possess the requisite skills, abilities and expertise needed to be deployed in fraud prevention activities.

Empirical Review

Alhassan (2021) explored the nexus between fraud detection, prevention and forensic accounting in Nigerian government establishments sector via the instrumentality of a survey research design approach. Primary data was elicited from selected respondents and analysis of the collected data established the usefulness of forensic accounting as a panacea for both fraud prevention and detection in the public sector. The study therefore recommended the need for upskilling of forensic accountants to meet with emerging financial crimes challenges. Similarly, public servants should be encouraged to uphold high ethical conduct to mitigate incidences of financial frauds.

Akinbowale, Klingelhofer and Zerihun (2021) explored the association between forensic accounting and Cyberfraud detection and prevention in selected Kenyan Banks. The study used a linear programming approach to establish the linkage between the study variables and discovered that the practice of forensic accounting supported the lessening of Cyberfraud incidences and improvement in the overall reputation of the affected banks. To ensure the sustenance of these benefits, the study recommended the introduction of legislations that would foster the practice of forensic accounting and enhancement of cybersecurity measures to ensure continued soundness of the banking system.

Okoye and Mbanugo (2020) examined the proprietary of using forensic accounting as a tool to foster fraud prevention and detection in selected educational establishments. The study utilized a survey research design methodology using structured questionnaire and personal interviews as instruments for data collection from 350 respondents. Data collected was analyzed using the regression tool and the research made a case for the use of forensic accountants rather than conventional external auditors for the tasks of fraud detection and prevention in Nigerian educational institutions. This submission arose from the observed marked difference in outcomes between the engagements of forensic accountants and conventional external auditors.

Dada and Jimoh (2020) studied the association between forensic accounting and financial crimes using the Nigerian Public Sector as focal point. The data for the work was gotten via administered questionnaire and personal interviews of sampled public sector officials in Nigeria’s economic capital, Lagos. Data was collected from only three hundred and eighty-four (384) respondents. The collected data was subsequently analyzed using the regression technique and results indicated that litigation support service as a benchmark for forensic accounting had significant inverse impact on financial crimes. This implied that the adoption of litigation support service was found to be crucial in ensuring the fruitful trial of financial fraudulent schemes. It then suggested that as financial frauds become more digital in nature, public institutions should also seek out avenues to use forensic accounting software to be able to combat the scourge.

Adesina, Erin, Ajetunmobi, Ilogho, and Asiriuwa (2020) empirically examined the role of forensic audit in frauds detection and prevention in Nigerian commercial banks. The research utilized the survey research design approach via the instrument of a structured questionnaire administered to seventeen (17) selected financial institutions. Data was collected from only one hundred and ninety-three (193) respondents. The research outcome established that the use of forensic accountants positively influenced financial frauds detection and prevention in the affected institutions. It therefore advocated for the establishment of dedicated forensic departments manned by qualified personnel in each of the financial institutions.

Ndah and Okoye (2019) empirically examined the connection between the deployment of forensic accounting and fraud prevention of selected manufacturing entities operating in Nigeria. The data for the study was extracted via an administered structured questionnaire while analysis was carried out using the multiple regression tool. Data was collected from only fifty (50) respondents. The study's main outcomes were to the effect that key forensic accounting practices such as fraud litigation support and fraud investigation significantly impacted fraud prevention in the sampled manufacturing concerns. It therefore advocated for the sustained use of forensic professionals to deter incidences of frauds in the establishments. Abdulrahman (2019) conceptually reviewed the nexus between forensic accounting and fraud prevention using the exploratory research design methodology. The researcher carried out a review of previous related works in the field and observed that s significant positive relationship subsists between the practice of forensic accounting and the detection of frauds in the public sector which was the focal point for consideration in the study. In concluding the work, the researcher canvassed for the enactment of and subsequent enforcement of appropriate legal framework with respect to the practice of forensic accounting in Nigeria.

Bassey (2018) assessed the effect of forensic accounting on fraud management in selected microfinance entities. The research utilized a mix of ex-post facto and survey research design to elicit data for the work while analysis was conducted using the multivariate regression tool. Data was collected from only two hundred and fifty (250) respondents. The research outcome established that the use of forensic accounting practices reduces the incidences of frauds in the sampled institutions and thus recommended the sustenance of the use of forensic professionals to monitor, investigate and deter frauds on a continual basis.

Enofe, Aigbepue, Igbarunmah and Ikponwonba (2017) conducted a research focusing on the interplay between the forensic practice of expert witnessing and fraud detection in the Nigerian public sector space. The study gathered data from 90 respondents who were selected via the convenience sampling technique. Analysis of the data collected was carried out using the SPSS and EViews statistical tools. The study found that expert witnessing as a proxy of forensic accounting had a statistically positive influence on financial fraud detection. It therefore canvassed for an increase in the use of forensic accountants in the public sector to aid successful prosecution of financial crimes and hence reduction of financial frauds generally.

Aigienohuwa, Okoye and Uniamikogbo (2017) examined the impact of forensic accounting on fraud prevention and detection in the Nigerian financial services industry using a survey research design methodology. Data was extracted from administered structured questionnaire which was subsequently subjected to analysis using the tools of regression and correlation respectively. Data was collected from only one hundred and twenty (120) respondents. The study found that the adoption of forensic accounting methods in the sampled institutions positively improved the internal control system in place while also contributing to the reduction of fraud incidences. It therefore recommended that regulatory authorities should urgently consider enacting regulations that will make the use of forensic accountants a necessity by these institutions in view of their sensitivity and overall impact on the economy.

Amahalu, Obi and Ezechukwu (2017) in their studies, focused on establishing the relationship between the use of forensic accounting techniques and fraud detection in selected deposit money banks. Data collected via the means of administered questionnaire was also analyzed using inferential statistics. Data was collected from only thirty-five (35) respondents. The research outcome was to the effect that the use of forensic accounting techniques positively impacted financial fraud prevention and detection in the selected financial institutions. To ensure improvement in the quality of both internal and external audits, the researchers recommended the introduction of certain forensic accounting methodologies in the audit work plans so as to ensure overall effectiveness and efficiency of the audit work.

METHODOLOGY

Fraud prevention strategies and the role of forensic accounting were examined in this study adopting an exploratory research approach. In addressing this nexus, the study reverted to the use of germane materials including but not limited to periodicals and published academic papers from the broad fields of accounting, forensics and finance. Specifically, the review involved three phases. First, a systematic review of multiple academic databases with principal focus on the study’s identified keywords was carried out. These databases included Google Scholar, Emerald, JSTOR, ScienceDirect, Ulrich and ProQuest, EBSCO A-Z, Index Copernicus, CrossRef, World Cat and the Directory of Open Access Journals (DOAJ). This review revealed about 105 related academic papers at the first instance. This was subsequently pruned down to 42 using period and scope of study as inclusion criteria to enable better focus and relatability. Time horizon for the period selected was twelve years covering 2009 to 2021. Next, full-text scanning of the selected 42 articles was done that culminated in the final selection of 11 papers which fully met the research objective and were consequently reflected in the empirical reviews.

DISCUSSION OF FINDINGS

It can be observed from the review of extant literature that forensic accounting plays a pivotal role in aiding fraud prevention efforts of both corporate organizations’ and nation states. The study has shown that fraud prevention is not a reactive but forward-thinking process that is worth the consideration of every organization as it is cheaper and more effective than fraud detection. The study discovered that while the use and deployment of forensic accounting tools and techniques have made appreciable progress in the developed world, its appreciation and usage in emerging economies is still at the embryonic stage. More therefore still needs to be done to maximize the benefits arising therefrom. This view is in consonance with the findings of Saifullah and Abbas (2020); Malle, Mwonge and Naho (2022).

Furthermore, the study found that much studies are not available on the private sector due to the non-availability of publicly verifiable fraud statistics as well as the reluctance of private sector employees to participate in data gathering research process such as surveys or expert interviews. In addition, where surveys are conducted, the level of response are usually poor thus creating doubts as to the reliability of the research results as reflected in the studies of Yuniarti and Anaidi (2017); Hakami and Ariandi (2018). Also, the study found that the need for the right ethical tone to be set at the top is crucial for the success of any fraud prevention mechanism. This is aptly demonstrated in the performance of anti-corruption agencies set up by nation states where the absence of or lack of political will significantly impacts their performance (Ocansey, 2017; Suleiman and Ahmi, 2018).

In addition, from the review of related literature, the study found that forensic accounting had a direct and positive impact in enhancing the success of fraud prevention initiatives (Abdulrahman, 2019; Adesina et.al, 2020; Dada and Jimoh, 2020; Barzingi et al, 2022, Kaur, Sood and Grima, 2022). The positive relationship therefore suggests that increases in the usage of forensic accounting will also lead to increases in the number and scale of frauds that are detected and prevented. However, some studies have suggested an insignificant relationship due largely to gaps in knowledge, complexities of forensic accounting methodologies being used and the resistance to change of operators in the public sector (Yahaya, Suleiman and Abba, 2018). Thus, it is crucial for new adopters to begin implementation first with simple and easy to understand methodologies in order to get sustainable results.

CONCLUSION

This study set out to explore theoretically the role that the implementation and usage of forensic accounting plays in facilitating the success of fraud prevention measures. The study established that forensic accounting is a fundamental tool that contributes to aiding the combating of the scourge of frauds both at corporate levels and in governmental establishments. The paper however identified that unlike in developed economies, the rate and pace of adoption of forensic accounting techniques and tools in fraud prevention initiatives and have been slow due to lack of political will, poor ethical tone set by management and dearth of skilled forensic accounting professionals in emerging economies.

Consequently, the study recommends as follows:

1. That to ensure sustainable success of fraud prevention strategies, management of both public sector and corporate entities should demonstrate at all times, the needed political will and set the right ethical tone at the top through their actions and activities;
2. That both public sector and corporate entities should deliberately engage in continual upskilling of their anti-fraud staffs (internal audit, forensic accountants, forensic investigators) through trainings and awareness programs on the latest fraud prevention methodologies;
3. That in view of the rising cases of cybercrimes, nation states should urgently consider the signing and implementation of legal treaties and frameworks to combat the scourge.

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EFFECT OF FORENSIC ACCOUNTING MECHANISM ON FRAUD CONTROL IN SELECTED NIGERIAN FEDERAL GOVERNMENT PARASTATALS IN SOUTHWESTERN NIGERIA

Abstract

The growing demand for forensic accounting is a known characteristic of most companies in the world. Forensic accounting arises from the effect and cause of fraud and technical error made by human. Hence, this study examined the effect of forensic accounting mechanism on fraud control in selected Nigerian federal government parastatals in southwestern Nigeria. The study employed survey design using well-structured questionnaire. The population of the study comprises of all federal government parastatals in Nigeria while the study sample size comprises of selected forensic accountant of finance units of Department and Agencies in Osun, Lagos, Ogun, Oyo, Ondo, and Ekiti States in Nigeria. Purposive sampling technique was used to select respondents revealed that most of the respondents were male, married, average age of 41-50years with first degree educational qualification of HND/BSc and average work experience of 16-20 years. The result of the PPMC analysis indicated that there is a moderate positive correlation (0.453) between the effectiveness of the forensic accounting mechanisms and the ability to detect and prevent financial fraud in the parastatals. This correlation is statistically significant (p-value = 0.000), indicating that forensic accounting mechanisms improve, the ability to detect and prevent financial fraud. The study concluded that positive relationship exists between forensic accounting mechanism and financial fraud control in selected federal government parastatals. The study therefore concluded that government should consider advocating for the widespread adoption of forensic accounting mechanisms in government parastatals to enhance overall financial integrity.

Introduction

The growing demand for forensic accounting is a known characteristic of most companies in the world. Forensic accounting arises from the effect and cause of fraud and technical error made by human (Enofe *et al.,* 2017).

Fraud has become very complicated in this era of technology, and increasingly difficult to detect, especially when it is collusive in nature and committed by top management who are capable of concealing it. In this respect, auditors have argued that the detection of fraud should not be their responsibility (Ismail, 2021). Consequently, the term fraud in prior auditing standards referred to irregularity which incorporated fraudulent financial reporting as (Imoniana, *et al*., 2018)

In forensic accounting, fraud preventive measures reduce fraud from occurring. However, fraud detective measures are enforced when fraud preventive measures failed to identify fraud (Idris, 2017). Fraud detection involves the use of fraud control policies, whistle blowing and fraud risk registers to act upon the discovery of fraud elements in financial statements or financial transactions. Gbegi and Okoye (2018) asserted that fraud detection is a set of forensic activities continuously undertaken to prevent money or property from being obtained through false pretenses. Forensic detective measures are used to checkmate the intelligent criminal strategies of fraudsters. Fraud detection is gaining importance in the corporate world because of the increasing rates of white collar crime committed across all levels of government, management of companies and categories of employees. In the private and public sectors of Nigeria, fraud detection is not a welcome idea because fraud a big business that is supported by Nigerians who are friends with the ruling political powers of the day.

Forensic accounting provides cultural mediation for economic and political logics (Williams, 2015). It is the venue within which the cultural mediation of legal and conomic claims is accomplished. The first decade of the twenty-first century experienced a tsunami‖ or blizzard‖ in the number of corporate scandals, frauds, and failures (Umara *et al.*, 2016). These events precipitated and contributed to the Great Recession and significantly impacted the efficient functioning of free market capitalism. Some of which were actually facilitated by public accountants (Enron & Arthur Andersen). The scandals, frauds, and failures have contributed to the loss of confidence by the financial statements users in the ability of public accounting to contribute viable solutions to the financial problems, and have fuelled the growth in demand for forensic accountants (Olaniyan & Awe, 2021). However, Nigerian public sector had been found involved in fraud. This is because it is always possible for high level management to access data and change the information, paper-based system or a computerized system alike. It all relates back to human nature and high level management.

Williams (2015) states that forensic accounting is recognized as having a particular form of professional expertise and endowed with identifiable attributes among which are rationality, neutrality, and independence. Forensic accountants possess a particular social recognition, observation that is critical to the translation of economic issues into symbolic displays of trust. The critical social value that forensic accountants possess is the symbolic capacity by which the translation is realized. The frequent reports of fraudulent practices in Nigeria justify the application of forensic accounting in the public and private sector. The establishment of Independent Corrupt Practices and other Related Offences Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC) saddled with the responsibilities of fighting and curbing the menace of corruption, frauds and fraudulent practices have not really performed their duties to the expectation of Nigerians and observers in the international communities. Civil servants and political leaders are busy embezzling public funds through financial misappropriation while management staff are laundering and engaging in sharp corrupt practices without fears of getting caught.

The organised nature of fraud in the public and private sectors in Nigeria is systematic and multi-dimensional. This requires systematic integration of forensic accounting skills and knowledge due to the inability of external and internal auditors to detect fraud and other economic crime carried out by public servants and private employees in Nigeria. Therefore, the extent to which forensic accounting affects financial misappropriation in the Nigerian public sector is yet to be fully and clearly projected and required further empirical evidence in the Nigerian socio-cultural context. Thus, the study makes it imperative to examine the nexus between forensic accounting mechanism and fraud control in selected federal government parastatals.

Literature Review

Conceptual Issues: Forensic Accounting

Forensic accounting is the use of laws of nature to the laws of man. This is normally carried out by forensic scientists as interpreters and examiners of facts and evidence in legal case that also gives expert opinion concerning their findings in a court of law. Fyneface and Oseiweh (2017) affirm that forensic accounting is essential investigative device for the detection of fraud. Mukoro *et al.,* (2013) opined that forensic accounting helps in introducing useful internal control and fraud prevention in an organization as well as described forensic accounting as the mixture of auditing and investigation skills. Al Samara *et al.,* (2017) define forensic accounting as the use of criminal method and incorporation of investigative accounting issues and law processes to investigate and detect financial crimes and other economic malpractices. They view forensic accounting as the combination of auditing, accounting, and investigative skills. Forensic accounting is appropriate for legal matter, offering the highest rate of assurance (Blessing, 2015).

Adrian and Lawrence (2019) also described forensic accounting as the use of accounting and analytical skills to a level satisfactory by the competent court to handle matters in contention in the perspective of both criminal and civil litigation. Fraud can be a theme to forensic accounting because fraud can include the illegal acquisition of property, concealment or falsification. Forensic accounting knowledge can assist the accountant in preparing convincing facts from the previous records against the prosecutors in the court of law (Nekede & Oko, 2013). Forensic accounting has to a great extent become an interest area to accountants and auditors.

A study carried out by Imoniana *et al.,* (2018) revealed that 42 % of organizations have opined the call for of forensic accountants due to the rapid increase in fraudulent activities and related economic crimes. According to Popoola *et al.* (2014), forensic accountants are trained to dig outside the figures and deal with the realities of circumstances. They also noted that forensic accounting include: scrutinizing, examining financial facts, creating computerized applications to support in the investigation and presentation of financial evidence and communicating their finding in form of reports, displays and assemble records, and help in legal proofs, including attesting in court, as professional witness and setting up visual aids in supporting trial verification. Okafor and Agbiogwu (2016) itemize the classification of fraud based on the modes of perpetration which include the repression, outstripped, and embezzlement, tampering with reserves, fake payment, theft defalcation, unauthorized lending, deceitful replacements, lending money to faceless borrowers, fictitious contracts and the rest.

Forensic Accounting Mechanism

According to Umar, (2016) forensic accounting in the public sector involves applying forensic accounting techniques to investigate financial fraud, misconduct, and other irregularities within government agencies and organizations. Some types of forensic accounting in the public sector include: **Public funds investigation:** Forensic accountants may investigate the misappropriation or misuse of public funds, including embezzlement, bribery, kickbacks, and other fraudulent activities within government agencies. They may analyze financial records, contracts, and transactions to identify discrepancies or irregularities, trace funds, and uncover financial misconduct.

Procurement fraud investigation: Forensic accountants may investigate procurement fraud, which involves fraudulent activities related to the procurement process in government agencies, such as bid rigging, contract fraud, and collusion among suppliers. They may examine procurement documents, contracts, and financial records to identify any irregularities, conflicts of interest, or fraudulent practices (Umar *et al*., 2016).

Grants and contracts compliance: Forensic accountants may assess compliance with grant and contract requirements in the public sector. They may review financial records, contracts, and invoices to ensure that funds are used for their intended purposes, and that the terms and conditions of grants and contracts are followed. They may also verify the accuracy and completeness of financial reports submitted to government agencies (Nonye and Okoli, 2015).

Internal control and risk assessment: Forensic accountants may evaluate the effectiveness of internal controls and assess the risk of financial fraud and misconduct within government agencies. They may review financial policies and procedures, assess the design and implementation of internal controls, and provide recommendations to strengthen controls and reduce the risk of fraud (Nekede and Oko, 2013).

Whistleblower investigations: Forensic accountants may conduct investigations into allegations of fraud, waste, or abuse reported by whistleblowers within government agencies. They may analyze financial records, conduct interviews, and gather evidence to determine the validity of the allegations and uncover any fraudulent activities (Mukoro, 2013).

Theoretical Framework

In the course of this study, the researcher anchor the work on Policeman Theory. The policeman theory claims that the auditor is a policeman and as such should focus on the arithmetical accuracy of financial figures and records. It thus expects the auditor to prevent and detect fraud, which again is the argument of financial statement users. However, it suggests that auditors are watch-dogs, but not blood hounds. Evidently from the theoretical submissions, it is clear that the preponderance of opinion is in favour of audit combining both roles of being a watch-dog as well as a blood hound. Audit is a creation of society and its continued relevance is a function of meeting society's expectation. Thus, it incumbent on the audit professional to give up its traditional role and embrace the much wider role arising from societal expectation.

Society itself is dynamic and not static and therefore audit cannot remain in its traditional defined role. The character of human economic transaction is changing and human greed appears to be on the rise thus foreclosing the traditional held strong views of morality and contentment. This greed propelled behaviour is leading to primitive acquisition and so called smart actions within a globalized personal acquisition world frame. Respect in society within human social interactions is increasingly be defined by wealth and even the might of nations is defined by economic power, thus creating an enabling environ for so called smart wealth acquisition models

Review of Empirical Studies

Okoye *et al.* (2019) empirically examines the effect of forensic accounting mechanism on fraud control. The objectives were to find the effectiveness of forensic accounting in fraud prevention and the positive effect of forensic litigation on recovery of funds lost to fraud. Survey design was adopted. Questionnaire was used in data collection from accounting staff of Nigeria

Breweries Plc, Cadbury Nigeria Plc, Nigeria Bottling Company and Dupril Forma Nigeria Ltd, all in Aba, Abia State. 190 were used as sample size. The study adopts descriptive statistics which involves the use of mean and standard deviation while regression analysis was adopted to test the stated hypotheses. Findings revealed that forensic accounting significantly influence fraud detection and prevention. It was also revealed forensic litigation has no significant positive effect on recovery of funds lost to fraud. Based on the above, it is recommended that companies in Nigeria step up their forensic accounting practices in order to detect fraud

Joy and Alexandra (2020) explores the impact of forensic accounting on misappropriation of fund in public and private sectors in Abuja metropolis, Nigeria, from the accountants' perspective. The study adopted descriptive survey design. A sample of 43 accounting officers from selected four federal ministries of government and five private multinational organisations operating in Abuja metropolis, Nigeria. Findings of the study revealed that accounting officers in the private and public sectors strongly agreed that forensic accounting has an impact on misappropriation of fund. The study further disclosed that accountants from the public sectors and private sectors do not differ significantly in their mean ratings on the impact of forensic accounting on misappropriation of fund in Abuja metropolis. The study concluded that genuine compliance of forensic accounting principles by internal and external auditors will not only reduce corporate frauds but also improves the financial reporting quality of accountants in the public and private sectors of the business world. It was recommended among others that government should establish an independent forensic accounting agency with legal provisions that will enable them to detect, monitor and report fraudulent activities in the business environment in Nigeria.

Olaniyan and Awe (2021) examined the influence of forensic accounting as a tool for fraud prevention of financial misappropriation in Nigeria. It specifically examined the influence of forensic accounting on fraud prevention and fraud detection in MDAs in Nigeria. The study was predicated on the policeman theory, white collar theory and fraud diamond theory. Primary source of data was employed through the use of questionnaire which covered the period of 10 years spanning from 2010-2010. A cross sectional Survey design was adopted. Questionnaire was used in data collection from staff of Integrated Personnel Payroll Information System and Office of the Account General of Federation. Seventy-five questionnaires were used as sample size. The study adopts descriptive statistics which involves the use of mean and standard deviation while regression analysis was adopted to test the stated hypotheses. Findings revealed that forensic accounting have significant influence on fraud detection and prevention. It was also revealed forensic litigation has no significant positive effect on recovery of funds lost to fraud. The study recommends that forensic accounting system should be allowed as a procedure for internal control systems, so as to prevent or reduce the level of income leakages, mismanagement of funds and budget padding.

Methodology

The study employed survey design using well-structured questionnaire. The population of the study comprises of all federal government parastatals in Nigeria while the study sample size comprises of selected forensic accountant of finance units of Department and Agencies in Osun, Lagos, Ogun, Oyo, Ondo, and Ekiti States in Nigeria. Purposive sampling technique was used to select the sample size. Both descriptive and inferential statistics were employed for the purpose of the data analyse. Descriptive statistics involved the use of frequencies, tables, figure and percentage to analysis the socio-economic characteristics of the respondents while inferential statistics of Pearson Product Moment Correlation (PPMC) was used to analyse the relationship between forensic accounting mechanism and fraud control.

Results and Discussion

Relationship between forensic accounting mechanism and fraud control in selected federal government parastatals

In an attempt to examine the relationship between forensic accounting mechanism and financial fraud control in selected federal government parastatals, descriptive statistics such as percentage frequencies was employed while inferential statistics such as multiple regression analysis were presented in Table

1. From Table 1, 15.2% of the total respondents strongly agreed that forensic accounting mechanisms are specifically designed to detect and prevent financial fraud in government parastatals, 15.7%of the total respondents agreed that forensic accounting mechanisms are specifically designed to detect and prevent financial fraud in government parastatals, 44.2% of the total respondents strongly couldn’t decide whether forensic accounting mechanisms are specifically designed to detect and prevent financial fraud in government parastatals, 14.0% of the total respondent disagreed that Forensic accounting mechanisms are

specifically designed to detect and prevent financial fraud in government parastatals and 10.9%of the total respondents strongly agreed that forensic accounting mechanisms are specifically designed to detect and prevent financial fraud in government parastatals.

From Table 1, 24.9% of the total respondents strongly agreed that forensic accounting mechanisms involve the collection and preservation of evidence in a legally admissible manner, 13.2%of the total respondents agreed that forensic accounting mechanisms involve the collection and preservation of evidence in a legally admissible manner, 39.3% of the total respondents couldn't decide that forensic accounting mechanisms involve the collection and preservation of evidence in a legally admissible manner, 12.2% of the total respondents disagreed that forensic accounting mechanisms involve the collection and preservation of evidence in a legally admissible manner and 10.4%of the total respondents strongly disagreed that forensic accounting mechanisms involve the collection and preservation of evidence in a legally admissible manner.

From Table 1, 25.4% of the total respondents strongly agreed that forensic accounting mechanisms take a proactive approach to fraud control by conducting regular audits and investigations to identify potential fraud risks before it result in financial losses, 9.9%of the total respondents agreed that forensic accounting mechanisms take a proactive approach to fraud control by conducting regular audits and investigations to identify potential fraud risks before it result in financial losses, 44.2% of the total respondents couldn't decide that forensic accounting mechanisms take a proactive approach to fraud control by conducting regular audits and investigations to identify potential fraud risks before it result in financial losses, 9.9% of the total respondents disagreed that forensic accounting mechanisms take a proactive approach to fraud control by conducting regular audits and investigations to identify potential fraud risks before it result in financial losses and 5.3% of the total respondents disagreed that forensic accounting mechanisms take a proactive approach to fraud control by conducting regular audits and investigations to identify potential fraud risks before it result in financial losses.

From Table 1, 19.6% of the total respondents strongly agreed that forensic accounting mechanisms contribute to building a strong internal control system in government parastatals, 14.5%of the total respondents agreed that forensic accounting mechanisms contribute to building a strong internal control system in government parastatals, 43.0% of the total respondents couldn't decide that Forensic accounting mechanisms contribute to building a strong internal control system in government parastatals, 12.3% of the total respondents disagreed that forensic accounting mechanisms contribute to building a strong internal control system in government parastatals and 10.6%of the total respondents strongly disagreed.

From Table 1, 42.6% of the total respondents strongly agreed that promoting the use of forensic accounting mechanisms further strengthen financial fraud control in government parastatals., 19.0%of the total respondents agreed that promoting the use of forensic accounting mechanisms further strengthen financial fraud control in government parastatals., 15.7% of the total respondents couldn't decide whether the promoting the use of forensic accounting mechanisms further strengthen financial fraud control in government parastatals., 11.4% of the total respondents disagreed that promoting the use of forensic accounting mechanisms further strengthen financial fraud control in government parastatals and 11.2%of the total respondents strongly agreed that promoting the use of forensic accounting mechanisms further strengthen financial fraud control in government parastatals.

Table 1 Relationship between forensic accounting mechanism and financial fraud control in selected federal government parastatals

S/N	Variables	SA (%)	A (%)	UD (%)	D (%)	SD (%)
1.	Forensic accounting mechanisms are specifically designed to detect and prevent financial fraud in government parastatals.	60 (15.2)	62 (15.7)	174(44.2)	55 (14.0)	43 (10.9)
2.	Forensic accounting mechanisms involve the collection and preservation of evidence in a legally admissible manner.	98 (24.9)	52 (13.2)	155 (39.3)	48 (12.2)	41 (10.4)
3.	Forensic accounting mechanisms take a proactive approach to fraud control by conducting regular audits and investigations to identify potential fraud risks before it result in financial losses.	100 (25.4)	39 (9.9)	174 (44.2)	39 (9.9)	21 (5.3)
4.	Forensic accounting mechanisms contribute to building a strong internal control system in government parastatals.	35 (19.6)	26 (14.5)	77 (43.0)	22 (12.3)	19 (10.6)
5.	Promoting the use of forensic accounting mechanisms further strengthen financial fraud control in government parastatals.	168 (42.6)	75 (19.0)	62 (15.7)	45 (11.4)	44 (11.2)

Source: Researchers computation using SPSS version 22

Test of Hypothesis

The analysis in table 2 showed that there is a moderate positive correlation (0.453) between the effectiveness of the forensic accounting mechanisms and the ability to detect and prevent financial fraud in the parastatals. This correlation is statistically significant (p-value = 0.000), indicating that as forensic accounting mechanisms improve, the ability to detect and prevent financial fraud also improves. Also, there is a strong positive correlation (0.537) between the effectiveness of forensic accounting mechanisms and the capacity to collect and preserve evidence related to financial fraud. This correlation is highly statistically significant (p-value = 0.000), indicating that as forensic accounting mechanisms become more effective, the ability to collect and preserve evidence also increases significantly. Furthermore, a strong positive correlation (0.633) exist between the effectiveness of forensic accounting mechanisms and the ability to identify potential fraud risks within the parastatals. This correlation is highly statistically significant (p-value = 0.000), demonstrating that as forensic accounting mechanisms improve, the capacity to identify potential fraud risks also increases significantly. The analysis also indicated a moderate positive correlation (0.383) between the effectiveness of forensic accounting mechanisms and the establishment of a strong internal control system to prevent financial fraud. This correlation is statistically significant (p-value = 0.000), indicating that as forensic accounting mechanisms improve, the development of a robust internal control system also improves. Apparently, there is a strong positive correlation (0.651) between the effectiveness of forensic accounting mechanisms and the strengthening of financial fraud control measures in the parastatals. This correlation is highly statistically significant (p-value = 0.000), demonstrating that as forensic accounting mechanisms become more effective, financial fraud control measures are significantly strengthened.

Table: 2. Pearson Correlation Results of the relationship between forensic accounting mechanism and financial fraud control in selected federal government parastatals.

Variables	Correlation coefficient	Probability value	Remark
Detection and prevention of financial fraud	0.453**	0.000	Significant
Collection and preservation of evidence	0. .537**	0.000	Significant
Identify potential fraud risks	0. 633**	0.000	Significant
Building a strong internal control system	0. 383**	0.000	Significant
Strengthen financial fraud control	0. 651**	0.000	Significant

* = 10% significant

** = 5% significant

*** = 1% significant

Source: Researchers computation using SPSS version 22

Conclusion and Recommendation

Based on the summary of findings of this study, it was concluded that positive relationship exists between forensic accounting mechanism and financial fraud control in selected federal government parastatals. The study therefore recommended that government should consider advocating for the widespread adoption of forensic accounting mechanisms in government parastatals to enhance overall financial integrity.

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FORENSIC ACCOUNTING AS A TOOL AGAINST FINANCIAL CRIME IN NIGERIA PUBLIC SECTOR

ABSTRACT

The need for forensic accounting service has been widely recognized in most developed countries. However, in developing countries, forensic accounting service is still receiving the attention of regulators and professional accounting bodies. The study's broad goal is to investigate the effect of forensic accounting as a tool against financial crime in Nigeria public sector.. A well-structured questionnaire was used to collect data, the study processed the data obtained in the field using statistical package for social sciences (SPSS) computer software and analyzed using inferential analysis that involved regression analysis. The population of concern in this study comprise of a sample of Seventy-Two (72) chief financial officers and audit managers of Eighteen (18) Ministries, Departments and Agencies (MDA) in Ondo, Osun and Ekiti state, south/western region of Nigeria as a case study. Transparency, accountability, faithful representation, and relevance were all included in the questionnaire, which are all aspects of financial management. In terms of accountability. Based on the analysis of the study, the results revealed that internal control system ($P = 0.00 < 0.05$) has positive and significant effect on Financial crime in Nigeria public sector; Forensic accounting documentary evidence ($P = 0.00 < 0.05$) has positive and significant effect on Financial crime in Nigeria public sector. The study concluded that robust internal control and forensic accounting documentary evidence has positive and significant effect on financial crime in Nigeria public sector

Keywords: Forensic Accounting, Investigation, Documentary evidence, Fraud, Nigeria.

Introduction

In some high-class circles of international financial activities, Nigeria is being regarded as the coven of fraudulent activities in Africa. In order to control this unpleasant narrative, anti-fraud agencies like Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices Commission (ICPC) and Code of Conduct Bureau (CCB) were established to uncover fraudulent financial activities and similar crimes in the nation. The observation is that many anti-fraud agencies all over the world utilises forensic accounting mechanisms to perform their investigative duties. Forensic accounting is the application of the accounting and auditing techniques on legal issues for legal settlement inside or outside the court (Tuanakotta, 2010).

More so, the breakdown of corporate governance of public organisations has motivated the accountancy profession to develop a positive disposition towards formulating and implementing a robust forensic accounting curriculum in tertiary institutions. Forensic accounting is a science that involves the application of accounting facts and concepts derived from investigative, accounting and auditing skills, techniques and procedures to resolve conflicting financial issues in a legal environment Arokiasamy and Cristal-Lee (2009). Jafaru (2011) posited that forensic accounting is the application of financial skills and investigative intelligence to conduct financial crime investigation within the context of the rules of evidence to resolve unresolved monetary and contract issues. Forensic accounting is an integral fraud-detection method that identifies signs of fraudulent financial reporting and further assist in examination of financial reports (Savona & Berlusconi, 2015). Traditionally, accountants prepared financial records while auditors ascertain whether the records are presented in a true and fair view. However, the increase in financial misstatements has awaken accounting practitioners to pay serious attention to the quality of financial records in public sector. Implementing a systematic approach towards reducing the numerous schemes of fraudsters in the corporate world has given rise to the arrival of forensic accounting and forensic accountants.

In forensic accounting, fraud preventive measures stop fraud from occurring. However, fraud detective measures are enforced when fraud preventive measures failed to prevent fraud (Bolton & Hand, 2002). Fraud detection involves the use of fraud control policies, whistle- blowing and fraud risk registers to act upon the discovery of fraud elements in financial statements or financial transactions. Forensic detective measures are used to checkmate the intelligent criminal strategies of fraudsters. Fraud detection is gaining importance in the corporate world because of the increasing rates of white-collar crime committed across all levels ofpublic sector inNigeria;.

In this democratic era of Nigeria, the biggest corruption allegation is that of the former National Security Adviser, Colonel Sambo Dasuki (rtd), who was accused to have embezzled $2.1 billion meant for arms procurement to fight against the Boko Haram insurgency in the North East region of the country. The presidential investigations committee reports suggested that part of the disbursed fund was diverted for sponsoring the re-election of former President Goodluck Jonathan. More so, Nigeria’s ex-Chief of Defence Staff Alex Badeh faced ten count charges of alleged diversion of $20 million meant for the purchase of arms (EFCC, 2016). The Fraudulent actions associated with the public sector includes; payroll schemes scam, padding of budgetary figures, money laundering, embezzlement of public funds and misappropriation of budgeted allocated funds meant for execution of capital and developmental projects.

In western climes, the liquidation of ENRON and WorldCom scandals has drawn the world to the field of forensic accounting (Ozuomba, Ofor & Okoye, 2016). The public sector in Nigeria is feeding fat on the receipts of corruption and financial crimes on daily basis. In the light of the incessant fraudulent activities in Nigeria, Okoye and Gbegi (2013) posited that government organisations need to develop interest in forensic accounting for efficient investigation and prosecution of suspected and confirmed financial fraudsters. Against this backdrop, the study will find out the effect of forensic accounting as a tool against financial crime in Nigeria public sector.

Statement of the problem

The frequent reports of financial crimes is estimated that over $3.5 trillion worldwide were lost due to fraudulent financial statements, asset misappropriation, and corruption in 2011. (Enofe, Okpako, and Atube, 2013). Fraudulent practices in Nigeria justify the application of forensic accounting in the public sector. The establishment of Independent Corrupt Practices and other Related Offences Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC) saddled with the responsibilities of fighting and curbing the threat of exploitation, frauds and fraudulent practices have not really performed their duties to the expectation of Nigerians as observers in the international communities. More recently, Suleiman, Dalhat and Sule (2018) in their study revealed that fraud obstructs sustainable development in Nigeria and threatens good corporate governance and compatible business practice. Civil servants and political leaders are busy misappropriating public funds while management staff are laundering and engaging in sharp corrupt practices without fears of being caught. The organised nature of fraud in the public sectors in Nigeria is systematic and multi-dimensional. This requires systematic integration of forensic accounting skills and knowledge due to the inability of external and internal auditors to detect fraud and other economic crime carried out by public servants in Nigeria. This glaring problem requires that there be active involvement of forensic accountants in all stages of risk assessment and developments of audit plans, and not just involve them as merely consultants (Boritz, Kotchetova, & Robinson, 2008). The later lead to success in early detection and therefore mitigation of these crimes thereby reducing any greater losses in the Nigeria economy. Without constant involvement of the public and improvement in forensic accounting, fraud cases will be hard to detect and thus lead to greater success in financial fraud, which also translates into the failure to meet the expectations of the public, shareholders or even other stakeholders (Enofe, Okpako, & Atube, 2013). Although, many research studies have investigated the role of forensic accounting on fraud detection in Nigeria. Amake and Ikhatua (2016), Ogiriki & Appah (2018), Abuh & Yanusi (2018), Edheku & Akpoveta (2015). Etc. However, there seems to be paucity of experimental studies on the effect of forensic accounting on fraud detection in Nigeria public sectors. In order to fill this gap in literature, the researcher observed that theeffect of forensic accounting as a tool against financial crime in Nigeria public sector.

Research Objectives

The broad objective of the study is to establish the effect of forensic accounting as a tool against financial crime in Nigeria public sector. The specific objectives are to:

i. Establish the effect of internal controls on financial crime in Nigeria public sector.
ii. Examine the extent to which forensic documentary evidence affect financial crime in Nigeria public sector.

Research Questions

The study has the following research questions;

i. To what extent does internal controls affect financial crime in Nigeria public sector?
ii. To What extent does forensic accounting documentary evidence affect financial crime in Nigeria public sector?

Research Hypotheses

Ho_1 - Internal control system does not have effect on financial crime mitigation in Nigeria public sectors.

Ho_2 - Forensic accounting documentary evidence does not affect financial crime mitigation in Nigeria Public sectors.

Scope of the Study

This study is limited to the analysis of the effect of forensic accounting as a tool against financial crime in Nigeria public sector. The study would equally be limited to public sectors in Ekiti and Ondo State, Nigeria

Conceptual Literature

Forensic Accounting

According to Merriam Webster's dictionary, (2019) forensic accounting is relating to or dealing with the application of scientific knowledge to legal problems by forensic experts. Forensic expert here means the forensic accountants. Forensic accounting is the supplication of financial abilities and inspective mentality to unclear matter, carried out within the context of the rule of evidence. Forensic accounting refers to the application of analytical and investigative skills for resolving financial issues in a manner that meets standards required by court of law. Forensic accounting is also defined, as the application of accounting concepts and techniques to legal problems (Abdulrahman, 2019). It is known that corruption is a universal occurrence. It is pervasive both in the developed nations and in developing nations, most especially those of the sub-Sahara Africa including Nigeria. Academic and policy discussion on corruption in Nigeria has remained an opened debate (Ogbeidi, 2012). According to Atelhe & Agada (2014), corruption is a derivation of Latin origin, "corruptus" which stands for; "to destroy", and it has been variously described as a means of perversion or a procedure of changing well into bad.
Enofe, Ekpulu, and Ajala, (2015) also defined financial crime as the conduct of a corporation, or of employees acting on behalf of a corporation, which is forbidden and punishable by law.

Financial crime intersects and is usually confused with white-collar crime, organised crime and state-corporate crime. Financial crime is difficult to be detected and identified and is not as evident as the conventional crime (Enofe et al., 2015).

Forensic Accounting documentary evidence that affect financial crime in Nigeria public sector.

According to William (1990), Lee (2000) and Kim (1998). Documentary evidence consists of any proof that is available for writing contracts, wills, invoices, etc. However, term can technically include any number of media upon which such documentation can be recorded and stored photographs, recordings, films, printed emails As most financial crimes, investigation is reactive or historic in nature; documents generated prior to the commission of that offence are essential and normally make the majority of evidence. Bank records, accounting records, legal documents or instruments are normally the basis for the case.

According to Lee (2000), evidence is anything. (Tangible objects, documents, and testimony) that relates to the truth or falsity of an assertion made in an investigation or legal proceeding. The goal of the fraud investigator is to collect evidence relevant to the fraud under investigation. Such evidence, when well organized, provides answers to the basic questions about fraud.

Theoretical Review

Fraud Triangle Theory

According to Albrecht et al., (2009) fraud is composed of three elements, namely: a perceived pressure, a perceived opportunity and rationalization of the act of fraud; these three elements are called the fraud triangle. This three-step process, was presented to explain a trust violation by Cressey (1953) who adamantly argued that whenever all three characteristics were present, a trust violation would occur, while the absence of any one of the elements would result in the absence of such a violation. These three elements are common to all frauds (Wells, 2001). The first element of the fraud triangle is pressure. These pressures do not have to be real, they only have to seem real to the perpetrator. When it comes to perceived pressure also referred to as non-shareable financial problem, Cressey stated “persons become trust violators when they conceive of themselves as having incurred financial commitments which are considered as non- socially sanction able and which, consequently, must be satisfied by a private or secret means” (Cressey, 1950). Pressures in Nigeria public sectors arise from Non-payment of workers’ salaries which leads to the problems such as difficulty in paying back debts, problems resulting from personal failure, inflation or recession, physical isolation of trust violator from people who can help him, living beyond one’s means, and employer-employee relations where employer’s treatment on employee is unfair (Cressey, 1953).

A perceived opportunity and to avoid being punished is the second element of the fraud triangle. He also mentioned that perceived opportunity in any of Nigeria MDAs arises when the fraudster sees a way to use their position of trust to solve their financial problem, knowing they are unlikely to be caught (Cressey, 1950). A perceived opportunities to commit fraud in Nigeria public sectors include; a weak board of directors, a lack of or circumvention of controls that prevent/detect fraudulent behavior, failure to discipline fraud perpetrators, lack of access to information, and the lack of an audit trail (Albretch et al, 2010). The Committee of Sponsoring Organizations (2002) identified five elements of an organization's internal control framework that must be taken into consideration in order to avoid fraudulent opportunities and they include the control environment, risk assessment, control activities, information and communication, and monitoring in many MDAs in Nigeria, these are only in theory

The third element of the fraud triangle is rationalization. Perpetrators of fraud in Nigeria public sectors must find ways to rationalize their illegal acts as being acceptable and, in the process, rationalize the dishonesty of their acts (Albrecht et al, 2006). As for rationalization, Cressey believed that most fraudsters are first-time offenders with no criminal record and see themselves as ordinary, honest people who are caught in a bad situation (Cressey, 1950). Lister (2007) defined rationalization as "the oxygen that keeps the fire burning" and mentioned that although auditors in Nigeria public sectors may not be able to assess the personal value systems of each individual in the organization, they can assess the corporate culture. It is through rationalization that trust violators justify the crime to themselves in a way that makes it acceptable or justifiable.

Empirical review

Modugu and Anyaduba (2013) examined forensic accounting and financial fraud in Nigeria and specifically if there is significant agreement amongst stakeholders on the effectiveness of forensic accounting in financial fraud control, financial reporting and internal control quality. The survey design was used in the study with a sample size of 143 consisting of accountants, management staffs, practicing auditors and shareholders. The simple random technique was utilized in selecting the sample size, while the binomial test was employed in the data analysis. Among the findings of the study was that there is significant agreement amongst stakeholders on the effectiveness of forensic accounting in fraud control, financial reporting and internal control quality and therefore recommended formalization and specialization in the field of forensic accounting.

Amake and Ikhatua (2016) examined forensic accounting and fraud detection in Nigeria public sector. A research survey design was used for the study while a sample of One hundred (100) respondents comprising of auditors and accountants of four (4) ministries was selected from Edo State in Nigeria. Analysis of Variance (ANOVA) was used to test the hypothesis. The finding revealed that the application of forensic accounting in Nigeria's public sector is effective in detecting fraud; and there is a significant relationship between forensic accounting and litigation service in Nigeria court.

Ogiriki and Appah (2018) empirically analysed the effect of forensic accounting and auditing techniques on public sector fraud detection, investigation and prevention in Nigeria. Specifically, the study sought to establish the effect of the various techniques of forensic accounting on public sector fraud and secondly, to determine the effect of forensic auditing on fraud detection, investigation and prevention. The study adopted an ex-post factor design, structured questionnaire which was distributed to a sample of 116 from the total population of 164 for data collection and the hypothesis were analysed using regression analysis. The study revealed that the relationship between forensic accounting and auditing techniques and public sector fraud detection, investigation and prevention in Nigeria is quite significant. The study therefore concludes that forensic accounting and auditing techniques is a major panacea to the level of fraudulent activities experienced in the Nigerian public sector. It was recommended among others that government should consider providing more fraud hotlines, improve the whistle blowing policy and establish forensic accounting department in the public sector in order to enhance the fraud detection, investigation and prevention mechanism in the public sector.

Abuh and Yanusi (2018) assessed forensic accounting at combating financial crimes in Nigeria Public Sector through the effort of EFCC. Secondary data were used. A sample of 116 was obtained of the total population of 164 using Taro Yamane sample size statistical technique. Five point Likert scale questionnaire was employed while analysis of variance (ANOVA) was used to test the research hypothesis. The study findings indicate that the application of forensic accounting skills and techniques has contributed immensely in the investigation of complex financial crimes thereby enhancing economic stability.

Conceptual Framework

Financial crime is a significant problem to the world of today. Government allocate many resources to public sector. A framework implemented in public sector to prevent internal fraud. Ministries, Departments and Agencies (MDAs) shows the research objective in this paper, it is to present a framework for effect of forensic accounting on financial crime reduction. This involves the view of eminent scholars' elaboration and explanation. The researchers' sources are mostly seminar papers, articles in relevant journals and related books on the subject under review which broaden the researchers' knowledge of the topic. Fraud is a very comprehensive field of financial crime, under which exists a range of different activities. Arising from its diverse nature, it has been difficult to offer comprehensive definition of the term financial crime. Notwithstanding the comprehensive and dynamic nature of financial crime, which many authors have tried within the limits of their environment and the scope of their understanding to offer a concise definition of financial crime.Some authors have tried to define financial crime from their legal point of view while others have defined fraud from the accounting perspective.

Methodology

This study uses descriptive research because it closely examines and determines data and reports information within a specific context. The population of concern in this study comprise of a sample of Seventy-Two (72) chief financial officers and audit managers of Eighteen (18) Ministries, Departments and Agencies (MDA) in the southwestern region of Nigeria.
Transparency, accountability, faithful portrayal, and relevance were all covered in the survey, the revenue generated by the Government is worthy target for financial crime in terms of fraud hence the need to see the effect of forensic accounting in the (MDAs)and due to proximity issues. The researcher used primary data for the study, which is data collected directly from the first-hand experience and structured questionnaire were used to collect data on the dependent and independent variables. This is because structured questionnaires are easier to administer, analyse and economical in terms of time and finance. The questionnaires were issued to the respondents through informal self-introduction through the help of a research assistant. Each entity within the questionnaire was developed to tackle a specific objective and research question to fit best in the research problem. Structured questionnaires are more convenient as most top bursary and audit staff are busy accounting officers and it is expected that they would have less time to take part in oral interviews. The questionnaires were managed through mail, drop and pick method and Auditing and Accounting social media groups. The questionnaire had Four (4) sections. Section one (1) comprised of questions that sought to find out the general information about the respondent. Section two seeks information on the robust internal controls, section three sought to find information on management override controls and section four required to find information on financial crime mitigation. The target respondents were the chief financial officers and audit managers of(18) Ministries, Departments and Agencies (MDA) in the southwestern region of Nigeria. For verification of the reliability of the questionnaire used in this study, it was subjected to pre- trial tests by administering the instrument to a sample selected from the entire population of listed MDAs, after which the results were analysed and assessed for reliability. The data generated by the study after fieldwork was edited, coded then processed using the Statistical Package for Social Sciences (SPSS v.17.0). A master codebook designed to ensure that all the questionnaires were coded uniformly was used. According to Cohen and Manion (1980), editing of responses is intended to identify and eliminate errors made by the interviewer or respondents. Consequently, data was edited for completeness and consistency before analysis. Descriptive statistics was used to analyse information generated from respondents. This involved the use of frequencies, percentages and means.

A regression model of the form $Y= \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$ was used where:

Y- Financial crime mitigation (CCM) as measured by effective internal audit, vigorous fraud hotlines and an organisation culture.

X1- Robust internal controls (RIC) as a measure of control environment, risk assessment, control activities, information and communication and monitoring.

X2- Minimization of Management overrides of controls (MOC) as a measure of an effective audit committee, functional whistle blower program and organisation code of conduct.

X3- Clear segregation of duties and responsibilities (CSDR) as a measure of control of processes and collusion of employees.

The test of significance is a method of making due allowance for the sampling fluctuation affecting the results of experiments or observations by distinguishing whether the observed difference connotes any real difference among the groups. For the purpose of the study, two coefficient of determination, denoted as R was used to indicate how well data fit into the statistical model. F-statistics was used to undertake further analysis. Analysis of variance (ANOVA) tests was used in the analysis of experimental data to test the variables for statistical significance.

RESULTS AND DISCUSSION

Frequency Table

Sex

	Frequency	Percent
Male	40	55.6
Female	32	44.4
Total	72	100.0

Age

	Frequency	Percent
18 – 29 years	9	12.5
30 – 40 years	22	30.6
41 years and above	41	56.9
Total	72	100.0

Academic Qualification

	Frequency	Percent
B.Sc/HND	38	52.8
M.Sc	10	13.9
Ph.D	24	33.3
Total	72	100.0

Descriptive Statistics on Internal Controls

The results presented in table 1 shows that 51.4% (Agreed 34.7+16.7 Strongly Agreed) of the respondents agreed that a robust internal control system does have effect on financial crime mitigation in Nigeria public sectors. 69.4% of the respondents agreedthat their organisations makes use of code of conduct. Result also showed that 88.9% of the respondents agreed to findings that asked if their organisation does have a robust audit committee. In addition, result shows that 56.9% of the respondents agreed that their organisation regularly conduct financial crime risk assessment. While finding also shows that 38.9 of the respondents agreed that their organisation have a functional whistle blower programme, furthermore 95.8% of the respondents agreed that their organisation always look into alleged fraud or illegal activity. Study further shows that 95.8% of the data agreed that Auditors strictly adhere to auditing ethics in their organisation. Result equally show that 93% of the population sampled agreed that efficient prosecution of financial crimes do exist in their organisation.Lastly,93.1% of the respondents agreed that Auditors do detect fraudulent transactions quickly in their organisation. These results imply that robust internal controls influences financial crime mitigation.

Table 1: Internal Controls

S/N	DESCRIPTION	AGREE %	STRONGLY AGREED %	DISAGREE %	STRONGLY DISAGREE %
1	A robust internal control system does have an effect on financial crime mitigation in Nigeria public sectors	34.7	16.7	26.4	22.2
2	The organisation make use of code of conduct	61.1	8.3	9.7	20.8
3	The organisation have audit committee	72.2	16.7	2.8	8.3
4	The organisation regularly conduct financial crime risk assessment	48.6	8.3	34.7	8.3
5	The organisation have a functional whistle blower programme	0	38.9	38.9	22.2
6	Management always look into alleged fraud or illegal activity	20.8	75.0	0	4.2
7	Auditors strictly adhere to auditing ethics	58.3	37.5	4.2	0
8	Efficient prosecution of financial crimes in the organisation	45.8	47.2	4.2	2.8
9	Auditors detect fraudulent transactions quickly in your organization	55.6	37.5	6.9	0

Descriptive Statistics of Management override controls

The results presented in table Two (2) shows that 79.2% of the respondents agreed to the fact that their organisation maintains an appropriate level of skepticism while, 93.1% of the respondents agreed that their organisation does strengthen committees that have understanding of their vision.95.9% of the respondents agreed that their organisation do brainstorm on fraud risks and loopholes. In addition, 91.6% of the respondents agreed that their organisation uses the code of conduct to assess financial reporting culture. 59.8% of the respondents agreed that their organisation cultivates a vigorous whistle-blower program. Further result also shows that 100% of the respondents agreed that their organisation do expose accountants who engaged in fraudulent transactions.

Table 2: Management over ride controls.

S/N	DESCRIPTION	AGREE %	STRONGLY AGREED %	DISAGREE %	STRONGLY DISAGREE %
1	The organisation maintains an appropriate level of skepticism	0	79.2	9.7	11.1
2	The organisation strengthen committees that have understanding of their vision	13.9	79.2	2.8	4.2
3	The organisation brainstorm on fraud risks and loop holes	4.2	91.7	0	4.2
4	The organisation use the code of conduct to assess financial reporting culture	33.3	58.3	0	8.3
5	Your organisation ensures that the entity cultivates a vigorous whistle-blower program	4.2	55.6	18.1	22.2
6	Your organisation expose accountants who engaged in fraudulent transactions	41.7	58.3	0	0

Descriptive statistics of financial crime mitigation

Further, results presented in table Three (3) shows that 90.3% of the respondents agreed to the fact that documentary evidence affect financial crime mitigation in Nigeria public sectors.95.8% of the respondents agreed to the fact that their organisation have effective internal audit. Further result shows that 55.5% of the respondents agreed that their organisation have vigorous fraud hotlines. 79.2% of the respondents agreed that their organisation have structures for regulatory compliance strategies. Further result shows that 94.5% of the respondents agreed that their organisation do probe suspected financial performance.79.2% of the respondents agreed that their organisation have risk assessment culture. The results herein imply that Forensic accounting documentary evidence influences financial crime mitigation in Nigeria public sectors.

Table 3: Financial crime mitigation

S/N	DESCRIPTION	AGREE %	STRONGLY AGREED %	DISAGREE %	STRONGLY DISAGREE %
1	Documentary evidence affect financial crime mitigation in Nigeria public sectors.	18.1	72.2	8.3	1.4
2	The organisation have effective internal audit	48.6	47.2	4.2	**0**
3	The organisation have vigorous fraud hotlines	20.8	34.7	15.3	29.2
4	The organisation have structures for regulatory compliance strategies	16.7	62.5	8.3	12.5
5	The organisation probe suspected financial performance	54.2	40.3	1.4	4.2
6	The organisation have risk assessment culture	12.5	66.7	**0**	20.8

Ho1 - internal control system does not have effect on financial crime mitigation in Nigeria public sectors.

Decision Rule: If chi- square calculated value is greater than the chi-square critical value, then you reject your null hypothesis and otherwise, do not reject. Or if the p-value is larger than the significance level, we fail to reject the null hypothesis because we do not have enough evidence to conclude that the data do not follow the distribution with specified proportions.

Table 4: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.154[a]	3	0.000
Likelihood Ratio	29.630	3	0.000

Since our p-value (0.000) is less than the significance level (0.05), then we reject the null hypothesis and conclude that, a robust internal control system have effect on financial crime mitigation in Nigeria public sectors.

Ho2 - Forensic accounting documentary evidence does not affect financial crime mitigation in Nigeria Public sectors.

Table 5: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.657[a]	3	0.000
Likelihood Ratio	20.202	3	0.000

Since our p-value (0.000) is less than the significance level (0.05), then we reject the null hypothesis and conclude that Forensic accounting documentary evidence affect financial crime mitigation in Nigeria Public sectors.

Conclusions

Based on the findings above, the study concluded that robust internal controls, management override controls and forensic accounting documentary evidence have a based and significant effect on financial crime in Nigeria public sector. The study concluded that the use of forensic accounting significantly reduces the occurrence of financial crime cases in the public sector and, therefore, can help in preventing and detecting fraud cases in the public sectors. Forensic accounting as a financial crime-detecting weapon is one of the strategic tools for dealing with such crimes. The study also concluded that the use of forensic accounting leads to better results in the organizations. Forensic accounting is conducted to improve the understanding in detecting and reducing accounting and financial crimes. Majority of the MDAS' practices it, as one of the tools to investigate an organisation is financial statements for fraudulent activities as requested by certain parties. Forensic accounting activities such as investigative accounting and litigation support and enrich the MDAS' performance.

Recommendations

The following recommendations based on the study findings are suggested to help boost financial crime mitigation in Nigeria public sector. Internal controls need to be reviewed and rectified frequently as infrequent review may increase the fraud or rationalizations that enable management to justify, override of controls. Therefore, for effective financial crime mitigation, management override of controls should be put in check. Risk, as the fraudster can identify and exploit the weaknesses in internal control. To minimize management overrides, the study recommended the following; conducting an engagement team discussion regarding fraud risks; making inquiries of management, the audit committee, and others in the organisation to obtain views about the risks of fraud and how those risks are addressed; considering fraud risk factors such as incentives and pressures for management to override controls and attitudes.

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Effect of Forensic Accounting on Fraud Detection and Prevention in Nigeria Deposit Money Bank: A Case Study of First Bank Plc

Abstract

Financial Fraud in Nigeria's banking sector has escalated dramatically, exhibiting a worrying increase over the past decade and posing significant financial and reputational risks to the banks. Early detection and prevention of fraud is essential for banks to protect their financial integrity, customer relationships, and competitive advantage in an increasingly complex and vulnerable financial landscape. Therefore, this study examined the effect of forensic accounting on the detection and prevention of fraud in Nigerian deposit money banks. Survey methodology was employed with the use of a self-prepared questionnaire. Two Hundred copies of the questionnaire were distributed to the selected (200) staff of First Bank Nigeria Plc. The questionnaire gathered data about the forensic accounting role, forensic accounting application/adoption, forensic accounting litigation, forensic accounting investigation, and forensic accountants' investigation skills. The data obtained from the questionnaires were analyzed using Statistical Package for Social Science (SPSS) version 23. Data were analyzed based on descriptive statistics and inferential statistics. While descriptive statistics embedded frequency distribution of data which includes frequency rate, mean, standard deviation, and response percentage, inferential statistics represents the regression analysis result of the study. Results revealed that forensic accounting plays a significant role in fraud detection and prevention in First Bank Nigeria Plc. Findings also showed that forensic accounting is effective and efficient in fraud detection and prevention in First Bank Nigeria Plc in terms of forensic accounting application/adoption, forensic accounting litigation, forensic accounting investigation, and forensic accountants' skills.

Keywords: Forensic Accounting, Forensic Accountant, Fraud Detection, Fraud Prevention, Deposit Money Bank.

1.0 INTRODUCTION

In the world we live in today, fraud has become a universal financial word and its occurrence and penetration are not limited to Nigeria. Fraud occurs everywhere in the world, but it is extremely prevalent in today's cutting-edge technology, where a large number of workers who have the chance owing to the platform they access would just apply their expertise.

Fraud and financial crime have become endemic and are progressively becoming the norm in all sectors of the Nigerian economy, including the banking sector. Banks are the principal depositories of the public monetary savings, which transfer funds and deposits from economic entities with surpluses to those with deficits. The bank can be seen of as the hub of the payment system, the institution that creates and distributes money, and the conduit for the application of credit and monetary policy.

Fraud has continued to penetrate the Nigeria deposit money bank industry, despite being among Nigeria's most regulated and supervised sectors. In 2021, four Nigerian Deposit Money Banks including Access Bank, Guaranty Trust Bank, First Monument City Bank, and Wema Bank are reported to have lost N 1.77billion to fraudulent activities involving the bank's employees and consumers according to Nigeria Inter-Bank Settlement System (2021) report. The level of fraudulent activities keeps increasing yearly at an alarming rate.

It is more than sufficient to say that internal auditors are working as employees of the organization, so their independence is not guaranteed. Therefore, external auditors come into existence but the problem of fraud still persists on a regular basis. Thus, a branch of accounting called 'forensic accounting' which employs accounting, auditing and investigative skills to analyze financial information, has evolved as a means of checking fraud since the traditional accounting system and auditing have failed in the area of fraud detection and prevention. However, doubts have been expressed about its usefulness as it is often employed after a financial crime to identify the perpetrator and prevent future incidents. In addition, more concerns have been raised to check if forensic accounting is more effective than auditing in the detection and prevention of fraud as forensic accounting also involves auditing skills.

Dugguh, Omale, Alhassan, Nwogbo, Williams Felicia, and Ifidi (2021), examine the application of forensic accounting as a tool for fraud prevention in the Nigerian deposit money banks. The population is made of all the listed deposit banks in Nigeria Stock Exchange. According to the study's findings, forensic accounting significantly improves fraud detection and prevention. The study suggested that when fraud is discovered, the proper penalties should be implemented.

Subhi, Zubir, and Bayan (2020), study the effect of forensic accounting techniques and skills on detecting and combating financial corruption in Iraq. A questionnaire is used in their study to collect data from primary sources. The sample size of 63 professional accountants (external auditors) was considered in the study. The study found that utilizing forensic accounting techniques helps uncover and battle financial misconduct. The study recommended that accountants and auditors should be educated in forensic accounting and the necessary skills to practice it.

Okoye, Adeniyi, and James (2019), examine the effect of forensic accounting on fraud management on selected firms in Nigeria. With a sample size of 190 staff in selected firms in Aba, Abia State. The result of the study shows that forensic accounting has a significant influence on the detection and prevention of fraud. It also revealed that forensic litigation has no significant positive effect on the recovery of funds lost to fraud.

Bingilar, and Light (2021), examine forensic audit as a tool for fraud detection and prevention in Nigerian banks. The 27 Deposit Money Banks that are listed on the Nigeria Stock Exchange were surveyed for the study relying on secondary data generated from the Nigeria Deposit Insurance Corporation (NDIC) reports of 31st December 2019, with data ranging from 2010-2019. The study's findings showed that the number of fraud cases, the number of employees engaged in bank fraud, and the real amount of bank losses due to fraud in Nigerian DMBs are all significantly but negatively impacted by forensic audit. The study recommended that staff should be educated on the implications of perpetrating fraud in the entity, and strong internal control should be put in place, and should constantly be updated to meet the trend.

Bello, Umar, and Peter (2020) examine forensic accounting and incidence of fraud detection: evidence from Nigeria. Their study adopted Taro Yamane sampling techniques to determine a sample size of 101 from the targeted population of 135 investigators from the EFCC Operation Department. The result of the study shows that there is a significant relationship between forensic accounting personal skills, investigative techniques, and fraud detection in Nigeria and also recommended that future research in forensic accounting and fraud detection be encouraged to use a larger sample size.

Dada and Jimoh (2020), studied forensic accounting and financial crimes in Nigeria's public sector. The study found that litigation support services had a considerable detrimental impact on financial crime in Nigeria's public sector. The report advised that forensic accounting professionals be hired to conduct financial investigations and act as expert witnesses in court.

Abubakar, Abubakar, and Hyellaki (2022), assessed the effects of forensic audits on fraud detection in the Nigeria banking sector. The study acquired its data through both primary sources i.e. Questionnaires and interviews, and secondary sources i.e. textbooks, journals, and the Internet. According to the study's findings, fraud detection is significantly impacted by forensic audit. The report recommended that, in order to effectively identify fraud, deposit money bank management should conduct routine forensic audits of their operations.

Ewa, Adesola, and Eseneyen (2020) evaluate forensic accounting techniques in fraud prevention and detection in the banking sector in Nigeria. The result of the study reveals that a significant relationship exists between forensic accounting techniques application and fraud detection and prevention. The study recommended that commercial banks should mandatorily be required to acquire robust data mining software facilities as well as enhanced training on the application of data mining and its usefulness in the banking sector.

Unuigbokhai and Bagudu (2022) study forensic accounting and fraud detection control in Nigeria. The result of the study shows that forensic accounting significantly affects fraud control and regulation and forensic accounting is an effective and efficient way to decrease and check accounting fraud. The study recommended that forensic accounting be adopted into the system to eradicate economic and financial crime.

Eze and Okoye (2019), study forensic accounting and fraud detection and prevention in Imo state public sector. The results of the study reveal that there are significant relationships between forensic accounting and fraud detection and prevention. The study recommended that forensic accounting should be strengthened in the public sector.

Most of the previous researchers in Nigeria focus their studies on the impact of forensic accounting on fraud detection and prevention in the public sector and the economy at large, which cannot be generalized to other or individual sectors. However, fewer researchers have put the research in the banking sector, but none of these studies focused on the effects of forensic accounting on fraud detection and prevention in Nigeria deposit money banks using First Bank PLC as the study element, despite being the oldest and one of the largest bank in Nigeria.

Most of the researchers also suffer from the limitation of over-relying on the cross-sectional data which cannot satisfactorily address the sector-specific issues. Likewise, using the secondary source of data collection covering a short period of time ranging from 10 years and below, which is quite short in drawing a conclusion on the effect of forensic accounting on fraud detection and prevention. Few researchers that use the primary source of data, limit their study to a very small population and sampling size in generalizing on the whole banking sector.

Hence, there is a need for a comprehensive study to find out if forensic accounting can play a significant role and has an effect on the detection and prevention of fraud in the Nigeria Deposit Money Bank. Also, to determine if forensic accounting is more effective and efficient than auditing in the detection and prevention of fraud in the Nigeria Deposit Money Banks. Therefore, we have found the existence of research gaps and devoted our effort to conducting research in this direction.

The following hypotheses are designed to test the relationship between forensic accounting, and fraud detection and prevention:

Ho1: Forensic accounting does not play a significant role in fraud detection and prevention in Nigeria's Deposit Money Banks.

Ho2: Forensic accounting is not effective and efficient in the detection and prevention of fraud in the Nigeria Deposit Money Banks.

2.0 MATERIALS AND METHODS

2.1 Research Design

Research design is an outline or a scheme that serves as a useful guide to the researcher in his efforts to generate data for his study, it enables the researcher to find out the kind of survey or sampling design adopted in the study.

Therefore, for this study, survey methodology is employed in the quantitative research design approach, This enables for easier comparison and more cost-effective collecting of standardized data. Hence, it would enable the researcher to examine the relationship between forensic accounting and fraud detection and prevention in the Nigerian deposit money bank using First Bank plc as a case study.

2.2 Population of The Study

The population covered by this research work comprises four hundred staff of First Bank Nigeria plc.

2.3 Sample Size and Sampling Technique

The sampling technique employed is a simple random sampling technique. Since the population is limited to the staff who know what forensic accounting is all about and how it can assist fraud detection and prevention. Every member of the population is equally likely to be selected.

Taro Yamane method for sample size calculation is adopted to determine the sampling size:

$$n= N/ (1+N (e)^2).$$

Where n is the sample size, N is the study's population, and e is the margin of error in the calculation.

Primary sources were used to gather the data. Respondents' information was gathered using a standardized questionnaire. Closed-ended questions are included in the surveys to gather quantitative data. The questionnaire was divided into 3 sections: section A, concerned with generating demographic data, and sections B, and C, collects data relating to the study objective. Section B is used to collect data on objective I "To determine whether forensic accounting plays a significant role in the detection and prevention of fraud in the Nigeria deposit money banks", while section C is used to collect data on objective II "To find the effectiveness and efficiency of forensic accounting in the detection and prevention of fraud in the Nigeria deposit money banks.".

2.4 Methods of Data Analysis

Description and inferential statistical analysis tools are employed in this study, comprising figures and percentages to describe the data collected for this study. The researcher also used linear regression analysis in testing the formulated hypothesis and multiple regression analysis in testing the relationship among the variables. The linear regression analysis can be defined as the function approximation that represents a continuous response variable as a function of one or more predictor variables, and can also be defined as a linear approach for modeling the relationship between a scalar response and one or more explanatory variables. The responses were represented in a table with the percentages used to analyze responses to each question contained in the questionnaire.

Regression analysis was chosen to evaluate the hypotheses because it establishes the degree of correlation between the dependent variables that results from the independent variables. For the purpose of analysis, statistical software called Statistical Package for Social Science (SPSS) version 23 was used.

2.5 Decision Criterion for Validation of Hypothesis

This is to decide whether to accept or reject the hypothesis, a comparison was made between the significance level and the probability score (p-value). The decision value is as follows:

Reject Ho1, if p-value < 0.05
Accept Ho1, if p-value > 0.05

Where:
0.05 = Significance level
p-value = p-value is the probability score

2.6 Model Specification

This study adopts a multiple regression analysis model in testing the relationship among the variables. The model seeks to investigate the influence of forensic accounting on fraud detection and prevention in Nigeria's deposit money bank. The specification of this model is given below:

Y = f(X)
Y – Dependent Variable
X – Independent Variable
And X= x1, x2, x3

Where,
Y= Fraud Detection and Prevention (FDP)
X= Forensic Accounting (FA)
x1= Forensic litigation (FL)
x2= Forensic investigation (FI)
x3= Forensic accountant investigation skills (FAIS)
β0= Constant
β1, β2, β3 = Model Coefficient
eit= Error team

Functional Relationship (Multiple Regressions)

$$Y= \beta 0 + \beta 1x1 + \beta 2x2 + \beta 3x3 + eit$$
$$FDP= (FL, FI, FAIS)$$
$$FDP= \beta 0 + \beta 1FL + \beta 2FI + \beta 3FAIS + eit$$

A-Priori Expectation

It was expected that the effect of forensic accounting on fraud detection and prevention would have a positive impact on Nigerian deposit money banks.

3.0 RESULTS

Table 1: Demographic of the respondents from First Bank of Nigeria Plc

1	**Gender**	**Frequency**	**Percentage**
	Male	120	60.0
	Female	80	40.0
	Total	**200**	**100.0**
2	**Age**		
	18-25 years	46	23.0
	26-35 years	98	49.0
	36-45 years	30	15.0
	46-55 years	20	10.0
	Above 55 years	6	3.0
	Total	**200**	**100.0**
3	**Educational level**		
	Below diploma	0	0.0%
	Diploma	42	21.0
	First degree	136	68.0
	Master and above	22	11.0
	Total	**200**	**100.0**
4	**Number of years**		
	0-2	30	15.0
	3-5	60	30.0
	6-10	80	40.0
	11-15	22	11.0
	16 and above	8	4.0
	Total	**200**	**100.0**

Table 1 above represents the result of analysis regarding demographic data including gender, age, education level, and number of years. The percentages of male and female respondents are 60.0% and 40.0% of the total respondents respectively. This deduces that there are more male respondents than female respondents in First Bank Nigeria Plc.

The age range analysis resulted in 23.0% for those within 18-25 years, 49% for those within 26-35 years, 15% for those within 36-45 years, 10% for those within 46-55 years, and 3% for those that are above 55 years.

Furthermore, table 1 revealed that 21% of the total respondents have obtained diploma certificates, 68% hold first-degree certificates, and 11% have master's degree certificates and others. By implication, first-degree holders dominated First Bank Nigeria Plc.

Lastly, 15%, 30%, 40%, 11%, and 4% of the total respondents have acquired 0-2 years of experience, 3-5 experience years, 6-10 years of experience, 11-15 experience years, and 16 and above years of experience respectively. Hence, the majority of the respondents have served First Bank Nigeria Plc for 6-10 years.

Table 2: Role of forensic accounting in the prevention of fraud

	Statements	N	Mean value	Std. Deviation	Highest Percent (%)	Inference
1	Detecting and preventing fraud is the main objection of Forensic accounting.	200	4.75	0.434	75.0%	Strongly agree
2	Forensic accounting brings significant improvement in the quality of fraud detection and prevention	200	4.39	0.895	60.0%	Strongly agree
3	Nigeria deposit money banks can design an integrated approach to preventing and controlling fraud and corruption within the workplace through an established service of professional forensic accountants	200	4.17	1.061	50.0%	Strongly agree
4	Fraud and financial crime are now an endemic that is gradually becoming a normal way of life in all sectors of Nigeria's economy and the banking sector is not exempted	200	4.88	0.383	90.0%	Strongly agree
5	The company has recorded a signification decline in fraudulent activities since the introduction of forensic accounting	200	3.40	1.322	40.0%	Agree

Table 2 presents the analysis of questions on forensic accounting's role in fraud prevention and detection in Nigeria's deposit money bank precisely First Bank Nigeria Plc. 75.0% of the total respondents strongly agreed that the main objection of forensic accounting is to detect and prevent fraud, on 4.75 mean and 0.434 SD. Similarly, 60% of the total respondents strongly agreed that forensic accounting brings significant improvement in the quality of fraud detection and prevention, 4.39 mean and 0.895 SD were recorded for this statement.

In the same vein, an average of the total respondents (50%) strongly agreed that an integrated approach for the prevention and control of fraud and corruption in the workplace can be designed by Nigeria deposit money banks through the establishment of professional forensic accountants, this is obtained on 4.17 mean and 1.061 SD. Also, 90% (where the mean is 4.88 and SD is 0.383) of respondents strongly agreed that fraud and financial crime are endemic in all sectors of Nigeria's economy and most importantly banking sector.

Finally, 40% of the total respondents agreed that First Bank Nigeria Plc has recorded a significant decline in fraudulent activities since the introduction of forensic accounting with a 3.40 mean and 1.322 SD.

Table 3: Effectiveness and efficiency of forensic accounting in the prevention of fraud

	Statements	N	Mean value	Std. Deviation	Highest Percent (%)	Inference
6	Forensic accounting is a new and rapidly expanding discipline of accounting that focuses on strategies to detect and prevent financial fraud and other white-collar crime	200	3.67	1.220	39.0%	Agree
7	There are significant differences between forensic accounting and traditional auditing	200	3.18	1.335	33.5%	Agree
8	The increasing need for forensic accounting in the Nigeria deposit money bank industry results from the complexity of modern-day banking, with a large volume of complex data	200	4.11	1.184	50.0%	Agree
9	Forensic accounting can identify misappropriated assets and locate diverted assets.	200	3.87	0.816	50.0%	Agree
10	Forensic accounting improves financial statement credibility	200	4.20	0.781	55.0%	Agree

Table 3 above comprises five statements (6-10) about the contribution of forensic accounting to fraud prevention and detection in Nigeria deposit money banks. Statement 6 achieved a 3.67 mean, 1.220 SD, and 39.0% of total respondents agreed that forensic accounting expands rapidly in every discipline of accounting that focuses on the strategies to detect and prevent financial fraud and other white-collar crime.

Statement 7 of Table 3 resulted in a 3.18 mean, 1.335 SD and 33.5% of the total agreed who agreed that there are significant differences between forensic accounting and traditional auditing. Regarding statement

8, the analysis yielded a 4.11 mean, 1.184 SD and 50% of total respondents agreed that the complexity of modern-day banking as a result of a large volume of complex data instigates the increased need for forensic accounting in Nigerian deposit money banks.

Furthermore, statement 9 obtained a mean of 3.87 and SD of 0.816 and 50% of total respondents agreed that forensic accounting can be used to identify misappropriated assets and locate diverted assets. Finally, statement 10 achieved a 4.20 mean, 0.781 SD and 55% of total respondents agreed that forensic accounting improves financial statement credibility in Nigeria's deposit money bank.

Table 4: Effectiveness and efficiency of forensic litigation in the prevention of fraud

	Statements	**N**	**Mean value**	**Std. Deviation**	**Highest Percent (%)**	**Inference**
11	The accounting and legal department of the business has a well-funded and staffed litigation support unit	200	3.68	1.116	36.5%	Agree
12	The company has seen a notable recovery of money lost to fraud after forensic litigation measures were put in place	200	3.45	1.083	35.0%	Undecided
13	The company employes the services of litigation consultants in prosecuting fraud charges involving employees	200	4.13	0.772	60.0%	Agree
14	The company's forensic investigators' recommendations on fraud prevention techniques have resulted in the detection of some fraudulent activities by employees	200	4.21	0.959	50.5%	Strongly agree
15	Recommendations on fraud prevention strategies proposed by the company's forensic investigators have led to red flagging of some fraudulent behavior by staff	200	4.69	0.606	74.5%	Strongly agree

Table 4 above comprises five statements (11-15) about the contribution of forensic litigation to the prevention and detection of fraud in Nigeria deposit money banks. Statement 11 however achieved a 3.68 mean, 1.116 SD, and 36.5% of total respondents agreed that First Bank Nigeria Plc has a well-funded and staffed litigation support unit within the accounting and legal department.

Statement 12 of Table 4 resulted in 3.45 mean, 1.083 SD and 35% of the total are undecided on the perspective of record of appreciable recovery of funds lost to fraud by First Bank Nigeria Plc since the implementation of forensic litigation measure. As regards statement 13, the analysis resulted in a 4.13 mean, 0.772 SD and 60% of total respondents agreed that First Bank Nigeria Plc utilized the services of litigation consultants in the persecution of fraud cases involving staff.

Moreover, statement 14 obtained a 4.21 mean, 0.959 SD and 50.5% of total respondents strongly agreed that First Bank Nigeria Plc incurs significant litigation expenditures in the process of fraud litigations involving it. Lastly, statement 15 achieved 4.69 mean, 0.606 SD, and 74.5% of total respondents agreed that First Bank Nigeria plc's forensic investigators' recommendations on fraud prevention techniques have resulted in the detection of some fraudulent activities by employees.

Table 5: Effectiveness and efficiency of forensic investigation in the prevention of fraud

	Statements	**N**	**Mean value**	**Std. Deviation**	**Highest Percent (%)**	**Inference**
16	Forensic investigation can serve as a deliberate policy in the bank to prosecute all fraud perpetrators in court.	200	4.37	0.533	58.0%	Agree
17	Forensic investigation traces funds, identifies assets conducts asset recovery, and performs diligence reviews	200	3.90	1.027	66.0%	Agree
18	More fraud has been detected in the company through forensic investigation since implementation than before	200	3.47	0.992	40.0%	Undecided
19	It is necessary for forensic investigation to be used for effective detection of fraud occurrence.	200	3.90	1.200	41.5%	Agree
20	Forensic investigation is carried out whenever traditional auditing detects an irregularity or any form of fraud occurrence	200	4.74	0.523	77.5%	Strongly agree

Table 5 houses five statements (16-20) about the contribution of forensic investigation to the prevention and detection of fraud in Nigeria deposit money banks. However, statement 16 achieved a 4.37 mean, 0.533 SD, and 58% of total respondents agreed that forensic investigation serves as a deliberate policy in the bank to persecute all fraud perpetrators in court.

Furthermore, statement 17 attained a 3.90 mean, 1.027 SD and 66% of the total agreed to the fact that funds tracing, assets identifications, asset recovery conduct, and diligence review operation constitute the purpose of forensic investigation in deposit money banks of Nigeria. Concerning statement 18, the analysis result showed 3.47 mean, 0.992 SD, and 40% of total respondents are undecided about the fact that despite the introduction of forensic investigation, more fraud has been detected in First Bank Nigeria Plc since implementation than even before.

More so, statement 19 obtained a 3.90 mean, 1.200 SD, and 41.5% of total respondents agreed that the use of forensic investigation is essential for the effectiveness of curbing fraud detection occurrence. Finally, statement 20 achieved 4.74 mean, 0.523 SD, and 77.5% of total respondents strongly agreed that forensic investigation is carried out whenever traditional auditing detects irregularity or any form of fraud occurrence in deposit money banks of Nigeria.

Table 6: Effectiveness and efficiency of forensic accountant investigation skill in the prevention of fraud

	Statements	**N**	**Mean value**	**Std. Deviation**	**Highest Percent (%)**	**Inference**
21	It is necessary for forensic accounting skills and techniques to be used for the prevention and detection of fraud occurrence.	200	4.00	0.827	61.5%	Agree
22	The auditor does not possess the required skills to enable them to tackle complex modern fraud, so forensic accountant investigative skill is required.	200	3.25	1.209	31.5%	Agree
23	Forensic accounting investigation skills are more effective than auditing in fraud detection and prevention	200	3.63	0.968	50.5%	Agree
24	The forensic accounting department has a good investigation skill lacked by auditors	200	3.81	0.901	56.5%	Agree
25	Investigation skills are one of the most required skills a forensic accountant must possess.	200	3.75	1.173	36.5%	Agree

Table 6 contains five statements (21-25) about the contribution of forensic accountants' investigation skills to preventing and detecting fraud in Nigerian deposit money banks. Statement 21 achieved a 4.00 mean, 0.827 SD, and 61.5% of total respondents agreed that the use of forensic accounting skills and techniques becomes necessary for fraud prevention and detection in Nigeria deposit money banks.

Statement 22 obtained 3.25 mean, 1.209 SD and 31.5% of the total agreed to the fact that the requirement of forensic accountant investigative skills is owing to the inability of auditors to possess the required skills to enable complex modern fraud tackling in deposit money banks of Nigeria. Similarly, statement 23 result revealed a 3.63 mean, 0.968 SD, and 50.5% of total respondents agreed that forensic accounting investigation skills are more effective than auditing in fraud detection and prevention.

Statement 24 resulted in a 3.81 mean, 0.901 SD and 56.5% of total respondents agreed that the forensic accounting department in First Bank Nigeria Plc has good investigation skills not showcased by auditors. Lastly, statement 25 achieved a 3.75 mean, 1.173 SD and 36.5% of total respondents agreed to the fact that investigation skills are one of the required skills a forensic accountant should possess.

Testing of Hypotheses

Hypothesis One

Table 7: Forensic accounting does not play a significant role in fraud detection and prevention in Nigeria's Deposit Money Banks

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**F Change**	**Sig. F Change**
1	.978[a]	.957	.957	4.481	4433.619	.000

a. Predictors: (Constant), RFA

For hypothesis 1, it's recorded that the independent variable (forensic accounting role) has a 97.8% relation rate with the dependent variable (fraud detection and prevention) as given by Regression result (R). Also, the Adjusted R Square resulted in 95.7% which is also high revealing a positive and significant relationship between forensic accounting and fraud detection and prevention. F-change (4433.619) identified that forensic accounting is statistically significant in fraud detection and prevention.

Significant F change resulted in 0.000 which is less than the level of significance (0.05), therefore the null hypothesis is rejected implying that forensic accounting plays a significant role in fraud detection and prevention in Nigeria's Deposit Money Banks.

Hypothesis Two

Table 8: Forensic accounting is not effective and efficient in the detection and prevention of fraud in the Nigeria Deposit Money Banks

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Sig. F Change
1	.995[a]	.991	.991	2.102	20856.111	.000
2	.995[a]	.989	.989	2.225	18585.052	.000
3	.986[a]	.973	.973	3.573	7085.258	.000
4	.989[a]	.977	.977	3.253	8588.327	.000

a. Predictors: (Constant), FAA, FAL, FAI, FAS

The test of hypothesis 2 covered four different factors namely; forensic accounting adoption, forensic accounting litigation, forensic accounting litigation, forensic accounting investigation, and forensic accountants investigation skill. Between forensic accounting adoption and fraud detection and prevention, analysis results achieved R (99.5%), R-Square (99.1%), Adjusted R Square (99.1%), F-Change (20856.111), and Significant F Change (0.000 < 0.05), hence, forensic accounting adoption has a significant effect on fraud prevention and detection in Nigeria deposit money banks.

Also, the analysis revealed that R = 99.5%, R-Square = 98.9%, Adjusted R Square = 98.9%, F-Change = 18585.052, and Significant F Change = 0.000 < 0.05, therefore, forensic accounting litigation has a significant effect on fraud prevention and detection in Nigeria deposit money banks.

Furthermore, the analysis resulted in R = 98.6%, R-Square = 97.3%, Adjusted R Square = 97.3%, F-Change = 7085.258, and Significant F Change = 0.000 < 0.05, thus, forensic accounting investigation has a significant effect on fraud prevention and detection in Nigeria deposit money banks.

Lastly, the analysis showed that R = 98.9%, R-Square = 97.7%, Adjusted R Square = 97.7%, F-Change = 8588.327, and Significant F Change = 0.000 < 0.05, hence, forensic accountants' investigation skill has a significant effect on fraud prevention and detection in Nigeria deposit money banks.

Generally, the null hypothesis is rejected to conclude that forensic accounting is effective and efficient in the detection and prevention of fraud in the Nigeria Deposit Money Banks.

Coefficient of Determination

Table 9: Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-19.651	1.818		-10.809	.000
	RFA	5.521	.083	.978	66.585	.000
	FAA	4.263	.030	.995	144.416	.000
	FAL	5.090	.037	.995	136.327	.000
	FAI	5.449	.065	.986	84.174	.000
	FAS	4.415	.048	.989	92.673	.000
a. Dependent Variable: FDP						

The coefficient of determination table enlightens the status of the correlation between dependent variables and independent variables. Under normal circumstances, the sig-value of the coefficient of determination usually falls between 0.0 and 1.0, however, the closer the sig-value to 0.0, the lesser the correlation between dependent and independent variables is and the closer the sig-value to 1.0, the stronger the correlation between dependent and independent variables is.

Obviously, a perfect coefficient (0.000) was recorded between forensic accounting role and fraud prevention and detection likewise there exists a perfect coefficient (0.000) between forensic accounting effectiveness and efficiency factors and fraud prevention and detection.

Taking absolute value (t) into consideration, the coefficient of determination as regards to correlation of independent variables on the dependent variable can be given as thus:

FDP = -10.809 + 66.585RFA + 144.416FAA + 136.327FAL + 84.174FAI + 92.673FAS + ε

Correlations

Table 10: Correlations

Control Variables			RFA	FAA	FAL	FAI	FAS
FDP	RFA	Correlation	1.000				
		Significance (2-tailed)	.				
		df	0				
	FAA	Correlation	-.109	1.000			
		Significance (2-tailed)	.126	.			
		df	197	0			
	FAL	Correlation	-.263	.093	1.000		
		Significance (2-tailed)	.000	.190	.		
		df	197	197	0		
	FAI	Correlation	-.391	-.398	-.119	1.000	
		Significance (2-tailed)	.000	.000	.095	.	
		Df	197	197	197	0	
	FAS	Correlation	-.512	-.257	-.268	-.122	1.000
		Significance (2-tailed)	.000	.000	.000	.085	.
		Df	197	197	197	197	0

A perfect correlation (1.000) among these variables was recorded. This implies that there is the categorical relationship among the variables employed for this research work.

4. DISCUSSION

4.1 Forensic Accounting Role in Fraud Prevention and Detection in Nigeria Deposit Money Banks

It's hypothesized that there is a positive and significant relationship between the role played by forensic accounting and fraud detection and prevention in Nigerian deposit money banks because the R result is 97.8% and Sig F Change is 0.000 < 0.05. This deduces that the prevalence of fraud becomes minimized as a result of the application of forensic accounting in deposit money banks of Nigeria. This deduction is in line with the study of Yusheng *et al*., (2019), evaluating postgraduate students' awareness of forensic accounting as a tool for fraud detection and prevention. The study found that forensic accounting plays a significant role in fraud detection and prevention but most of the international postgraduate students were unaware of forensic accounting and those that were aware had a very low level of awareness of the subject.

Additionally, the findings of this study also align with Okoye *et al*., (2019) who examined the effect of forensic accounting on fraud management in selected firms in Nigeria and found that forensic accounting has a significant influence on the detection and prevention of fraud

Furthermore, Micah (2022) in his study titled 'Effects of Forensic Accounting on Fraud Detection and Prevention in Business Organizations in Nigeria' revealed that forensic accounting positively influences the operating efficiency of business organizations in Nigeria. Moreover, improvement in the use of forensic accounting is essential for developing internal control of business organizations that focus on improving operational efficiency.

4.2 Effectiveness and Efficiency of Forensic Accounting in the Detection and Prevention of Fraud in Nigeria Deposit Money Banks

It's hypothesized by model summary 2 that forensic accounting is effective and efficient in the detection and prevention of fraud in Nigeria deposit money banks as regards forensic accounting adoption (R = 99.5 and Sig F change = 0.000), forensic accounting litigation (R = 99.5 and Sig F change = 0.000), forensic accounting investigation (R = 98.6 and Sig F change = 0.000) and forensic accountant's skill (R = 98.9 and Sig F change = 0.000). This implies that fraud prevention and detection are strengthened in Nigerian deposit money banks by the consistency of forensic accounting adoption, the presence of forensic accounting litigation, proper investigation, and the availability of skilled forensic accountants.

In corroboration with the inferences made above, the study of Ewa *et al*., (2020), 'An evaluation of forensic accounting techniques in fraud prevention and detection in banking sector in Nigeria' revealed that there exists a significant relationship between the application of forensic accounting techniques and fraud detection and prevention.

Moreover, Bello *et al*., (2020) in their study, 'Forensic Accounting and Incidence of Fraud Detection: evidence from Nigeria' found that there is a significant relationship between forensic accountant's skills, investigative techniques, and fraud detection in Nigeria.

Regarding the inclusion of forensic accounting litigation, the findings of Dada and Jimoh (2020) who examined 'forensic accounting and financial crimes in Nigeria's public sector' revealed that litigation support service has a significant but negative effect on financial crime in Nigeria's public sector.

Contrarily, Okoye *et al.*, (2019) in their study 'The Effect of Forensic Accounting on Fraud Management in Selected Firms in Nigeria' revealed that forensic litigation has no significant effect on the recovery of funds lost to fraud.

This study reveals that forensic accounting proves to be a highly effective and efficient tool in detecting and preventing fraud in Nigeria's deposit money banks corresponding to the study of Unuigbokhai and Bagudu (2022), forensic accounting and fraud detection control in Nigeria. The results of the study show that forensic accounting significantly affects fraud control and regulation and also forensic accounting is an effective and efficient way to decrease and check accounting fraud.

5. CONCLUSION

Given how common fraud is in financial accounting systems in the current economic climate, financial accounting fraud detection has emerged as a crucial topic for research, academia, and industry as a whole. Fraud detection and prevention are greatly impacted by forensic accounting's ability to provide efficient tools for identifying unauthorized transactions and misdirected illicit practices. In today's commercial world, fraudulent activities are genuine and common. We must halt this trend before it's too late.

However, this study set out to examine the effect of forensic accounting on fraud detection and prevention in Nigeria deposit money banks while precisely intending to determine whether forensic accounting plays a significant role in the detection and prevention of fraud and find the effectiveness and efficiency of forensic accounting techniques in the detection and prevention of fraud in Nigeria deposit money banks.

Consequent to several findings from the research conducted, this study put forward the recommendation that deposit money banks in Nigeria should enhance their forensic accounting practices in order to deter and eradicate fraudulent activities and appropriate sanctions should be applied when fraud is detected.

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