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Effects of Forensic Accounting Techniques on Financial Crime in Plateau State Internal Revenue Service, Nigeria

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ABSTRACT

The study investigated the effect of forensic Accounting Techniques on financial crimes in Nigeria with a study of Plateau State Internal Revenue Service in Plateau State. A survey design was adopted for the study. In this study the population is the staff of Plateau State Internal Revenue Service. The service has a total population of 376 staff. Taro Yamane formula for sample size determination was used to ascertain the sample size for this study to be 194. The study employed the use of structured questionnaire as method of data collection and the hypotheses were tested using multiple regression as method of data analysis. Findings shows that data mining technique had a positive and significant effect on financial crime in Nigeria; ratio analysis technique had a negative and significant effect on financial crime in Nigeria and analyzing accounting records techniques have positive and significant effect on financial crime in Nigeria. The study recommended Plateau State Internal Revenue Service in Nigeria should select data mining software that integrates with existing accounting systems and Plateau State Internal Revenue Service in Nigeria should maintain the services of forensic accountants to review their financial statements and transactions at the end of the period of transactions.

Keywords: *Forensic Accounting Techniques, Financial Crime, Data Mining Technique, Analysis Technique, Analyzing Accounting Records Techniques, Plateau State Internal Revenue Service*

1.0 Introduction

One of the most prevalent issues facing the world economy is financial crime and fraud. It has been a subject of continuous debate in society as the cause of retardation in developing economies. Financial crimes and scams in modern organizations are perennial and have affected diverse organizations, irrespective of their sizes, natures and types. Manipulation of documents or accounts, theft and embezzlement, money diversion, bribery, and corruption are examples of financial crimes (Nwoye & Ogbodo, 2021). Although no country is immune to fraud, developing nations and their numerous states bear the brunt of the problem. Today; modern organized financial crimes have appeared. Financial crimes such as employee theft, payroll frauds, fraudulent billing systems, management theft, corporate frauds, insurance fraud, embezzlement, bribery, bankruptcy, security frau, among others, have taken the centre stage in the scheme of things; and on the scale of private, public and governmental preference. Financial crimes today have grown wild, and the emergence of computer software coupled with the advent of internet facilities has compounded the problem of financial crimes. Besides, the detection or minimization of these crimes are made more difficult and committing these crimes much easier. All these, no doubt, remain outside the ambit of the statutory auditor to report on except the auditor placed on inquiry. The statutory auditor is not primarily bound to detect fraud and errors (Uduehe, et al., 2024). The field of forensic accounting, often known as forensic accountancy or financial forensics, focuses on examining and uncovering financial misconduct

that businesses may commit internally. Financial accountants are required to use a variety of skills to identify fraud in the financial reporting process in order to detect financial report misbehavior. Some of the abilities include auditing, research, and accounting abilities that allow them to look into the financials of businesses or people (Rezaee & Wang, 2019). Investigations into economic losses resulting from torts or contract breaches are just one of the many topics that forensic accounting covers. Additionally, they look into business security fraud, tax fraud, and money laundering.

Business valuation, insolvency, and computer forensics are further fields that forensic accounting can be used in. In addition, forensic accountants can examine the financial records of a company and provide a report that can be used as evidence in court. In other words, they look beyond only business data and present knowledge to deal with business realities. Because of this, financial accounting is frequently used in court to explain financial crimes involving fraud or financial embezzlement. According to Gbegi and Adebisi (2014), forensic accounting techniques and skills could be used to investigate fraud cases because external auditors may not have the necessary training to deal with contemporary frauds like security fraud, embezzlement, bankruptcy, contract disputes, and potential illegal financial transactions. Prior to the creation of the Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices Commission (ICPC), successive governments dealt with corruption cases by establishing ad hoc bodies such as the Okigbo panel, banks and miscellaneous offenses tribunal, special military tribunals, and more. None of these initiatives appear to have been successful (Adegbie & Fakile, 2012). The EFCC and ICPC were established by the Obasanjo government as the institutions that would operate continuously. There are, seemingly, inadequate competent professionals to handle cases of corruption as alluded to by Ribadu (2006) and the judicial system in Nigeria is slow leading to delay in the prosecution process. The past chairman of EFCC, Waziri (2011) complained of unnecessary delay by the judiciary in prosecuting persons accused of corruption.

For the court to be able to deliver judgments without delay, investigation must be thorough. EFCC must therefore ensure that competent personnel handle investigation on corruption and other financial crimes. This is where the expertise of forensic accountants is required hence this study examined the need for application of forensic accounting technique to successfully investigate and detect cases of corruption in Nigeria since it was successfully employed by the Central Bank of Nigeria and Securities and Exchange Commission in 2009 and 2011 respectively. In Nigeria, financial crime has become a common occurrence. The majority of fraudulent activities occurred through mobile transactions, followed by computer/web fraud and Point of Sale (POS) related transactions, according to the Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC) audited account of 2022. These three transaction kinds were the most common. Of the total amount lost to fraud, 34.07% (₦161 million) came via mobile fraud. This was followed by Computer/web fraud which accounted for 27.69% (₦130 million) while fraudulent withdrawals represented 24.72% at ₦116 million. In the last quarter of 2022, the total amount of fraud stood at ₦12.58 billion (Ekanem, 2023).
Enofe et al. (2013) found out that forensic accounting services provide firms with the necessary tools to deter criminal and fraudulent activities but does not curb criminal and fraudulent activities. Although the Economic and Financial Crime Commission has not yet adopted forensic accounting techniques, Gbegi and Adebisi (2014) found that forensic accounting skills and techniques have a significant impact on identifying and reducing fraud in the Nigerian public sector (Owolabi, et al., 2013). Adegbie and Fakile (2012) posited that forensic accounting is a financial strategy to curb and resolve economic and financial crimes in Nigerian economy. Mukoro, et al., (2013) observed that forensic accountants play significant role in curbing crime and corrupt practices in any public sector since they provide the mechanism to

hold people accountable, such that those who manage resources in a fiduciary capacity do not easily abuse that trust without detection.

The rapid advancement in e-commerce and the internet have extended fraud opportunities; this is in addition of series of fraud that have been committed both in private and public sector of the economy. As new techniques of doing things are emerging so also new ideas are developed for perpetrating fraud. These in no doubt financial crimes are committed under the supervision of the internal auditors and external auditors, yet financial crimes are been committed on a daily basis in public sectors. Based on the above contradicting findings, this study intends to reconcile the different positions taken by these various authors on whether forensic accounting techniques affects financial crime in Nigeria or not. None of the studies mentioned above use the combinations of the techniques of Data Mining, ratio analysis and analyzing Accounting Records as a variable to test its effect on financial crime in Plateau State. This study fills this gap by examining the effect of forensic accounting techniques on financial crime in Nigeria by narrowing the scope to Plateau State Internal Revenue Service (PSIRS). The specific objectives of this study are to:

i. examine the effect of data mining technique on financial crime in Nigeria.
ii. examine the effect of ratio analysis technique and financial crime in Nigeria
iii. examine the effect of analyzing accounting records techniques on financial crime in Nigeria

2.0 LITERATURE REVIEW

2.1 Conceptual review

2.1.1 Concept of Forensic Accounting

Forensic accounting is an approach to accounting which utilizes accounting, auditing, and investigative skills to conduct an examination into the finances of an individual or business (Schmitt, 2022). Forensic accounting is the area of accounting practice wherein the accounts are examined by independent accounts with the prenotion objective of determining financial misconduct and reporting fraud. It is usually conducted by an independent accounting and auditing firms appointed by regulators, the management, or sometimes the government agencies to check alleged wrongdoing in the financial accounting system of the organisation under scrutiny of misconduct (Vineeth, 2023). Forensic accounting is a special practice of accounting where a financial professional, known as a forensic accountant, audits and investigates information and prepares it to be used in court. The practice of examining accounting records, financial statements, and other relevant financial documents is known as forensic accounting. The investigation's findings are mostly utilised for conflict resolution and legal assistance (Sujaini, 2023). Forensic accounting uses accounting, auditing, and investigative skills to conduct investigations into theft and fraud. It encompasses litigation support investigative accounting. Forensic accounting, forensic accountancy, or financial forensics is the specialty practice area of accounting that describes engagements that result from actual or anticipated disputes or ligation. “Forensic means “suitable for use in a court of law”, and it is to that standard and potential outcome that forensic accountants generally have to work. Forensic accountants, also referred to as forensic auditors or investigative auditors, often have to give expert evidence at the eventual trial. The Association of Certified Fraud Examiners defined forensic accounting as the use of expertise in potential or actual civil or criminal disputes, including generally accepted accounting and auditing principles to establish losses of profit, income, property, or damage, estimates of internal controls, frauds, and other similar things that involve integrating accounting expertise into the legal system (ACFE, 2022). The broad field of professional activity known as forensic accounting offers fraud investigation

services. In actuality, a forensic accountant is crucial in identifying, stopping, and bringing criminal cases against those who engage in financial fraud, money laundering, and identity theft (Honigsberg, 2020). It is often described as accounting practices and principles used to legal disputes (Abdulrahman, 2020).

2.1.2 Concept Forensic Accounting Techniques

Forensic accounting techniques are used by investigative accountants to look at financial records, dig into their background and present a clear and concise account of what they mean and how they impact a particular matter that they have been asked to consider (Jaxa, 2023). Forensic accounting techniques are not the same as normal accounting methods, such as auditing techniques or methods for considering tax issues, but they may include the use of these skills along with investigation techniques, legal understanding and a natural tenacious desire to uncover a hidden issue (Tally, 2022). Forensic accounting techniques are the application and practices of knowledge and skills to help resolve criminal issues in financial misappropriation which requires legal and accounting representations. Eke & Okoh (2019) stated that the proper understanding of the forensic accounting techniques will assist in identifying the crime cases, the investigative and resolution processes so as be a good witness in report presentation in the court. The forensic accountant should have deep knowledge of law and accounting in displaying the skills and have a good representation in the court.

2.1.3 Concept of Data Mining Technique

Data mining is the process of analyzing dense volumes of data to find patterns, discover trends, and gain insight into how that data can be used. Data miners can then use those findings to make decisions or predict an outcome (Stedman, 2023). Sorting through massive data sets to find patterns and connections that can aid in data analysis to address business issues is known as data mining. Data mining techniques and tools enable enterprises to predict future trends and make more-informed business decisions (Hughes, 2023). Data mining techniques and tools enable enterprises to predict future trends and make more-informed business decisions. One of the fundamental fields of data science, which use sophisticated analytics methods to extract valuable information from data sets, is data mining, a crucial component of data analytics as a whole. At a more granular level, data mining is a step in the knowledge discovery in databases (KDD) process, a data science methodology for gathering, processing and analyzing data (Korolov, 2023). Data mining is a crucial component of successful analytics initiatives in organizations. The information it generates can be used in business intelligence (BI) and advanced analytics applications that involve analysis of historical data, as well as real-time analytics applications that examine streaming data as it's created or collected. Planning business strategy and managing operations are aided in many ways by efficient data mining. That includes customer-facing functions such as marketing, advertising, sales and customer support, plus manufacturing, supply chain management, finance and HR. Data mining supports fraud detection, risk management, cybersecurity planning and many other critical business use cases. It also plays an important role in healthcare, government, scientific research, mathematics, sports and more (Stedman, 2023).

This is a technique used by forensic accountants to detect hidden and large volume of transactions. It mines large volume of transaction through grouping. It is used for discovering, predicting and an analyzing deviation. Data mining is the process of using specialized software to look for patterns, correlations, and anomalies in databases in order to predict outcomes. It facilitates the extraction of hidden predictive information from large databases and can assist businesses in identifying patterns, anomalies, and other strange behaviors, enabling them to take proactive knowledge-driven decisions. Data mining software is particularly helpful in

detecting fraud since it has scripting skills and can scan datasets from organizations for anomalies and suspicious patterns that are signs of fraud. This method is implemented using computer algorithms created specifically for this task, and it relies on trying to mine a sizable volume of data in search of any new hidden or unexpected patterns or information.

Data mining is the process of finding anomalies, patterns and correlations within large data sets to predict outcomes. Businesses can also utilize data mining to transform unprocessed data into insightful knowledge. Businesses may learn more about their customers, create more successful marketing campaigns, boost sales, and cut expenses by utilizing software to search for patterns in massive data sets. A formidable new technique with enormous potential to assist businesses in concentrating on the most crucial data in their warehouses is data mining, which is the extraction of hidden predictive information from massive databases. Data mining tool predicts future trends and behaviors allowing Businesses to make proactive knowledge driven decisions. The automated prospective analyses offered by data mining move beyond the analyses of past events provided by retrospective tools typical of decision support systems. Data mining help Banks understand their customer base as well as the billions of transactions at the heart of the financial system. Data mining helps financial services Companies get better view of market risks, detect fraud faster, manage regulatory compliance obligations and get optimal returns on their marketing investments.

2.1.4 Ratio Analysis Technique

The use of ratio analysis to test the financial health of an entity with the relevant ratios such as gearing and liquidation ratios. Ratio analysis is used as a forensic accounting technique to assess data based on benchmark, industry, or historical data. It detects fraud by studying data patterns to identify potentially deceptive transactions. Ratio analysis is used as a forensic accounting technique to assess data on a historical, sectoral, or benchmark basis. By examining data trends to find possibly fraudulent transactions, it can spot fraud. Finding the connections between different financial statement items and these items and nonfinancial data is done through ratio analysis. While a horizontal analysis examines the ratio of change in several financial statement items over a given period, a vertical analysis compares features of a financial statement to a common base item. Contrarily, vertical analysis transforms financial figures into percentages. The method is especially useful for detecting fraud because percentages are easily comprehended by all people. When examining changes in the income statement using vertical analysis, gross sales are set to 100% and all other numbers are converted to a percentage of sales. The horizontal analysis looks at alterations throughout time. Horizontal analysis converts changes in quantities from period to period to percentages, whereas ratios and vertical analysis convert statements to numbers that are easier to interpret and compare the data from period to period. This method is used to analyze digital data ratios in order to find signs of fraud operations (Jamil, 2012).

2.1.5 Concept of Reviewing Financial Statement

Financial statements are key tools businesses use to track and provide insights into a company's overall financial performance and health. These reports give an overview of a company's cash flows, operational outcomes, and financial status. While financial statements are used internally to guide management decisions, they are also used by external stakeholders such as investors, creditors, analysts, and regulators. Financial statements aid in making decisions about investing in a company, lending money to a company, or providing other forms of financing. Balance sheets, income statements, and cash flow statements are the three primary categories of financial statements. Forensic accountant is required to have special skills in inspecting documents for authenticity, alteration, forgery or counterfeiting. Hence, by possessing such skills, the forensic accountant in carrying out his duties can easily detect errors, fraudulent

activities and omissions thereby preventing and reducing fraudulent activities (Deshi & Freeman, 2022). According to Zimbleman et al. (2012), a forensic accountant is responsible for analyzing and identifying the kinds of fraud that could occur and their symptoms. These are compiled using Generally Accepted Accounting Principles (GAAP). GAAP is a set of guidelines and standards U.S.-based companies must follow when preparing their financial statements. The balance sheet is a financial statement that provides an overview of a company's assets, liabilities, and equity. It is employed to evaluate the financial status of a business at a specific moment in time. Accounting records are all of the documentation and books involved in the preparation of financial statements or records relevant to audits and financial reviews. Accounting records include records of assets and liabilities, monetary transactions, ledgers, journals, and any supporting documents such as checks and invoices.

Accounting records are often reviewed for audits, compliance checks, or other business-related necessities (Kingsley et al., 2020). A forensic accountant in carrying out his function reconstructs incomplete accounting records to settle for example insurance claims, over inventory valuation, proving money laundering activities by reconstructing cash transactions (Owojori & Asaolu, 2009). Cabole (2009) shows that a forensic accountant must be an expert in financial matters and must have legal knowledge which could enable him to detect fraudulent activities which are to be presented in a lawsuit. Kingsley et al. (2020) said that in order to combat fraudulent activities, the forensic accountant with his skills (Technological, communications and expertise skills) in accounting knowledge can analyze accounting records and reconstruct incomplete accounting records, hence helping to detect fraud and ensuring good internal control system and good corporate governance. A forensic accountant in carrying out his function reconstructs incomplete accounting records to settle for example insurance claims, over inventory valuation, proving money laundering activities by reconstructing cash transactions. Forensic accountant must be an expert in financial matters and must have legal knowledge which could enable him to detect fraudulent activities which are to be presented in a lawsuit (Kingsley et al., 2020)

2.1.6 Concept of Financial crime

According to Emeh and Obi (2013), it is preferable to avoid defining the phrase "financial crime" in order to prevent males from coming up with techniques to perpetrate fraud that could avoid such definitions. No internationally accepted definition of financial crime exists. Rather, the term expresses different concepts depending on the jurisdiction and on the context. Okafor (2004) also reported that financial crime is a generic term and embraces all the multifarious means which human ingenuity can devise, which are resorted to by one individual to get advantage over another in false representation. Since crime encompasses unfair methods of deceiving others as well as surprise, trickery, and cunning, no clear-cut guideline can be established as a universal principle. According to Gottschalk (2010), financial crimes are diverse, committed by both persons and institutions, and are divided into four categories: fraud, theft, manipulation, and corruption. According to Okoye and Gbegi (2013), a victim's reliance on the statement, damages, and a materially false statement made with the purpose to deceive (scanter) are the three components needed to establish fraud under common law. Nwaze (2012) defines fraud as a predetermined and planned deceptive process or device that is usually used by an individual or group of individuals with the express purpose of defrauding another person or organization in order to gain an unfair advantage that would not have arisen in the absence of such deceptive procedure. According to Ramamoorti (2007), fraud is a human activity that involves deceit, deliberate intent, intense desire, fear of being caught, betrayal of trust, and justification. According to Gottschalk (2010) fraud crimes includes: Advance fee fraud, bank fraud, cheque fraud, click fraud, consumer fraud, credit card fraud, embezzlement fraud, hedge fund fraud, identity fraud, mortgage fraud, occupational fraud and subsidy fraud. According to

the International Monetary Fund (2001), financial crime is defined broadly as any non-violent crime that causes financial damage. When a financial institution is involved, the term financial sector crime is used.

According to the Federal Bureau of Investigation (FBI, 2002), financial crimes are defined by deceit, concealment, or breach of trust and are not reliant on the use or threat of physical force or violence. These crimes are carried out by people and organisations in order to gain an advantage for themselves or their businesses. The FBI focuses its financial crimes investigations on such criminal activities as corporate fraud, securities and commodities fraud, health care fraud, financial institution fraud, mortgage fraud, insurance fraud, mass marketing fraud and money laundering. These are the identified priority crime problem areas of the Financial Crimes Section (FCS) of the FBI. Financial crimes may be traceable to some of the enumerated aspects of corruption, e.g., embezzlement, theft from public funds, bribery, kickbacks, public corruption, abuse of discretion and abuse of public power for extortion. Usually, huge amounts stolen from these sources, which cannot be legitimately explained as earnings, are siphoned and hidden across the borders to foreign banks regarded as safe haven (Owolabi et al., 2013). Financial crimes, which include the illegal conversion of property ownership to one's own personal use and benefit, are crimes against property (Eiya & Otalor, 2013). Financial crimes include any form of fraud, narcotics trafficking, money laundering, embezzlement, bribery, looting, corrupt practices, illegal arms deal, smuggling, and human trafficking.

Financial crimes include any nonviolent criminal and illicit activity committed with the objectives of earning wealth illegally by an individual, in a group, or in an organized manner by violating existing legislation governing the economic activities of government and its administration (EFCC, 2014). Financial crimes can include fraud, which can take the form of (cheque fraud, credit card fraud, mortgage fraud, securities fraud (including insider trading, bank fraud, payment (point of sale fraud, health care fraud, and so on), theft, scams or confidence tricks, tax evasion, bribery, embezzlement, identity theft, money laundering, forgery and counterfeiting, including the creation of counterfeit money and consumer gouging. Williams (2013) incorporates corruptions to his description of financial crimes. Other components of fraud cited in Williams (2013) description include bribes cronyism, nepotism, political donation, kickbacks, artificial pricing and frauds of all kinds. The array of components of financial crimes, some of which are highlighted above, is not exhaustive. The EFCC Act of 2004 attempts to capture the variety of economic and financial crimes found either within or outside the organization. The EFCC Act of 2004 defines "violent, criminal, and illicit activities committed with the objective of earning wealth illegally in a manner that violates existing legislation." This includes fraud, narcotic drug trafficking, money laundering, embezzlement, bribery, looting, corrupt malpractices, child labour, illegal oil bunkering and mining, tax evasion, and foreign exchange malpractice, including counterfeiting. This definition is all-embracing and conceivably includes financial crimes in corporate organization and those discussed by provision authors (William, 2013). At the level of corporate organizations, financial crimes were known to have led to the collapse of such organizations. Cotton (2010) blames corporate malfeasance for the failure of Enron, WorldCom, Tyco, and Adelphia. It was claimed that $460 billion was lost. In Nigeria, Cadbury Nig Plc was said to have lost 15 billion Naira as a result of management's illegal manipulation of the company's accounts. About one trillion naira was said to have been lost in the nine collapsed commercial banks in Nigeria due to various financial misdeeds. The EFCC Act's investigation into this is currently ongoing. Financial crime often comes in many forms and is committed by both people and organizations. According to Karwai (2013), financial fraud in businesses can take many different forms and employ a variety of tactics. Fraud can be divided into two categories: the kind of fraudsters who

commit it, and the techniques they use. Fraud can be divided into three kinds, namely internal, external, and mixed frauds, depending on the characteristics of the fraudsters.

2.2 Theoretical Review

2.2.1 Fraud Management Lifecycle Theory

This theory was propounded by Wilhelm in the year 2004. The fraud management lifecycle is a network lifecycle where each stage in the life cycle is an aggregated entity that is made up of interrelated, interdependent and independent actions, functions and operations (Albrecht et al., 2009). The fraud management lifecycle is made up of eight stages which include prevention, detection, investigation, deterrence, analysis, mitigation, policy and prosecution stage. Deterrence is achieved through creating fear of consequences or difficulty of perpetration, to turn aside, discourage or prevent fraudulent activity from being attempted. Policy must seek to balance deterrent value, loss reduction, sales volume, operational scalability and cost effectiveness. Policy development involves constantly reassembling the situations disassembled in the analysis stage, by taking advantage of the knowledge gained by analysis, combining it with internal, external and interactive environmental factors in order to craft policies that address the whole, while leveraging the knowledge of the parts. Because they must consider the needs of the entire commercial operation as well as all disciplines within the fraud management department, policy development professionals are typically the leaders within the fraud management organization (Hassink et al., 2010). The investigation stage involves obtaining enough evidence and information to stop fraudulent activity, to obtain recovery of assets or restitution and to provide information and support for the successful prosecution and conviction of the fraudsters (Albrecht, et al., 2009).

2.2.2 White-Collar Crime Theory

The study is anchored on the White-collar crime theory propounded by Sutherland in 1939. White-collar criminals are opportunists, who over time take advantage of their circumstances and position to accumulate financial gain (Eze & Okoye, 2019). Sutherland was the first to coin the term and hypothesis “white-collar criminals”. The study defined his idea as a “crime committed by a person with respectability and high social status in the course of his occupation (Sutherland 1949, cited in Okoye & Gbegi, 2013). They are educated, intelligent, affluent, individuals who are qualified enough to get a job that allows them the unmonitored access to an often-large sum of money. A crime differs only in the backgrounds and characteristics of the perpetrators. Most, if not all, white-collar criminals are distinguished by a privileged life, a large proportion of them stemming from class inequality. It is estimated that much of white-collar crime goes undetected or, if discovered, goes undetected. Due to the high status of the perpetrators of these crimes, a highly skilled and experienced investigator or investigator like the Professional Forensic Accountant is required to prevent such high-profile fraud from occurring. Hence, the study is anchored on white-collar crime theory as the theory explains the rudiments and expectancies of forensic accounting techniques in combating financial crime.

2.3 Empirical Review

Obot and Effiong (2025) examined forensic accounting techniques as tools for Nigerian Practitioners. The study adopts a qualitative approach, involving case studies and document analysis. The case study method provided a deep exploration of specific instances where forensic accounting techniques were successfully employed to uncover financial fraud in Nigeria; while the document analysis method involved a systematic review of existing literature, regulatory frameworks, and policies that govern forensic accounting in Nigeria. The

case study examined public sector embezzlement case involving inflated contracts where over NGN 2 billion was misappropriated. The approach considered Data Collection, Data Mining, Benford's Law, Digital Forensics and Comparative Analysis as tool. IDEA (Interactive Data Extraction and Analysis) and ACL (Audit Command Language) were used for data mining and fraud detection. The results for case 1 and case 2 showed that NGN 1.2 billion and NGN 200 million were recovered respectively and repayment agreements with some beneficiaries. On the whole, the findings underscored the need for enhanced internal controls, continuous monitoring, and capacity building to strengthen the financial sector against similar risks in the future.

Anipiriworima, et al. (2025) examined the effect of forensic accounting skills on fraud management of selected federal Ministries, Departments and Agencies (MDAs) in Nigeria. The study used primary sources of data, a cross-sectional research design, a quantitative research approach, and a structured closed-ended questionnaire with five-point Likert scale options. A stratified sampling technique was used for the selection of the four federal ministries, departments, and agencies in Nigeria. The study was underpinned by both profession theory and fraud pentagon theory. The SPSS version 23 software statistical package was used for the coding of the questionnaire and data analysis for running both descriptive statistics, correlation, and multiple regression analysis. The regression results indicated that accounting and auditing skills and forensic investigation skills have a positive and significant effect on the fraud management. This suggests that the fraud management of Nigeria's federal ministries, departments, and agencies will grow by one unit for every unit improvement in accounting, auditing, and forensic investigation skills. The study recommended that the government should provide avenues for training forensic accounting experts. Through the effective performance of forensic accountants in the country, the Nigerian government can restore its integrity both locally and internationally.

Uche et al. (2025) investigated the effect of forensic accounting techniques on fraud detection by professional accounting firms in Plateau State. A survey design was adopted for the study. The population of the study consisted of 6 accounting and auditing professional firms in Plateau State. Oral interview was used to ascertain the total number of staff from these firms totaling 203, whereby a sample size of 135 was determined using Taro Yamane formula. A total of 135 copies of questionnaire were administered on the selected respondents. However, 129 copies were retrieved. The study employed the use of structured questionnaire as method of data collection and the hypotheses were tested using multiple regression as method of data analysis. Findings shows that data mining technique had a positive and significant effect on fraud detection by Professional Accounting Firms in Plateau State; reviewing financial statement technique had a negative and significant effect on fraud detection by Professional Accounting Firms in Plateau State; analyzing accounting records techniques have positive and not significant effect on fraud detection by Professional Accounting Firms in Plateau State and Internal control charts have positive and significant effect on fraud detection by Professional Accounting Firms in Plateau State. The study recommended Professional Accounting Firms and other private organizations should select data mining software that integrates with existing accounting systems; Professional accounting firms should maintain the services of forensic accountants to review their financial statements and transactions at the end of the period of transactions.

Uduehe et al. (2024) ascertained the relationship between forensic accounting techniques and fraud management of commercial banks in Awka-South Anambra State, Nigeria. Descriptive survey research design was used for the study. The population of this study consisted of seven hundred and fifty eighty (758) staff of the thirteen (13) commercial banks in Awka South, Anambra State Nigeria from which a sample size of 262 was selected. Primary data for the

study were collected from the respondents using structured questionnaire. The tools for descriptive analysis were percentage analysis, frequency distribution and mean. Hypotheses were tested using regression analysis. The finding of the study showed that: there is a significant positive relationship between data mining techniques and artificial intelligence biometrics for fraud management in listed commercial banks; computer-assisted audit techniques significantly and positively relate with artificial intelligence biometrics for fraud management; ratio analysis techniques have a significant and positive relationship with artificial intelligence biometrics for fraud management; public documents review techniques have a significant and positive relationship with artificial intelligence biometrics for fraud management. The study recommends that the Information Technology and data analytics teams of listed commercial banks in Awka-South should enhance their data mining capabilities to better integrate with AI biometrics systems, thereby improving fraud detection effectiveness.

Ogwiji (2023) considered Forensic Accounting and Financial Crimes: An Empirical Evidence from Operatives and Trainers of the Economic and Financial Crimes Commission, Academy, Nigeria. The study employed cross-sectional design and a survey method of the 110 questionnaires distributed, 53 questionnaires were returned valid and analysed. The main statistical analytic tools utilised in the study were IBM SPSS version 20.0 and PLS-SEM (SmartPLS 3.0). The results showed that when it comes to fraud prevention, detection, management, and response, the forensic accountant attributes have far higher levels of KE and LSS on FC. Also, investigation of corruption discourages financial crime though not on high. The implication of this study might result in the overall reduction of fraud and fraudulent acts, promote institutional, regulatory and legal framework, and create awareness amongst the accounting and auditing institutions in the Nigerian public sector.

Hashem et al. (2024) assessed the Impact of Forensic Accounting Techniques in Detecting Financial Fraud Survey Study of The Opinions of Certified Accountants in Syria. The purpose of the study was to investigate the impact of forensic accounting techniques used by certified accountants in detecting financial fraud in the companies they audit. The data was collected from primary sources based on a questionnaire distributed to (120) certified accountants who are practicing the profession for the year 2023 and are allowed to audit financial companies in Syria. The results showed a statistically significant impact of the forensic accounting techniques (financial ratio analysis - trend analysis - data mining - critical point audit - relative size theory) used by the certified accountant in detecting financial fraud in Syria. It showed a positive and statistically significant effect of the forensic accounting techniques used by the certified accountant in detecting financial fraud in Syria after controlling years of experience.

3.0 METHODOLOGY

A survey design was adopted for the study. Data collection method refers to the systematic procedures applied by a researcher to gather and collect data use in the study. This study employed the use of primary sources of data using structured questionnaire. This research work was designed to evaluate the effects of forensic accounting techniques on financial crime in Plateau State. In this study the population would be the workers of Plateau State Board of Internal Revenue Service in Plateau State. In this study the population is the staff of Plateau State Board of Internal Revenue Service. The service has a total population of 376 staff. Using Taro Yamani, the sample size was calculated to 194. It is on the sample size of 194 that questionnaire distribution was based using convenient sampling techniques to the staff of Plateau State Board of Internal Revenue Service in Plateau State that makes up my sample populations. The data were analyzed using the multiple regression analysis with the help of Statistical Packages for Social Sciences (SPSS) version 26.

4.0 RESULT AND DISCUSSION

Table 1: *Descriptive statistics*

	Mean	Std. Deviation	Minimum	Maximum
Financial Crime	2.1717	.68521	1.14	4.29
Data Mining Technique	1.9194	.60752	1.00	3.40
Ratio analysis technique	2.3938	.93305	1.00	4.40
Analyzing accounting records techniques	2.4388	.87610	1.00	3.80

Source: Researcher's compilation from SPSS v.26 Output (2026)

Financial crime has a mean of 2.1717, a standard deviation of 0.68521, a minimum of 1.14 and a maximum of 4.29, indicating that financial crime is highly dispersed because the mean is far from the standard deviation. Data mining technique (DMT) has a mean of 1.9194 with a standard deviation of 0.60752, minimum and maximum values of 1.00 and 3.40 respectively suggesting a wide dispersion. The mean of Ratio analysis technique is 2.3938, with a standard deviation of 0.93305 and minimum and maximum values of 1 and 4.40, respectively. Also, Ratio analysis technique had a mean and standard deviation values of 2.3938 and 0.98328 respectively and maintaining the same minimum with financial statement technique but with the maximum of 4.00, implying that accounting records can be analyse through different methods depending on the kind of fraud needed to be unveiled. Lastly, analyzing accounting records techniques show that there is wide dispersion with the mean of 2.4388 and standard deviation of 0.87610, having minimum and maximum of 1.00 and 3.80 respectively. The descriptive statistics for the study variables are presented in Table 1 indicate that the mean score of the latent variables range between 1.92 and 2.44 on a 5- point Likert scale, while the standard deviation ranges between 0.61 and 0.98. The standard deviations are small relative to their respective means, implying that the statistical mean provides a good fit of the observed data.

4.2 Test of hypotheses

Multiple regression analysis was then employed to test the effect of the predictors on the criterion variable and hypotheses earlier formulated in the study. A multiple regression was run to test the effect. Table 2 presents the results.

Table 2: *Table of Coefficient*

Model		Unstandardized Coefficient B	Std. Error	Standardized Coefficient Beta	T	Sig.
1	(Constant)	1.298	.214		6.064	.000
	Data Mining Technique	.153	.083	.136	1.854	.006
	Ratio analysis technique	-.268	.058	-.366	-4.642	.000
	Analyzing accounting records techniques	.456	.071	.584	6.449	.000

Source: Researchers' compilation from SPSS v.26 Output (2026) a. Dependent Variable: Financial crime

Decision Rule

If the sig. value is less than 0.05, we reject the null hypothesis. Conversely, if the sig. value is greater than 0.05, then the null hypothesis is accepted. The study carried out the t-test to each beta coefficient in the fitted regression models. This indicates that there is a significant effect of data mining technique on financial crime in Nigeria, given β= 0.136, t= 1.854 and p-value of 0.006 < 0.05. It implies that for every unit increase in the forensic accounting there is an increase in financial crime by 0.136 units. This finding aligns with the study of Otaru and David (2023) who discovered that data mining analysis technique and technology technique had positive and significant effect on fraud detection and mitigation of listed banks in Nigeria. This finding is also in line with that of Mbasiti et al. (2021) who found that accounting data analysis technique had positive effect on prevention of revenue leakage in Nigerian public universities. It is also in line with the studies of İbrahim et al. (2022), Ewa (2022), Ogiriki and Appah (2018) who found out that all the measurements of forensic accounting and auditing techniques including data mining technique have positive significant effect on fraud in Nigeria.

From the second hypothesis, it indicates that ratio analysis technique on financial crime in Nigeria with β= -0.366, t= -4.642, p-value = 0.000 < 0.05. It implies that for every unit increase in ratio analysis technique there is a decrease in financial crime by 0.366 units. This finding is in line with the findings of Deshi and Freeman (2022), Aminian and Tahriri (2021), Ojukwu, et al. (2020), Okoye and Ndah (2019). This finding contradicts the study of Okunbor and Obaretin (2010).

Lastly, from the regression analysis run, given the coefficients in table 2 above, analyzing accounting records techniques have positive and significant effect on financial crime in Nigeria with β= 0.584, t= 6.449, p-value = 0.000<0.05. Thus, analyzing accounting records techniques have positive and significant effect on financial crime in Nigeria. The study findings agree with the study of Okunbor and Obaretin (2010) and Bangura (2020).

5.0 Conclusions and Recommendation

Based on findings, the study concludes as follows: firstly, the study has provided both empirical and statistical evidence on the utility of four independent variables that constitute; data mining techniques, ratio analysis technique and analyzing accounting records techniques on financial crime in Plateau State Board of Internal Revenue Service. The study concludes that forensic accounting data mining technique had a positive and significant effect on financial crime in Plateau State. Also, the study also concludes that forensic accounting ratio analysis technique had a negative and significant effect on financial crimes in Plateau State. This therefore provides evidence that the greater the ratio analysis technique, the higher the chance to detect financial crime in Plateau State. Furthermore, the study concludes that analyzing accounting records techniques have positive and significant effect on financial crime in Plateau State Board of Internal Revenue Service. Based on the findings of the study, it was recommended as that:

i. Plateau State Board of Internal Revenue Service should select data mining software that integrates with existing accounting systems. This would require that relevant data and software be chosen, extracted and integrated for efficient detection of fraud.
ii. Plateau State Board of Internal Revenue Service should employ the services of forensic accountants to help them unveil fraudulent records from their financial books and the analysis of ratio.
iii. Plateau State Board of Internal Revenue Service should determine critical analysis of accounting records techniques for financial reporting.

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