FORENSICS AUDITING TECHNIQUES AND AUDIT QUALITY OF PUBLIC SECTOR ESTABLISHMENTS IN NIGERIA

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Abstract
This study examined the effect of forensics auditing techniques on the audit quality of Ministry, Department and Agencies *(MDAs) in Abia State, Nigeria. The proxy for independent variables include computer cross drive, network audit trail and live analysis, while dependent variable is audit quality. The research instrument used was questionnaire and the population of study was made up of staff of MDAs in Abia State from which 100 staff were purposively selected. Multiple regression models were employed for data analysis and testing of hypotheses. The results of the findings revealed that 77%, 86% and 85% of the independent variables respectively variations of audit quality are attributable to the variations in computer forensics techniques. The study concludes that computer forensics techniques have positive and significant effect on audit quality of MDAs in Abia State. The researchers therefore, recommend that Computer forensics procedures need to be followed during investigation and experts like the Certified Public Accountants should be engaged. Also, training of accountants on computer forensics will enable them obtain required skills for investigation of high profile crime prevalent among public office holders. The government needs to support induction and work related training, particularly for employees involved in internal control system and the financial regulations. The MDAs should take advantage of the modern accounting and auditing software to enhance efficiency and smooth operation of government business.*
Key words: *Information Technology, forensics auditing techniques, MDAs, Audit quality & Forensic evidence gathering techniques.*

Introduction

The world has become a global village as a result of high IT investments and the rapid pace of technological change. The current escalating costs of research and development have made it necessary for business organizations and governmental institutions to embrace forensic accounting techniques. The birth of information technology (IT), computers and peripheral equipment, over the last decades has brought innovation on how companies and institutions manage and control their resources. The accounting profession is witnessing major changes due to changes in technology. In addition to traditional accounting services, accountants are involved in such services such as attestation reviews, forensic accounting, and fraud

examinations. The 21st Century accountants must thus, possess forensic knowledge and the skills to critically analyze various problems in order to remain updated. Information technology (IT) has enhanced the auditing techniques and investigative accounting because the modern digital environment offers new opportunities for fraudulent practices. In the public sector, there are many corrupt practices in-built in the system that made successive governments to adopt various control measures to minimize fraudulent act of public office holders. The Nigerian Civil service seems to be at the heart of corruption in the country with individuals charged with managing public funds engaging in unscrupulous and deviant behaviours. Civil service comprises of workers in the various Ministries or Departments or Agencies (MDAs) apart from those who hold political appointments. Anazodo, Okoye & Chukwuemeka (2012), observed that in 2001, a permanent secretary of the ministry of Defence was accused of embezzling funds amounting to N450 million. Also, the chairperson of the Education Tax Fund (ETF), and the Accountant General of the Federation, and the former Chairman of the Inland Revenue Services were alleged to have embezzled funds of the ETF to the tune of N40 billion between 1993 and 2000. Also, electoral frauds arising from every conduct of general election in Nigeria have put the electoral umpire Independent National Electoral Commission (INEC) under intensive pressure and helpless.

On 6th July, 2020, Premium Times Nigeria reported that the former Ag. Chairman of EFCC, was detained by presidential panel investigating allegation of corruption leveled against him by the Attorney General and Minister of Justice. The EFCC boss was detained for nine (9) days and suspended along with his twelve (12) directors and his secretary while the investigation continued, but the embattled EFCC boss claimed that he is being persecuted by corrupt politicians including his boss (Minister) because he insists that all looters of public funds must be brought to book. Also, the corruption saga in Niger Delta Development Commission (NDDC) is in the public domain, where the Minister revealed that some members of National Assembly, Governors and traditional rulers were beneficiaries of the alleged disbursed N40 billion. The beauty of this development is that we now have a government that is courageous to investigate powerful politicians if not for any other thing, because the rot in the NDDC especially from 1999 will be exposed to the general public. This is the first time EFCC boss is investigated instead of the usual practice of removing and replacing the officer with the loyal servant of the power that be at any point in time.

As observed by Okoye (2016), Corruption in Nigeria has become an industry all on its own, complete with stakeholders, investors and risk-return profile. “The fraud industry is organized with internal coordination, shared knowledge and a vertical exchange of benefits linking principal and agents. It closes off clients’ alternatives, creates a network of operatives, freezes out critics and non-corrupt agents, and shares

rewards and risks among stakeholders." Unfortunately, people in Nigeria expect leaders to be corrupt; to be any less is regarded as too good to be true. Indeed, they are considered fools who have served in public office without accumulating ill-gotten wealth. Our system has never hold leaders accountable; ethnic and sectional loyalties override character and competence deficiencies. It does not matter if an insane (he or she) is put to lead provided he or she is from an ethnic group of choice by manipulations and not by credible electoral process. The accounting professional bodies are not left out in the fight against financial misstatement and misappropriation of entity's resources. The AICPA and PCAOB (Public Company Accounting Oversight Board) have issued statements regarding auditors' increased responsibility for IT knowledge, fraud recognition and the importance of evaluating IT controls during a financial audit. The Sarbanes-Oxley Act of 2002 (SOX, 2002), increased evidence of business fraud and advancements in IT networks and systems should lead organizations to a higher expectation of auditors' IT skills (Abdullah and Al-Jafari, 2011).

In recent time almost every financial fraud incorporates the use of a computer, whether the fraud is falsifying invoices or electronic money laundering. In the case of financial statements fraud, entries probably exist as electronic journal entries, login records found in log files, and electronic correspondence involved individuals. Auditors find themselves increasingly involved in evidence collection through computer forensics. Auditors with forensic IT skills have been in increased demand as a result of new regulatory requirements for compliance and higher emphasis on IT governance. In Nigeria, the government established anti-corruption agencies especially Economic and Financial Crime Commission (EFCC) and Independent Corrupt Practices and other related offenses Commission (ICPC) to act as a watch dog over government assets and properties with a view to adopting best practices in the conduct of government business. Prior to the establishment of the above mentioned commissions, there was financial regulation and financial memorandum in place but public office holders refused to put them into use because of their corruption prone activities. Technology brings in computer security as a form of defense against unauthorized and malicious intrusion and computer forensics allows for identification of incidents, gathering of evidence, analysis of evidence and potentially recovery of records. The multidisciplinary and inter-disciplinary nature of computer forensics extends to records management. Therefore, this work is set out to investigate the effect of computer forensics techniques on the audit quality of public sector establishments in Nigeria. Predicated on the above arguments, the researchers examined the following objectives.

(i) To determine the effect of cross-drive analysis on audit quality of MDAs in Abia state, Nigeria.
(ii) To examine the effect of network audit trails on audit quality of MDAs in Abia state, Nigeria.
(iii) To examine the effect of live analysis on audit quality of MDAs in Abia state, Nigeria.

Based on the above stated objectives, the researchers formulated these hypothesis to guide their investigation thus:

H_{01}: Computer cross-drive analysis has no significant effect on audit quality of MDAs in Abia state, Nigeria.
H_{02}: Network audit trail has no significant effect on audit quality of MDAs in Abia state, Nigeria.
H_{03}: Live analysis has no significant effect on audit quality of MDAs in Abia state, Nigeria.

The paper is organised as follows' the next section reviews relevant literature with regards to context justification and provide a theoretical background for the study, respectively. Next describes the sample data and empirical methodology. The last section summaries the main results, offers conclusion and recommendations.

Review of related Literature

Conceptual Reviews

Forensic Accounting

Hinders (2009) explains forensic accounting as the integration of accounting, auditing, and investigative skills. Simply put, forensic accounting is accounting that is suitable for legal review offering the highest level of assurance and including the now generally accepted connotation of having been arrived at in a scientific fashion (Crumbley, 2006). 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 the crime under the seemingly new nomenclature in the 21st century (Coenen, 2005). Forensic accounting in the view of Howard and Sheetz (2006) is simply the process of interpreting, summarizing and presenting complex financial issues clearly, succinctly and factually often in a court of law as an expert witness. It is concerned with the use of accounting discipline to help determine issues of facts in business litigation. From business, government, regulatory authorities, to the courts, evidence indicates that a high level of expertise is necessary to analyze current complicated financial transactions and events. As a result, forensic accounting has been thrown into the forefront of the crusade against financial deception (Rumaswany, 2005). Forensic Accounting is different from the old debit or credit accounting as it provides an accounting analysis that is suitable to the organization which will help

in resolving the disputes that arise in business transactions. This new and ground-breaking accounting has two main areas which are:

i. Litigation support and investigation; and
ii. Dispute resolution

The former represents the factual presentation of economic issues related to existing litigation. In this capacity, the forensic accounting sustained by parties involved in the legal disputes and can assist in resolving dispute, even before they reach the court action. If dispute reaches the courtroom, the forensic accountant may testify as an expert witness. On the other hand, the latter is that of determining, whether criminal matters such as securities fraud which include financial settlement, identify theft and insurance fraud etc. In such complex cases forensic accountants make some recommendations or actions that can be taken to minimize future risk or loss. The need for forensic accountant arose because of the failure of audit system as the organizational internal and external audit failed to figure certain errors in the managerial system.

Computer Assisted Audit Techniques (CAATs)
Computer assisted audit techniques are all those audit procedures or techniques which make use of the computer or the computer data or the computer program as a means of evidence (Okafor, 2016). CAATs are used for compliance and substantive testing in the following ways:

i. To verify the existence of program controls;
ii. To verify the effectiveness of program controls;
iii. To determine the correctness of program processing procedures;
iv. To review transactions and balances in computer files and select exceptional items for further audit work. Example, to review the work files and select slow moving items for further audit examination;
v. To stratify transactions and balances in computer files for audit purposes, example, to classify debtors' balances into materiality bands such as balances below N100,000 balances from N100,000 to N500,000 and balances above N500,000.
vi. To select a sample of transactions and account balances from computer files on random basis for further audit testing;
vii. To match the contents of two or more computer files and select any unmatched items for further audit work. For instance, to match the Goods Delivery Notes (GDNs) file with the Sales invoices file and identify for further audit work, any GDNs without corresponding sales invoices or any sales invoices without a related GDNs.
viii. To print or display on screens the contents of computer files for audit purposes;

ix. To sort transactions and account balances into a desired sequence for audit purposes; and
x. To copy or download transactions and account balances in the client's computer files for testing in another computer installation. This will be done where the client's computer is busy and the auditor cannot perform his tests using the entity's computer.

Computer Forensics Techniques

i). Cross Drive Analysis

Cross-Drive Analysis (CDA) is a computer forensic technique that correlates information found on multiple hard drives. The technique, which is still being researched, can be used for identifying social networks and for performing anomaly detection (Olaoye and Dada, 2017).Several uses for cross-drive analysis have been identified:

a). Automatic identification of ''hot'' drives. With simple statistical techniques it is possible to automatically identify drives in a large collection that are likely to be of interest, and thus should be given higher priority.
b). Improving single drive forensic systems. Data collected during the course of cross-drive analysis can be used to create smarter single-drive forensic tools for example, by developing a ''stop list'' of information that can be safely ignored by other forensic tools.

c). Identification of social network membership. If several drives in a forensic repository are known to have been used by an organization under scrutiny for example, a terrorist organization, then cross-drive analysis can be used to determine if a newly acquired piece of digital media was used by an entity that had contact with the organization in question.

ii). Network Analysis

The network analysis is a method used to analyze, control and monitoring of business processes and workflows. Contrary to the work breakdown structure, a network diagram also considers the chronological order of activities, milestones and tasks, their durations and dependencies and visualizes them graphically or as a table, e.g. in a Gantt chart (Olaoye and Dada, 2017). The network analysis enables project managers to take various factors into account when creating a project plan such as Dependencies and Buffer times between activities, Earliest and latest start and end dates**,** Duration of activities**,** and Critical Path. The network analysis method is often used in procurement and production in order to control project processes more efficiently and to complete projects on schedule and on budget.Network analysis is the general name given to certain specific techniques which can be used for the planning, management and control of projects.

Two different techniques for network analysis were developed independently in the late 1950's - these were:

- PERT (Program Evaluation and Review Technique); and
- CPM (Critical Path Management).

PERT was developed to aid the US Navy in the planning and control of its Polaris missile program. PERT has the ability to cope with uncertain activity completion times (e.g. for a particular activity the most likely completion time is 4 weeks but it could be any time between 3 weeks and 8 weeks).

CPM was developed in the 1950's as a result of a joint effort by the DuPont Company and Remington Rand Univac. As observed by Investopedia (2019), in CPM the emphasis is on the trade-off between the cost of the project and its overall completion time (e.g. for certain activities it may be possible to decrease their completion times by spending more money. Network analysis is a vital technique because it enables us to take a systematic quantitative structured approachto the problem of managing a project through to successful completion.

iii). Live Analysis

Live Analysis is a branch of project management which studies continuous changes and includes the theories of integration, differentiation, measure, limits, analytic functions and infinite series. It is the systematic study of real and complex-valued continuous functions. It describes both the discipline of which calculus is a part and one form of the abstract logic theory (Ashamu, 2014). There are two broad subdivisions of live analysis named Real analysis and Complex analysis, which deal with the real-value and the complex-value functions respectively.

a). Real Analysis: Real analysis is a branch of analysis that studies concepts of sequences and their limits, continuity, differentiation, integration and sequences of functions. It focuses on the real numbers, including positive and negative infinity to form the extended real line. It deals with functions of real variables and is commonly used to distinguish that portion of calculus. It is natural to consider differentiable, smooth or harmonic functions in the real analysis, which is more widely applicable but may lack some more powerful properties that holomorphic functions have (Okpara, 2009),

b). Complex analysis: Complex analysis is the study of complex numbers together with their manipulation, derivatives and other properties. It is an extremely powerful tool which helps in providing a way of computing difficult integrals by investigating the singularities of the function near and between the limits of integration (Ashamu, 2014).

IT and Forensic Accounting

The introduction of computer technology into accounting systems changed the way data was stored, retrieved and controlled. It is believed that the first use of a computerized accounting system was at General Electric in 1954. The formation and rise in popularity of the internet and e-commerce have had significant influences on the growth of IT audit. The Internet influences the lives of most of the world and is a place of increased business, entertainment and crime. IT auditing helps organizations and individuals on the internet find security while helping commerce and communications to flourish (Rumaswany, 2005). In reality technology plays several roles in assisting the forensic accounting investigation and those roles need to be supervised and managed in order to support the objectives of the investigation. The courts acceptance of computerized forensics evidence depends on how the overall scene investigated are protected and the deepness of records keeping and management is served at all times without any suspicious alterations and utterances towards any material used and presented as upper hand evidence in court hearings and proceedings (Rumaswany, 2005).

Computer hardware and software could be both used in committing an offense but software manipulation proved to be more apparent. Operating systems software consists of programs which keep computers running as automatically as possible whereas applications software consists of computer programs that apply the computer to the user's needs through carrying out a task the user wants performed. Both of them present challenges for forensic accountants to uncover fraud and other offenses. These software tools require forensic accountants to use state-of the-art facilities and software tools to equal the capacity of the two (Nunn, McCguire, Whitcomb and Jost, 2006). There are many new technological products that aid and allow investigators to recover deleted fields, crack encryption or codes and extract and sort data. One among the newly developed software program is that of KPMG Forensic Accounting which helps in determining how fraud was penetrated. This is through the preparation of TRACE or Transactional Representation of Assets and Court Evidence diagram. TRACE diagram provides a computer-generated graphical and concise summary of a series of transaction. This diagram also presents information on events or structures in an easy read format for the purpose of mapping the flow of funds through the penetrator's private companies/accounts while also identifying the parties involved.

Audit quality

Several definitions of audit quality exist but DeAngelo !981) cited in Amahalu and Egolum (2019) define audit quality as 'the market assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach. The probability that the auditor will report the detected misstatements is defined in Amahalu and Ezechukwu (2017) as auditor

independence. Audit quality is an increasing function of an auditors' ability to detect accounting misstatement and auditor independence as assessed by the market. Similarly, Franze (2002), defined audit quality as the way an auditor conducts the audit in accordance with Generally Accepted Auditing Standards (GAAS) to provide reasonable assurance that the audited financial statements and related disclosures are (i) presented in conformity with Generally Accepted Accounting Principles (GAAP) and (ii) are not materially misstated whether due to errors or material misstatement from the standard, otherwise it is considered to reflect poor audit quality. Independent audit has been part of the financial reporting chain for a considerable time. This has resulted in more consideration being given to the audit quality of an audit and what audit quality means, how it could be defined and how it could be measured.

Audit Quality Indicators and measurement

Recently, more and more emphasis has been placed on measuring audit quality by regulators, oversight bodies, professional bodies and audit firms. This cumulated in Nine (9) bodies worldwide in setting out audit quality indicators (AQIs) that might be used to measure audit quality. Audit quality is a crucial instrument for ensuring transparency and accountability in both the public and private sectors. If the audit quality is responsible for the maximization or minimization of profit, then what are the circumstances that make these possible? The International Auditing and Assurance Standards Board (IAASB) published a ***Framework For Audit Quality***1 in February 2014. The Framework describes factors contributing to audit quality at engagement, audit firm and national levels, for financial statement audits. The objectives are to raise awareness of the key elements of audit quality, encourage key stakeholders explore ways to improve audit quality and facilitate a greater dialogue between them on the topic. The IAASB's Framework promotes the **key elements of audit quality** which are distinguished as follows:

a) **Inputs** covering such factors as values, ethics, and attitudes which are influenced by the culture of a firm; also it covers knowledge, skills, and experience of auditors as well as allocated time to complete the audit. These apply at both the engagement and firm levels as well as at national level;
b) **Process** covering audit processes and quality control procedures and their effect on audit quality;
c) **Outputs** including reports and information that are formally prepared for the purposes of audit;
d) **Key interactions within the Financial Reporting Supply Chain** covering formal and informal communication between stakeholders and the context which may influence those interactions; and
e) **Contextual Factors** including a number of environmental factors that might affect audit quality.

In support of IAAB (2014) and Public Company Accounting Oversight Board (PCAOB) concept release on audit quality indicators, Transparency (2015) reporting by Auditors of Public Interest Entities (PIEs) review of mandatory reports, adopted the following checklist for audit quality indicators.

Table 2.1: Checklist of Audit quality

S/N	Audit Quality Indicators	Measurement Key
1	Training hours per audit.	-Annual accounting and auditing training hours; -Total independence and ethics training hours for personnel groups.
2	Internal engagement qualities views.	-Percentage of findings of material weakness in internal control over financial reporting with no corresponding restatements for errors; -Percentage of restatement for errors.
3	External inspections.	-Number and percentage of inspected audit; -Number of quality control defects dealt with if any, combined with information about firms' subsequent remediation efforts.
4	Number of audit staff per audit partner.	-Ratio of partners chargeable hours to chargeable hours of all other engagement personnel; -Ratio of audit managers' chargeable hours to chargeable hours of all staff below the rank of manager.
5	Years of experience.	-Number of years on engagement; -Number of years in present assignment -Number of years: (i) within the firm (ii) in the auditing profession.
6	Partners' workload.	-Average chargeable hours managed per audit engagement; -Number of public clients.
7	Industry expertise of audit personnel.	-Number of years of cumulative experience of partners, audit managers, specialists and engagement reviews.
8	Staff workload.	-Manager and staff average utilization percentage of current year and prior year actual; -Average hours worked per week.

9	Investment in development of new audit methodology and tools.	-Investment in engagement team as a percentage of revenue generated on engagement; -Investment in audit practice as a percentage of firms' revenue.
10	Staff turnover.	-Percentage of audit staff that have left the firm or reassigned to another audit engagement within the firm.
11	Independence.	-Anonymous independent survey of audit committee members overseeing one or more of firms' audit engagements to evaluate level and quality of communication between auditor and clients.
12	Technical resources support.	-Technical chargeable hours as percentage of total engagement hours.
13	Staff satisfaction survey.	-Percentage of audit staff with exceptional performance ratings on audit quality; -Percentage of staff with exceptional quality ratings above average; -Percentage of staff with low quality ratings.
14	External investigations.	-Internal quality reviews; -Technical competence testing' -Inspection.
15	Tone at the top.	-Independent survey of firm personnel; -Quality ratings and compensation.

Source: Researchers' compilations, 2020

Forensic investigation mechanism

The AICPA, in its Statement on Auditing Standards No. 99 (SAS 99), *Consideration of Fraud in a Financial Statement Audit* (AICPA, *Professional Standards*, vol. 1, AU sec. 316), states that an "auditor may respond to an identified risk of material misstatement due to fraud by assigning forensic specialists." SAS 99 suggests several procedures that are forensics in nature. These involve the performance of substantive tests or the application of methods and techniques of evidence collection based upon the possibility of fraud at various levels of management, including override of internal controls, falsification of financial statements, misappropriation of assets, and collusion. Examples include extended interviews of financial and non financial personnel, surprise audits including recounts of inventories, tests of low risk accounts, and special tests not ordinarily performed (SAS 99). Internal control, as defined by COSO (2009), is the process designed to help firms achieve its objectives in the effective and efficient use of resources, reliable financial reporting,

and compliance with applicable laws and regulations. Forensic accountants utilize accounting, auditing and investigation skills while conducting an investigation. These accountants are trained to look into the dispute in a number of ways. They often retained to analyze, interpret, summarize and present a complex data in manner which is understandable and probably supported. Also they are often involved in various activities such as investigating and analyzing financial evidence, developing computer program, exhibiting documents and presenting the evidence obtained (Coenen, 2005).

Evidence Gathering and Investigation Techniques

As observed by Ogbuji (2009) reported in Osisioma (2009), there are various evidence-gathering methods in use. In most cases a combination of various evidence-gathering techniques is required to support a report. Sometimes, the elements of inappropriateness are fraud rather than oversight. The forensic expert should be careful to choose the most suitable assignment. The techniques include:

i. Interviewing
   Interviewing is an important evidence-gathering technique. It helps to obtain information which establishes elements of a crime, provides economic motives behind the perpetration.
ii. Vulnerability and Internal Control Charts
   Vulnerability and internal control charts help the investigator determine the best probabilities where inappropriateness is likely to occur.
iii. Document Examination
   This technique uncovers concealment efforts of perpetrators by manipulating source documents.
iv. Employee Searches
   This technique involves examining an employee's desk locker, lunch box, etc. It is important not to violate a person's constitutional rights through illegal searches. Searches are legal if conducted in a proper manner and with adequate notice. If obtained illegally, evidence can be inadmissible in court.
v. Invigilation
   This technique involves the close supervision of suspects during an examination period. It can be effective in identifying who commits the fraud and where the fraud is occurring. It is particularly useful in catching fraud that is committed by independent suppliers, night watchmen, warehouse supervisors, purchasing agents, and cashiers. Its drawbacks are: high cost and low employee morale.
vi. Observation
   Observation is watching, looking, spying or snooping to gather evidence. These observations are sometimes recorded on various kinds of media. This can show how the fraud is being committed.
vii. Undercover

Undercover operations require an agent or informant. This technique could be used for major criminal acts, i.e., organized crime activities. It is important that the operation remains secret. It is also very dangerous for the undercover agent.

viii. Specific Item

Specific item evidence is locating and identifying specific documents and projects that show fraud has occurred. This can be with one or more documents, i.e., altered contract, many cancelled cheques, annual allocation of fund to never existing projects or white elephant projects.

Theoretical framework

Theory of the Fraud Diamond

Wolf and Hermanson (2004) proffer the Theory of the Fraud Diamond, in place of the fraud triangle. They argue that the fraud diamond offers a better view of the factors leading to fraud. They added a fourth variable (capability), to the three-factor theory of Cressey (1953). Capability means that, the fraud perpetrator must have the necessary traits, abilities, or positional authority to pull off his crime. Wolf and Hermanson believed that many frauds would not have occurred without the right person with the right capabilities implementing the details of the fraud. Capability was added to the three variables of the fraud triangle (pressure, opportunity and rationalization). Onodi et al (2016), developed fraud box-key model as an improvement on the fraud diamond by adding corporate governance as the fifth variable. They argue that corporate governance is the key that open or unlock fraud box. While good corporate governance lock-up the box, corporate governance dysfunction unlock fraud box.

Empirical Review

Olaoye and Dada, (2017), researched on the roles of auditors in fraud detection and prevention in Nigeria deposit money banks: Evidence from Southwest. The study employed survey design in which a set of questionnaire was administered on the selected banks in Southwest Nigeria. Multiple regression technique and ANOVA were used for the analysis. The results indicated that the level of fraud control in Nigerian banks during the period covered was low. The result also revealed that risk assessment management, system audit and verification of financial reports adopted by the banking industry in Southwest Nigeria limit the fraudulent activities among the Nigerian banks by 35, 13 and 18 percent respectively.

Iyodo, Agbaji & Abu (2016), examined the consequences of bank frauds on the growth of the Nigeria economy. The scope of the study was from 1995 to 2014 and secondary data were used, while regression analysis and SPSS application software were employed for data analysis. The study revealed that bank frauds have negative and significant consequences on the growth of Nigeria economy.

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. Their 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.

Ashamu, (2014), carried out a study aimed at evaluating the effect of Fraud Management in the Banking Industry: Evidence from Nigeria. This study employed secondary data obtained from the Nigeria Deposit Insurance Corporation (NDIC) and the Central Bank of Nigeria (CBN). The study equally employed ordinary least square regression method and findings revealed that fraud occurrence in banks has impact on the expected loss of banks' staff involvements in fraud and fraud occurrence are also determinants of the amount lost to fraud in banks.

Gbegi and Adebisi (2014), conducted a joint research which examined forensic audit Skills and Techniques in fraud investigation in the Nigerian public sector. The population of their study comprised 129 senior staff of the three anti-corruption agencies in Nigeria (EFCC, ICPC, and CCB). Questionnaires were used in collecting primary data while secondary data were obtained from EFCC, ICPC and CCB. The data generated for this study were used for the testing of hypotheses using Analysis of variance (ANOVA) and time series analysis with the aid of SPSS version 17.0. They found out that, forensic audit skills and techniques have a significant effect on uncovering and reducing fraud in the Nigerian public sector.

Okoye and Gbegi (2013), examined forensic audit as a tool for fraud detection and prevention in the public-sector organizations with reference to the Kogi State of Nigeria. They employed both primary and secondary sources of data while 370 questionnaires were administered to staff of five (5) selected ministries in Kogi State of Nigeria. Out of questionnaire distributed to those ministries 350 were filled and returned. They used tables and simple percentages to analyze the data and Analysis of Variance (ANOVA) was used to test their research hypotheses. The study found that the use of forensic audit does significantly reduce the occurrence of fraud cases in the public sector.

In the work of Izedonmi (2012), some basic and common financial crimes in corporate organizations, situating the focus on Nigeria, and by extension, the developing world was examined. Their review indicated that the motivations for

financial crimes were built around some risk factors, which include the incentive (or pressure, opportunity and rationalization) surrounding the financial criminals. They canvassed for the intervention of forensic audit 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.

Methodology

This study employed the use of the survey research. The population of the study consists of MDAs internal audit staff of Abia State. However, 100 members of staff were purposively selected and the research instrument that was used in collecting data for the study was questionnaire. Likert scale was used as follows: Strongly Agreed (SA) scored 5 points, Agreed (A) 4 points, Undecided (U) 3 points, Disagreed (D) 2 points and Strongly Disagreed (SD) 1 point. This order was reversed for all negatively worded items.

Model specification

The model adopted for this study is the multiple regression models thus:AQ = f (CCDA, NAT, LA). The above model is mathematically stated as thus:$AQ = ß_0 + ß_1CCDA + ß_2NAT + ß_3LA + e_i$

Where:

AQ = audit quality, CCDA = Computer Cross drive analysis, NAT = Network Audit Trail, LA = Live Analysis, $ß_0$ = Unknown constant to be estimated, $ß_1$- $ß_3$ = Unknown coefficients to be estimated, f = Depend upon or "is a function of" and e_i = Stochastic Error term.

Decision Rule: Reject the null hypothesis if the P-value of the test is less than 5%, otherwise accept it.

Table 4.1

Regression results between computer cross drive analysis and audit quality

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.900	.208		4.335	.000
	Computer cross drive analysis	.760	.047	.876	16.036	.000

a. Dependent Variable: Audit quality (See appendix I for detail)

Analysis on table 4.1 above and appendix I below revealed the following results:

Test results	Interpretations
P- value =.000 < .05	Decision: Accept alternate H_1 & reject H_0
R-square = 0.767 or 77%	77% of the sample variation in the dependent variable audit quality is explained or caused by the explanatory variable while 23% is unexplained.
Adjusted R^2 = 0.764 or 76%	The value of the adjusted R^2 is 0.764. This shows that the regression line which captures 76 per cent of the total variation in audit quality is caused by variation in the explanatory variable specified in the model with up to 24 per cent accounted for the stochastic error term.
F-Statistics = 257.143	The F-value of 257.143 is an indication that the model is statistically significant at 5 percent level of significant.
DW test = 0.40215	The test of autocorrelation using DW test shows that the D.W value of 0.40215 falls within the conclusive region of DW partition curve. Hence, we can clearly say that there is an existence of autocorrelation.

Table 4.2

Regression results between Network audit trail and audit quality

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.345	.132		10.156	.000
	Network audit trail	.723	.033	.928	21.972	.000

a. Dependent Variable: Audit quality (See appendix II for detail).

Analysis on table 4.2 above and appendix II below revealed the following results:

Test results	Interpretations
P- value =.000 < .05	Decision: Accept alternate H_1 & reject H_0
R-square = 0.861 or 86.1%	86.1% of the sample variation in the dependent variable audit quality is explained or caused by the explanatory variable while 13.9% is unexplained.
Adjusted R^2 = 0.859 or 85.9%	The value of the adjusted R^2 is 0.859. This shows that the regression line which captures 85.9 per cent of the total variation in audit quality is caused by variation in the explanatory variable specified in the model with up to 14.1 per cent accounted for the stochastic error term.

F-Statistics = 482.782	The F-value of 482.782 is an indication that the model is statistically significant at 5 percent level of significant.
DW test = 0.40844	The test of autocorrelation using DW test shows that the D.W value of 0.40844 falls within the conclusive region of DW partition curve. Hence, we can clearly say that there is an existence of autocorrelation.

Table 4.3
Regression results between live analysis and audit quality

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.250	.247		-5.062	.000
	Live analysis	1.292	.061	.922	21.055	.000

a. Dependent Variable: Audit quality (See appendix III for detail).

Analysis on table 4.3 above and appendix III below revealed the following results:

Test results	**Interpretations**
P- value =.000 < .05	Decision: Accept alternate H_1 & reject H_0
R-square = 0.850 or 85%	85% of the sample variation in the dependent variable audit quality is explained or caused by the explanatory variable while 15% is unexplained.
Adjusted R^2 = 0.848 or 84.8%	The value of the adjusted R^2 is 0.848. This shows that the regression line which captures 84.8 per cent of the total variation in audit quality is caused by variation in the explanatory variable specified in the model with up to 15.2 per cent accounted for the stochastic error term.
F-Statistics = 433.300	The F-value of 433.300 is an indication that the model is statistically significant at 5 percent level of significant.
DW test = 0.47300s	The test of autocorrelation using DW test shows that the D.W value of 0.47300 falls within the conclusive region of DW partition curve. Hence, we can clearly say that there is an existence of autocorrelation.

Findings

i). The analysis in appendix I revealed calculated t-statistics of 16.036 which is greater than the critical value (i.e.-1.96), the null hypothesis is rejected and the

alternative that computer cross drive analysis has a significant effect on audit quality was accepted.

ii). The calculated t-statistics in appendix II revealed 21.972 which is greater than the critical value (i.e.-1.96), here the null hypothesis is rejected and the alternative accepted that stated that network audit trail has significant effect on audit quality in MDAs in Nigeria.

iii). The calculated t-statistics under appendix III revealed 21.055 which is greater than the critical value (i.e.-1.96), this shows that null hypothesis is rejected and the alternative accepted and this means that live analysis has a significant effect on audit quality of MDAs in Nigeria.

Conclusion

In conclusion, this study has been able to show the need for computer forensics techniques in assurance investigations in the public sector. Public sector is very important in developing economy especially in Nigeria where government sets pace for every sector during budgetary process. The public service in Nigeria is riddled with corruption in high places and it has become a norm for public office holders to be corrupt making it difficult for the country to move forward. Good governance is concerned with the assessment of government performance relative to the attainment of its stated goals. It is a measure of the level of transparency, integrity, effectiveness, and efficiency in the application of scarce resources to satisfy the desires and aspirations of the citizens. The anti-corruption agencies like EFCC and ICPC are overwhelmed with the volume of fraud cases they turn in on daily basis resulting in plea bargaining in some situations. This study looked into the skill a forensic accountant must acquire to enable him effectively audit through the computer instead of auditing around the computer. Computer forensics techniques such as cross drive analysis, network audit trail and live analysis have been found to be effective in forensic investigation especially now that most frauds are perpetrated with the aid of internet services.

Recommendations

The following were recommended:

(i) Computer forensics procedures need to be followed during investigation and experts like the Certified Public Accountants should be engaged. Appropriate disciplinary action in accordance with the Provision of Public Service Rules should be implemented where there is evidence of fraud. Criminal prosecution may also be instituted as well as civil action to recover any losses of public money or property.

(ii) Training of accountants on computer forensics will enable them obtain required skills needed for investigation of high profile crime prevalent among public office holders. The government needs to support induction

and work related training, particularly for employees involved in internal control system and the financial regulations.

(iii) Since Information Technology and computer systems are the major tools for fraud perpetration, the MDAs should take advantage of the modern accounting and auditing software to enhance efficiency and smooth operation of government business.

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