Quest Journals
Journal of Research in Business and Management
Volume 10 ~ Issue 6 (2022) pp: 27-36
ISSN(Online):2347-3002
www.questjournals.org

Research Paper

Role of Forensic Audit Tools in Fraud Detection in Nigeria

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Abstract
This study examined the impact of forensic audit tools on fraud detection in Nigeria public sector with particular reference to federal parastatals. Specifically the study investigated the factors that contributed to the occurrence of fraud; determine the level of usage of forensic audit tools (skills, knowledge and experience}; assess the effect of some control variables (political, institutional and technological factors) on fraud detection and ascertained the impact of forensic audit tools on fraud detection in Nigerian federal parastatals. Data for the study were sourced through both primary and secondary sources and were analysed using mean, standard deviation, ANOVA, and multiple regression analysis. The results of the study finally confirmed that forensic audit tools have positive significant impact on fraud detection, R-square was 0.477, suggesting that about 48% of the variation in the fraud detection could be attributed to the combine effects of all the variables considered in this study while the remaining 52% can be attributed to other variables not captured in this study.
Keywords: Forensic Audit, Fraud, Parastatals, Tools

Received 05 June, 2022; Revised 18 June, 2022; Accepted 20 June, 2022 *© The author(s) 2022.*
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I. Introduction

The pervasive and malignant effects of fraud and corruption on the lives of the citizens in Nigeria cannot be overemphasised. Large proportions of the citizen live below the acceptable standard of living. Recent report by The World Poverty Clock shows Nigeria has overtaken India as the country with the most extreme poor people in the world, with 86.9 million now living in extreme poverty which represent 43% of 200 million estimated populations. No thanks to corruption of the present and past leaders, the struggle to lift more citizens out of extreme poverty is an indictment on successive Nigerian governments which have mismanaged the country's vast oil riches through incompetence and corruption. As a consequence the mission to end extreme poverty globally is already at risk. Nigeria has now taken over as the nation with the highest number of extremely poor people, as shown by the report of Brookings Institution. According to the report, the number of Nigerians in extreme poverty increases by six people every minute, which now crowns Nigeria as the world poverty headquarters. In March 2018, the International Monetary Fund had said Nigerians are getting poorer saying there is a need for coherent and comprehensive economic reforms (Vanguard June 25, 2018).

Even though no country is immune to this, the Transparency International annual corruption perception index highlights this lamentable progress, stating that majority of countries in the world is making little or no progress in ending corruption (Adams & Ferreira, 2007). The PricewaterhouseCoopers (PwC) global Economic Crime and Fraud Survey (2018) found that 49% of global organisations said that they had been victims of fraud and economic offences.

Over the years, there have been several cases of accounting and financial scandals around the world; for instance, Jacob Zuma Scandal of 2018 in South Africa, Maina N195billion Pension Scandal, Stella Oduah N255m bulletproof car scandal, $15m private jet arm scandal, which had attracted criticisms in both public and private sectors in Nigeria (Abdullahi & Senekal, 2012). In fact, fraud has become a world-wide phenomenon that affects all continents and all sectors of the economy, and most organisations may face this regardless of their size, industry or country. If an organisation has valuable properties (like cash, goods, information, or services), then fraud may be attempted. It is often high-profile frauds in large multi-national organisations that are reported in the media and the smaller organizations may feel they are unlikely to be a target of fraudsters. Periodically, the latest major fraud hits the headlines as other organisations sit back and watch, telling themselves that it could not happen here. But the reality is that fraud can happen anywhere and anytime. While only relatively few major frauds are picked up by the media, huge sums of money are lost by all kinds of businesses as a result of the high number of smaller frauds that are committed.

The United Nations defined corruption as an umbrella term for a number of delinquent behaviours, including: embezzlement; fraud; bribery; cronyism and nepotism; money laundering; extortion; abuse of position; and improper political funding. The term 'fraud' essentially involves using deception to make a personal gain for oneself and create a loss for another. Fraud is best described as a conscious and deliberate action by a person or group of persons with the intention of altering the truth or fact for selfish personal gains, and it has now become the most single veritable threat to the growth of any economy. Fraud is inversely related to economic development. Although the legal definitions of fraud may vary from one country to another, most of this is still based around these general themes.

Enofe, Okpako and Atube (2013) claimed that defining fraud is as difficult as identifying it. No definite and never changing rule can be laid down as a general proposition in defining fraud as it includes surprise, trick, cunning and unfair ways by which another person is cheated. Fraud is a legal term that refers to the intentional misrepresentation of the truth in order to manipulate or deceive a company or an individual. David (2005) stated that fraud is not a possibility but a probability. He also explains that fraud can be better prevented if decisions are made by a group and not an individual. Examples of fraud commonly seen include activities such as, embezzlement, conspiracy, money laundering, theft, extortion, bribery and corruption. According to the Association of Certified Fraud Examiners, ACFE (2010), there are three main categories of fraud that affects organizations: asset misappropriations, fraudulent financial statements, and corruption. Surveys in the past have shown that "asset misappropriation is the most widely reported type of fraud in India, although corruption and bribery are growing at an alarming rate." The risks of fraud may only be increasing, as we see growing globalization, more competitive markets, rapid developments in technology, and periods of economic difficulty.

As a result of this, the initial decade of the new millennium has been marked by some highly publicized corporate collapses, high level of embezzlement in the public sector and even more cases of financial fraud and deceit (Gbegi & Adebisi, 2014). The public has witnessed a number of well-known accounting scandals and bankruptcy in both developed and developing countries involving large and prominent companies such as Sunbeam, Kmart, Enron, Global Crossing (USA), BCCI, Maxwell, Polly Peck (UK), HIH Insurance (Australia) PT Bank Bali, and Sinar Mas Group (Indonesia), Bangkok Bank of Commerce (Thailand), United Engineers Bhd (Malaysia), Samsung Electronics and Hyundai (Korea) etc.

In Nigeria, the cases of fraud have been on the increase as more corporate bodies and government parastatals are continually being investigated. The change made in 2006 on Board members in Cadbury Plc Nigeria was as a result of doctoring of accounts to cover up certain inadequacies and unscrupulous deals perpetuated by the management. Likewise, the corporate failures of most Nigerian Banks Chief Executive Officers (CEOs) and investigations into their activities by the Anti- graft agency, (Economic and Financial Crimes Commission (EFCC)) are largely due to fraudulent financial reporting. In 2009, the Central Bank of Nigeria (CBN) sacked five (5) Bank Managing Directors and Executive Directors for mismanagement and alleged fraud (Crumbley, 2013). This has led to the involuntary combination of banks, such as Intercontinental bank, Oceanic Bank, and Fin Bank.

In 2013, the House of Representatives Committee on Finance accused Deposit Money Banks in the country of sundry sharp practices, including tax evasion, non remittance of government revenue and outright falsification of their accounts. In a report released on the 25th of August 2013, the committee said it had uncovered a lot of discrepancies in the data submitted to it by the banks including the outright refusal to present documentary evidence of revenue remittances, blatant violations of existing laws, self exemption from existing rules, false declaration and manipulation of financial information (Ahmed & Duellman, 2007). Preliminary findings showed that the published audited accounts of some banks were at variance with the figures the banks submitted to the committee during investigation. It was then revealed that many banks blatantly engage in the creative accounting technique of inflating their operating costs to reduce exposure to taxes. In other words, over the years, the Nigerian government lost billions of naira in fraud and under hand dealings corruptly designed by some banks to evade taxes (Okoye & Gbegi, 2013). The effects of this large-scale corruption on the nation's economy are unquantifiable. Further, some banks also created exemption rules for themselves in total disregard for the provisions of extant tax laws, particular violations of the stamp duty, withholding tax and value added tax (VAT) laws.

Oil subsidy probes in Nigeria which revealed that between 2007 and 2009, the Nigerian National Petroleum Corporation (NNPC) over deducted funds in subsidy claim to the tune of N28.5billion naira calls for concern (Oboh, 2012). However, the Auditor-General of the Federation admitted some anomalies in the operations of Federal Inland Revenue Services (FIRS). According to him, the audit examination of the accounting records maintained for the Federation Account of FIRS revealed that the collecting banks were in the habit of late remittance of actual collection to the CBN thereby contravening the agreement between FIRS and collecting banks. Also, there was no documentary evidence to authenticate the payment of the penalties and interests amounting to N172, 655 million to the Federation account in 2009. The Auditor-General added that some money generated from over recovery was not remitted to the Federation Account (Oboh, 2012). In the case of Nigeria Custom Services (NCS), the report states “audit examination of the records maintained for the Federation Account by the Nigeria Custom Services (NCS) revealed discrepancies between the figures of revenue obtained from the customs, and the figures of revenue remitted to the federation account by Nigeria Custom Services” (Orkura, 2009). The discrepancies arose from figures of nine months, which indicated that NCS remitted less than the revenue collected during the period to the government. Thus, the figures for the three months March, October and November 2016 indicated that NCS remitted less than the revenues collected during the period to the Federation Account, which gave a total net difference of N11.122 billion (Orkura, 2009).

These events have severe negative consequences on Nigeria, ranging from negative economic impact to negative National image (Abdullahi & Senekal, 2012). The pioneer chairman of Nigeria’s anti-graft agency, Economic and Financial Crime Commission (EFCC), Nuhu Ribadu, is among eight individuals and organisations recognised globally for their role in curtailing corruption at an event held in December 2018 in Putrajaya, Malaysia. Abdullahi and Senekal (2012) viewed improving the foundations of leadership, institutions and individuals as the key requirements for anti-corruption success in any nation, saying “If things are not done in the right way, cutting corners will always continue.” His fearless work has resulted in the prosecution of a number of prominent politicians.

Looking at the frauds in Nigeria, in each of the cases the perpetrators are the people at the helms of affairs**.** Ojeme (2010) gave several examples like, the aviation scam of N5.6 billion in 2009 which was perpetrated by the then Minister of Aviation, the N2 billion Bayelsa State frauds in 2010 perpetrated by the then Bayelsa State Commissioner of Finance, the State Accountant General, the State’s Director of Treasury, and the Director of Finance. The Kogi State’s =N=1.9 billion scams committed by commissioners for Local Governments and Chieftaincy Matters, and Agriculture respectively, and the Local Governments Chairmen. According to Ojeme (2010) the capital market fraud (share cloning) which started in 2002 was perpetrated by the executives of Bankolans Investment Limited. From 2009-2010, Nigeria lost N13.8 billion to various financial scams (Bacon & Brown, 2014; Oboh, 2012). What all these tend to expose is that there is a management or operational problem in the Nigeria public sector in the area of financial or accounting control. Thus, it is very obvious to see how devastatingly frauds have compromised the administrative competence, performance capacity and general credibility of the public sector. Initial estimates of major projects become little fractions of ultimate costs paid; original cash projections produce less than half of the benefits expected and projects which seemed technically feasible and economically viable, turned out to become white elephant project if not abandoned, with serious implications for growth and development.

In a survey conducted by Baysinger and Hoskisson (2008), it was discovered that the highest number of fraud perpetrators came from employees who represented about 50%. These employees were found to be among those in non-management cadre. In 2009, this category of fraud perpetrators that is employees, in contrast, only represented about 34%. These figures are alarming to the government and the management, as there was an increase of 16% in 2013. The second category of fraud perpetrators were customers, followed by management, each category represented about 18% respectively. Other fraud perpetrators identified were service providers (8%) and suppliers (6%). The report also highlighted that theft of outgoing funds was the highest reported category of fraud at 67% in 2013 compared to 57% in 2009 survey. Ranking second was theft of physical assets at 58%, followed by theft of incoming funds at 34%. On an individual basis, the most common types of fraud were theft of cash and cash receipts (26%), followed by false invoicing (16%) and theft of inventory (13%) according to Baysinger & Hoskisson, (2008). These events have spurred the interest of scholars in forensic auditing as an antidote to this menace that has been seen as a normal way of life.

Conventional (traditional) audit has failed in several areas and this necessitates the emergence of forensic audit. The failure of conventional audit are caused by many variables among which are auditor independence impairment, outdated audit training, pressures, and the difference in the expectation of users of audited account and the responsibility of conventional auditor. (Olagunju & Leyira 2012) The increasing spotlight on corporate ethics and fraud has resulted in a demand for accountants who have sufficient training and investigative skills to conduct investigations into financial crime in the workplace (Lawrence & Byron 2013).

Forensic accountants are generally accountants or auditors who by virtue of their attitudes, attributes, skills, knowledge, and experience are experts at detecting and documenting fraud in accounting and financial transactions. The forensic accountant interview a wide range of company personnel, from the clerical staff to the senior management, as necessary. Based on these interviews, as well as other observations, the examiner will start to identify red flags and design follow up procedures to address the suspicions and/or high risk areas within the organisation. A forensic audit report of findings is a fact-based document that may detail internal control weaknesses, alleged acts of misconduct, and the magnitude of the alleged loss. In certain circumstances, the forensic audit report may even include recommendation to improve the identified weakness or gaps in internal controls. All these are the improvement on the conventional audit and some of the reasons forensic audit is gathering support in recent time.

Forensic auditing is a rapidly growing field of accounting that describes the engagement results from actual or anticipated dispute or litigations. Forensic means suitable for use in a court of law. Forensic Accounting is an investigative style of accounting used to determine whether an individual or an organisation has engaged in any illegal financial activities. Association of Institute of Certified Public Accountants (AICPA's, 2009) stated that 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. Theoretically, Forensic auditing is said to bring significant improvement in the quality of fraud detection. This study seeks to provide empirical evidence–on the hypothesis link between forensic audit tools and fraud detection as it is obvious that the magnitude of occurrence of fraud in the Nigerian Federal Parastatals has gone beyond the scope of internal and statutory audit.

II. Literature Review

Theoretical Review

Experts over time have attempted to formulate theories that explain the mind set of fraudsters. Unless Forensic Auditors understand the way the fraudster thinks, they may not be able to keep one step ahead of the fraudster. These include among others: white collar crime theory, the operant condition theory and fraud triangle theory.

Edwin H. Sutherland was the pioneer of white collar crime theory which became part of the English language when he gave a Presidential Address to the American Sociological Society in 1939. Sutherland's talk, "The White Collar Criminal", rejected traditional theories of crime which blamed poverty, broken homes, and disturbed personalities as the source of committing white collar crime. He noted that many of the law breakers in business were far from poor, from happy family backgrounds, and all too mentally sound. After ten years of further research, Sutherland published White Collar Crime (Bologna & Lindquist, 1987). A revised version was published in 1993. Sutherland defined white collar crime as "a crime committed by a person of respectability and high social status in the course of his occupation." Sutherland called attention to the fact that crimes were not committed only by members of the lower class but including those of the upper class.

The Operant Condition Theory was postulated by Skinner B. F. He asserts that behaviour is determined by the environmental consequences it produces for the individual involved (Bello, 2001). This implies that, behaviour that produces desirable consequences will increase in frequencies (Beasley, 1996). The reverse will therefore be the case when the behaviour produces undesirable consequences. Behaviour therefore operates on the premise of reinforcing or punishing results. Conclusively, Bozkurt (2003) posited that if criminal activities are rewarding (prestige, money or feeling of adequacies) there will be tendencies of continual increase of such crimes while the reverse will be the case when the crimes are punished by arrest or shunned. Thus, this study aims to determine the role forensic accounting will play in ensuring crimes are punished in order to reduce its occurrences.

Cressey (1919-1987) was a student of Sutherland who builds on the initial works of the latter, to set forth the Theory of the Fraud Triangle, Cressey's work focuses on embezzlers whom he called 'trust violators'. His hypothesis states that:

Trusted persons become trust violators when they conceive of themselves as having a financial problem which is non-shareable, are aware this problem can be secretly resolved by violation of the position of financial trust, and are able to apply their own conduct in situation verbalisations which enable them to adjust their conceptions of themselves as trusted persons with their conceptions of themselves as users of the entrusted funds or property (Cressey, 1973 cited by Coenen, 2005)

The fraud triangle is a model for explaining the factors that cause someone to commit occupational fraud. It consists of three components which together, lead to fraudulent behaviour:

Fig. 2.1 Fraud Triangle

Source: Adopted from Donald R. Cressey, *Other People's Money* (Montclair: Patterson Smith, 1973)

Review of Empirical Studies

The inquisitiveness to proffer lasting panacea to the ever-skyrocketing fraudulent act in the public sector has given spur to increasing the debate on whether or not forensic accounting can serve as an antidote to this menace which has become the order of the day in our dear country. This is viewed in the global and Nigeria perspectives.

Forensic Audit Tools and Fraud Detection: Global Perspective

In a study carried out by Moyes and Baker (2009) on Application of Forensic Auditing Skills in Fraud Mitigation: A Survey of Accounting Firms in The Country Government of Nakuru, Kenya, it was discovered that forensic accounting skills influences fraud mitigation ability by accounting firms. The study made use of questionnaire which was distributed to 25 accounting firms in Kenya and found that areas that needed forensic accounting included fraud prevention and detection at 97%, bankruptcy, insolvency and reorganization at 79.4%, financial statement misrepresentation at 76%, economic damage calculations (57.6%) and family disputes at 53%. Critical traits a forensic accountant includes analytical traits (85%), ethical trait (84%), confidence (82%), 61% inquisitive and 49 % scepticism.

Haron, Mohamed, Jomitin & Omar (2013) found that a forensic accountant is essential for an organization with the intention of decreasing the number of fraud occurrences in a public sector. A forensic accountant has an advantage to investigate beyond the figures over traditional auditor or accountant methods. This study was conducted from interviews and questionnaires distributed to public administrators from four public sector agencies in Malaysia; Federal Government, State Government, Local Authority and Statutory Bodies. Also, Nakede and Oko (2013) suggested that forensic accounting is a tool for fighting financial crime where the forensic auditor as an expert witness should at all times apply his skill and experience to support his expert opinion regarding an evidence or issue.

Gbegi and Adebisi (2014), conducted a survey on Fraud Prevention Mechanisms of Malaysian Government-Linked Companies: An Assessment of Existence and Effectiveness and their results showed that management review of internal controls and external audits of financial statements ranked as the top-most fraud prevention mechanisms in terms of the percentage of existence in organizations as perceived by internal auditors and fraud investigators, followed by operational audits, internal audits or fraud examination departments, and internal control review and improvements by departments. Kaminski and Wetzel (2014) in their study on the effectiveness of forensic auditing in detecting, investigating, and preventing bank frauds, sought to find out level to which the forensic auditors are able to fulfil this mandate and investigate problems that hinder forensic auditors to make progress in their operations in developing countries. Their study made use of questionnaires, personal interviews, and document review as the instruments for data collection. Using a sample of thirty forensic auditors from thirteen commercial banks, four building societies and four audit firms in Zimbabwe, it was found that the forensic auditing departments suffer from multiple challenges. Amongst these challenges were lack of material resources, lack of technical know-how, interference from management, and unclear recognition of the profession.

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Forensic Audit Tools and Fraud Detection: Nigeria perspective

Kasum (2009) carried out a study on the relevance of forensic accounting in the detection and prevention of fraud in Nigeria. A theoretical research was considered in finding out the differences between forensic accountant and traditional accountants in combating fraudulent activities and recommended that professional bodies in Nigeria should encourage the formalisation and specialisation in the field of forensic accounting. Owojori and Asaolu (2009) discussed the concept, need and role of forensic accounting in solving the vexed problem of corporate world. The study was a theoretical analysis of the role of forensic accountant in solving the vexed problem of corporate world. It employed the secondary source of data collection by making use of available literature on forensic accounting and its application in modern corporate world.

Kasum (2009) studied "The Relevance of Forensic Accounting to Financial Crimes in Private and Public Sectors of Third World Economies with particular reference to Nigeria". The work specifically evaluated the extent of financial crimes in developing countries and compared the private and public sector with a view to determining the sector where the services of forensic accountants are more required. The results of their reviews are that fraud and corruption are fundamental problems of third world countries. Empirically, they found that investigative or forensic accountant has a role to play, generally, but more in the public sector. They then recommend the strengthening of forensic accounting institution and utilization of their services in public sector of developing nations‟ economies. However, Okunbor and Obaretin (2010) conducted a study on effectiveness of the application of forensic accounting services in Nigerian corporate organisations and came up with something different. The main objectives of their study were to establish whether the application of forensic accounting services by corporate organisations is effective in deterring fraudulent practices and to find out the perception of the users of forensic accounting services, in Nigeria. The research was conducted using the mixed methods approach, involving the combination of structured interviews and questionnaire. Ten companies were selected as the sample for the study from the population of companies quoted on the Nigerian Stock Exchange. Their study revealed that the application of forensic accounting services by corporate organisations in Nigeria is not effective in curbing fraudulent activities.

Chi-Chi and Ebimobowei (2012) examined the effect of forensic accounting services on fraud detection in Nigerian banks. To achieve this objective, data was collected from primary and secondary sources. The primary data were collected with the help of a well-structured questionnaire of three sections administered to twenty four banks in Port Harcourt the capital of Rivers State and the data collected from the questionnaires were analysed with descriptive statistics, Augmented Dickey-fuller, ordinary least square and Granger Causality. The result revealed that the application of forensic accounting services affects the level of fraudulent activities of banks. On the basis of this finding, the paper concluded that forensic accounting services provide banks with the necessary tools to deter fraudulent activities. Therefore, the study suggested among others that banks should invest on human capital development of their personnel, government and regulatory authorities should ensure the provision of standards and guidelines to regulate forensic accounting activities and above all Nigerians should embrace integrity, objectivity, fairness and accountability in their day-to-day activities.

In a similar work, Ibietan (2013) examined forensic accounting as a tool for fraud detection and prevention in the public sector organisations. Their study was conducted with reference to Kogi State in Nigeria. Data for the study were obtained from both the primary and secondary sources. 370 copies of the research questionnaire were administered to staff of five selected ministries in the state with 350 copies properly filled and return. This quantitative method of data collection was complimented with oral interviews. It was discovered that the use of forensic accounting significantly reduces the occurrence of fraud cases in the public sector. Mohammed (2013) traced the historical perspective of global action against money laundering and discussed what is money laundering and the stages of money laundering. It further discussed what forensic accounting is and who is a forensic accountant, who is an expert witness as well as the role of a forensic accountant as an expert witness. Finally, it examined how the „Nigerian Factor‟ affects the role of a forensic accountant as an expert witness.

Gbegi and Adebisi (2014) studied on the application of forensic auditing in reducing fraud cases in Nigeria money deposit banks. They stated the rise in corporate crimes forced the developed and developing economics to look for possible way of tackling the scandals. The study analyzed the trend in fraud cases from 2001-2012. The findings showed that there are up to and down movements in fraud cases. Suggesting that employment of forensic auditing in Nigerian banks by mending the existing statutes, in such a way that forensic auditors are included in the audit team.

In Ijewereme's (2015) study on role of auditors in fraud detection and prevention in Nigeria, the primary data used was obtained by the researchers through the administration of designed questionnaire to respondents. According to the researcher, the use of convenience sampling methodology was adopted; the respondents were bankers, managers, investors and accountants. 184 questionnaires were analysed using descriptive statistics that yielded a 92 per cent response rate. Furthermore, more than 90 per cent of the respondents claimed that they were aware of what auditors do. The high level of awareness combined with their accounting qualifications and audit experience added credibility to the findings of the research. The major finding of this study was that auditors are not responsible for preventing or detecting fraud. This study was also carried out in the private sector.

All the above studies provided a solid base and give idea regarding forensic audit and fraud detection. Also, they provided the results and conclusions of those studies already conducted in the same area for different countries, environment and from different perspectives.

Therefore, from the review of these related literatures, it can be summarized that while over the years prior studies on fraud detection and prevention method have focused mainly on the private sector (Bierstaker, Brody & Pacini, 2006; Nigrini, 2011; Nakede & Oko, 2013; Kaminski & Wetzel, 2014; Ibietan, 2013; Gbegi & Adebisi, 2014), there were limited studies conducted on fraud detection and prevention in the public sector and the few ones focused only on one state (Kogi state) or on a single geo-political zone(South-West).

III. Methodology and Data

For the purpose of carrying out a good analysis and reaching a reasonable conclusion, survey research design was adopted for this study. The population of the study consists of the 608 federal parastatals in Nigeria. Although, the federal parastatals are distributed across different ministries, yet, they have some common characteristics which can make them to be studied together. In selecting the sample for this study, stratified and proportionate purposive sampling techniques were used. The stratified sampling technique was used to divide the population into three strata: small, medium and large so as to ensure that the samples are representative of the population.

Data were collected through the administration of questionnaire. Six hundred and sixty five copies of the pretested questionnaires were administered to the staff of finance and audit department of the selected parastatals and accredited audit firms. The questions were mainly on the five point Likert-scale questions, with a choice of strongly agree, agree, strongly disagree, disagree, and undecided. Also, an in-depth interview was randomly conducted on 2 staff each from half the numbers of parastatals selected based on the stratum and 2 staff members each from 6 of the licensed forensic audit firms. This was done to validate the authenticity of the information collected through questionnaires.

The data were analyzed using both descriptive (mean, median, mode and standard deviation) and inferential statistics (rank order correlation coefficient and multiple linear regression analysis).

Model Specification

Following the conceptual framework presented in chapter two, fraud detection serves as the dependent variable while forensic audit tools proxies by forensic accountant's skills, forensic accountant's technique and forensic accountant's experience serve as independent variable. Hence, the model is presented as follows:

Y = f(X)
Where:
Y = dependent variable
X = independent variable
FD= f (FAT)

Where:
FD= Fraud Detection
FAT = Forensic Audit Tools

The empirical model is as follows:
$FDi = \alpha + \beta_1 FASi + \beta_2 FATi + \beta_3 FAEi$
Where:
FAS = Forensic Accountant's Skills
FAT = Forensic Accountant's Technique
FAE = Forensic Accountant's Experience

A Priori Expectation

A priori expectation for all the coefficients of the independent variables of the study is shown in this table.

Variables	Expected Signs
Forensic Auditing Tools	+
Forensic Accountant's Skills	+

Forensic Accountant's Technique	+
Forensic Accountant's Experience	+

Source: Researcher's desk report, 2022

IV. Findings and Discussion

To investigate whether forensic audit tools have significant impact on fraud detection in the Nigeria Federal Parastatals, the study employed an ordinary least regression analysis. In the study, R-square was 0.477, suggesting that about 48% of the variation in the fraud detection can be attributed to the combine effects of all the three independent variables (forensic accountant skills, forensic accountant technique and forensic accountant experience) while the remaining 52% can be attributed to other variables not captured in this study.

The finding of the study is consistent with that of Adejuwon (2016) who obtained an R-square of 39% in a study on a similar topic with different scope. Other studies in different African countries recorded smaller R-square for research on forensic audit tools and fraud detection. In Ghana, Kwamen (2013) recorded 31% R-square while Muturi and Memba, (2017) recorded 24% R-square.

To determine the individual influence of the independent variables on the dependent variable, the beta coefficient results were analysed. For the forensic accountant skills, the beta coefficient was 0.557, while the T-statistics was 5.989 with a p-value of 0.000. The result implies that forensic accountant skills have significant impact on fraud detection. It can therefore be inferred that with a unit increase in skill acquisition of forensic auditors, there is higher possibility of about 56% reduction in fraudulent practices in the federal parastatals in Nigeria and vice versa.

Similarly, the beta coefficient on forensic accountant techniques was also positive and significant at 5% level of significance. The beta coefficient was 0.814, while the T-statistics was 2.669 with a p-value of 0.001. Thus, it can be inferred that an investment in more sophisticated techniques by the forensic accountants in Nigeria may yield a reduction in fraudulent practices by about 81%. It also means that dynamic forensic auditors that use different techniques in discharging their responsibilities may be more productive than those with a straight jacket rules and technique.

Lastly and in line with the finding of Okoye and Gbegi (2013), that reported that forensic accounting experience significantly reduces the occurrence of fraud cases in the public sector, the coefficient of forensic accountant experience was statistically significant and positive (beta= 0.138, T-statistics= 6.273, p-value= 0.000), suggesting that detection of fraudulent practices in the federal parastatals in Nigeria requires engagement of not just any trained forensic accountants but those who are highly experienced in forensic audit engagement.

Analysis of Interview Response Using Descriptive Statistics

The responses to the interview questions were analysed in this section. Out of the 72 respondents randomly selected for the interview only 28 respondents were available for the interview. This included 9 finance directors, 14 internal auditors and 5 staff from the licensed forensic auditors. This low response rate was due to unwillingness of some of them to provide answer to some of the questions raised, despite all the assurance given to them in terms of assurance of confidentiality and animosity. The interview response was transcribed by writing out the spoken words using the clear instruction written by the researcher for transcription. This was done by two independent research assistants. The divergences in their notes were reconciled by the researcher. Where there were obvious differences, the process were repeated by the researcher. Large differences usually results from misunderstanding or different interpretation. Therefore, the best thing in such a situation is for the researcher who understands the focus of the study to repeat the process. The researcher also made a summary from the transcription done by the research assistants. The data were analysed with the use of content analysis. On each variable, 5 questions were raised. Inspired by Kothari and Garg, (2014), responses to these questions were coded as 1, 2, 3, 4, and 5 for strong affirmation, affirmation, ambivalent, weak affirmation and very weak affirmation respectively. Coding means putting the information into a quantifiable form or sorting contents into analysable groups. The descriptive results for the content analysis were presented in Table 4.16.

As presented in Table 4.16, there was strong affirmation for all the variables. It means the respondents strongly believed that there was adequate use of forensic accountants' skills, technique and experience in the delivery of forensic auditing service to the federal parastatals in Nigeria by the practicing forensic accountants. It also implies that, the respondents perceived a significant improvement in the early detection of fraudulent practices in the federal parastatals in Nigeria. They also believed that institutional and technological factors are among the major factors that contributed to the early detection of fraudulent practices in the federal parastatals in Nigeria.

Also, the mean score for all variables ranges between 4.11 and 4.35, suggesting that majority of the respondents were either in strong affirmation or in affirmation with the questions raised under each variable. It can also be noted from the results in Table 4.16, that deviation from the mean was relatively low for all the variables which implies an absence of wide disparity in the opinion of those who responded to the interview questions despite the fact that they were drawn from different parastatals and different forensic auditing firms.

Table 4.16 Descriptive Statistics for all Variables

		SA	A	AMB	WA	VWA	MN	MD	MO	SD
1	Forensic Accountants Skills	39.5	21.4	24.6	5.3	9.21	4.11	4	5	0.94
2	Forensic Accountants Technique	40.2	34.1	12.5	7.5	5.71	4.29	5	5	0.55
3	Forensic Accountants Experience	25.4	33.8	22.3	8.5	9.70	4.15	4	4	1.18

Source: Researcher's Computation, 2022

T Statistics Results

In this section, a T-statistics test was conducted to ascertain the level of agreement or otherwise between the results of questionnaire response and the interview responses. A two tail t-test was used since it has the potential to examine the relationship in both directions such as above or below the control group (i.e whether the difference is positive or negative). In Table 4.17, the mean difference for forensic accountant skills was 0.11 with a T-statistics of 1.823 and p-value of 0.755. The result indicates that there was no significant difference between the questionnaire response and the interview response.

For forensic accountants' technique, the mean difference was 0.21 while the t-statistics was 1.493. The result also produced a p-value of 1.002, indicating that no statistically significant difference can be obtained. The result means that the two studies are entirely consistent with each other. Also, it was observed that the p-value for the forensic accountants' experience tends to be lower (0.682) but the result is not statistically significant at the 5% level of significance adopted in this study. Therefore, the study also inferred that there was no significant difference in the results of the two studies.

In contrast, for fraud detection, the t-statistics was 2.826 while the p-value was 0.018 meaning that the two study groups gave divergent opinion. Since the p-value is far below 0.05, the result implies that the difference is not due to change. It is therefore essential to investigate the reason for the divergence in this result. A critical analysis revealed that the mean result for questionnaire result was 3.62, smaller than the 4.23 obtained for the interview response. Since, the questionnaire considered a far larger sample (447 respondents) than the interview (28 respondents) there may be a large group of respondent that strongly disagreed which may deflate the mean score for the result.

T- Statistics Result.

Variables	Questionnaire	Interview	Mean Diff.	T-Stat.	Sig.
Forensic Accountant's Skills	**4.22**	**4.11**	**0.11**	**1.823**	**0.755**
Forensic Accountant's Technique	**4.50**	**4.29**	**0.21**	**1.493**	**1.002**
Forensic Accountant's Experience	**4.25**	**4.15**	**0.10**	**1.779**	**0.682**
Fraud Detection	**3.62**	**4.23**	**0.61**	**2.826**	**0.018**

Source: Researcher's Computation, 2022

V. Conclusion and Recommendations

From the results of the empirical analysis conducted vis a vis the objectives of the study, the study concluded that parastatals with strict adherence to institutional guidelines are more likely to have fewer incidences of fraudulent practices than those that do not consider the strict adherence to such a factor necessary, meaning that non-compliance with the various operational audit standards has been noticed to be one of the main factors promoting fraudulent practices in the federal parastatals in Nigeria.

Following the findings of this study, the following recommendations were made to both management and regulatory authorities connected with the federal parastatals in Nigeria:

a) Results of the data analysis generally showed that most of the forensic audit tool variables have significant impact on fraud detection. It is therefore important for forensic audit firms to intensify efforts towards acquiring more innovative skill.

b) Federal parastatals should place emphasis on competence in the choice of forensic auditing firm to engage rather than other factors.

REFERENCES

[1]. Adams, R., & Ferreira, D. (2007). A Theory of Friendly Boards. SSRN Electronic Journal. http://dx.doi.org/10.2139/ssrn.453960

[2]. Abdullahi, A., & Senekal, A. (2012). Contemporary Discourses in Qualitative Research: Lessons for Health Research in Nigeria. African Sociological Review, *16*(1), 302-331. Retrieved from Http://Www.Ajol.Info/Index.Php/Asr/Article/Download/87624/77288

[3]. Ahmed, A., & Duellman, S. (2007). Accounting conservatism and board of director characteristics: An empirical analysis. Journal of Accounting and Economics, 43(2-3), 411-437. http://dx.doi.org/10.1016/j.jacceco.2007.01.005

[4]. Bacon, C., & Brown, J. (2014). Corporate Directorship Practices: Role, Selection and Legal Status of the Board. New York: In (Research Report No. 646) T.

[5]. Balogna, J. & Lindquist, R. (1995). Fraud auditing and forensic accounting. New York:

[6]. Baysinger, B., & Butler, H. (2015). Corporate Governance and the Board of Directors: Performance Effects of Changes in Board

Composition. Journal of Law, Economics, and Organizations,1, 101-124.
[7]. Baysinger, B., & Hoskisson, R. (2008). The Composition of Boards of Directors and Strategic Control: Effects on Corporate Strategy. The Academy of Management Review, 15(1), 72.http://dx.doi.org/10.2307/258106
[8]. Boritz, J. E., Kotchetova, N., & Robinson, L. A. (2008). Planning fraud detection procedures: Forensic accountants vs auditors. IFA conference.
[9]. Bozkurt, E. (2003). Fraud detection and forensic accounting. Retrieved from http://www.springer.com/cda/content/document
[10]. Beasley, M. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review*, 7(1): 443-465.
[11]. Bello (2001). Fraud prevention and control in Nigerian public service: The need for a dimensional approach. Journal of Business Administration, *1*(2), 118-133.
[12]. Berghel, H. (2003). The discipline of Internet forensics. Communications of the ACM, 46(8), 15-20.
[13]. Bierstaker, J. L., Brody, R. G., & Pacini, C. (2006). Accountants' perceptions regarding fraud detection and prevention methods. Managerial Auditing Journal, 21(5), 520-535.
[14]. Casimir, K. C. A., Izueke, E. M., & Nzekwe, I. F. (2014). Public Sector and Corruption in Nigeria : An Ethical and Institutional Framework of Analysis. Open Journal of Philosophy, *4*, 216–224.
[15]. Chi-chi, O. A., & Ebimobowei, A. (2012). Fraudulent Activities and Forensic Accounting Services of Banks in Port Harcourt, Nigeria. Asian Journal of Business Management, 4(2), 124–129.
[16]. Coenen, T. L. (2005). Fraud in Government: Wiscons in Law Journal Article Posted by Casafamar Sundip. Retrieved May on 25, 2011, http://www.google.com
[17]. Coewen, T. L. (2005) Fraud in government. Wiscons in Law Journal article. Retrieved on 25th May 2011.
[18]. Cressy, O. (2012). Companies Regulation 2012. Abuja: Corporate Affairs Commission Nigeria.
[19]. Crumbley, D. L. (2003). What is forensic accounting? Forensic accounting: Older than you think. Journal of Forensic Accounting, 11(2), 181-202. Retrieved from:www.edwardpub.com
[20]. David, A. (2005). Low level fraud is a high level issue, supply management. Retrieved from: http://www.highbeam.com/doc/1P3-821992191.html.
[21]. Enofe, A. O., Okpako, P. O., & Atube, E. N. (2013). The Impact of Forensic Accounting on Fraud Detection. *European Journal of Business and Management*, 5(26), 61–73.
[22]. Gbegi, D. O. & Adebisi J. F. (2014). Forensic accounting skills and techniques in fraud accounting skills and techniques in fraud investigation in Nigerian Public Sector. Mediterranean Journal of Social Sciences *5*(3) 243-252.
[23]. Ibietan, J. (2013). Corruption and Public Accountability in the Nigerian Public Sector: Interrogating the Omission. European Journal of Business and Management, 5(15), 41–49.
[24]. Ijewereme, O. B. (2015). Anatomy of Corruption in the Nigerian Public Sector: Theoretical Perspectives and Some Empirical Explanations. SAGE Open, 5(2), 1–16. http://doi.org/10.1177/2158244015581188.
[25]. Kaminski, K. & Wetzel, T.S. (2014). Financial ratios and fraud: an exploratory study using chaos theory', Journal of Forensic Accounting, *l*, 147-72.
[26]. Kasum, A. S. (2009). The Relevance of Forensic Accounting to Financial Crimes in Private and Public Sectors of Third World Economies: A Study from Nigeria. Proceedings of The 1st International Conference on Governance Fraud Ethics and Social Responsibility, June (pp. 11–13).
[27]. Lawrence, C. & Byron, P. (2013). Auditors' responsibility for fraud detection: New wine in old bottles. Journal of forensic & Investigative Accounting, Vol.5., Issue 1, January to June 2013.
[28]. Mohammed, U. (2013). Corruption in Nigeria: A Challenge To Sustainable Development in the Fourth Republic. European Scientific Journal, *9*(4), 118–137.
[29]. Moyes, G. & Baker, C. R. (2009), "Auditors' beliefs about the fraud detection effectiveness of standard audit procedures", *Journal of Forensic Accounting,* Vol. IV No. 2, pp. 199-216.
[30]. Nekede, F. P., & Oko, F. P. (2013). An Emperical Analysis of Forensic Accounting and Financial Fraud. African Journal of Social Sciences, *3*(4), 112–121.
[31]. Nigrini, M (2011). Forensic Analytics: Methods and Techniques for Forensic Accounting Investigations, ISBN: 978-0-470-89046-2, Wiley and Sons
[32]. Oboh, A. (2012). "Probe of the Oil Sector". Daily Independent Vol.11 No 22230
[33]. Ojeme, S. (2010). Forensic Accounting "LL Reduce Fraud in Financial Industry. Retrieved on 5/9/2010 from http://www.gaflbcstocwrLcom
[34]. Okoye, E. I., & Gbegi, D. O. (2013a). An evaluation of forensic accountants to planning management fraud risk detection procedures. Global Journal of Management and Business Research, 13(1), 1-17
[35]. Okoye, E. I. & Gbegi, D. O. (2013b). Forensic accounting: A tool for fraud detection and prevention in the public sector: A study of selected ministries in Kogi State. International Journal of Academic Research in Business and Social Sciences 3(3) 1-19.
[36]. Okunbor, J. A., & Obaretin, O (2010). Effectiveness of the application of forensic accounting services in Nigerian organisations. Journal of Management Sciences, 1(1), 171-184.
[37]. Olagunju, A. & Leyira, M. C (2012). Audit expectation gap: Perspectives of auditors and audited account users, International Journal of Development and Management review (INJODEMAR) Vol., 7, 2012
[38]. Orkura, S. (2009). Auditor General Admits Mass Fraud in Revenue Remittance to Government. Retrieved on 24/1/2012 from http://www.information.org
[39]. Owojori, A. A & Asaolu, T. O. (2009). The Role of Forensic Accounting in Solving the Vexed Problem of Corporate World. European Journal of Scientific Research, 4(2), 172-191