

**EVALUATING THE EFFECTIVENESS OF FORENSIC ACCOUNTING
COMPETENCIES IN COMBATING PUBLIC SECTOR FRAUD IN MINISTRY OF
FINANCE IN NORTHWESTERN NIGERIA**

Sulaimam Sabo

Department of Auditing and Forensics Accounting,
ANAN University, Kwall, Plateau State, Nigeria

Prof MUSA Farouk Adeiza

Department of Management Accounting and Performance Management
ANAN University, Kwall, Plateau State, Nigeria

Saidu, Ibrahim Halidu, Ph.D.

Department of Financial Reporting
ANAN University, Kwall, Plateau State, Nigeria
+2348037037875 saidu.halidu@gmail.com

Abdullahi Ya'u Usman

Department of Financial Reporting
ANAN University Kwall, Jos, Plateau State, Nigeria
ayau.absedu@gmail.com
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Abstract

This study examines the effectiveness of forensic accounting competencies, such as communication skills, technological skills, accounting and auditing skills, and auditor's self-efficacy, in combating fraud in finance ministries in Northwestern Nigeria. The primary objective is to evaluate how these competencies skills contribute to enhancing fraud detection and prevention in the public sector. Primary data were collected through structured questionnaires distributed to employees in finance ministries, including auditors, accountants, and forensic experts. The data were analyzed using regression techniques, allowing for an in-depth examination of the relationships between the dependent variable (fraud management) and the independent variables. The findings reveal that communication skills, technological skills, and accounting and auditing skills have significant positive effects on fraud management, while auditor's self-efficacy shows a positive but statistically insignificant relationship. These results underscore the importance of technical and behavioral fraud detection and Prevention competencies in addressing fraud challenges in the public sector. Based on the findings, the study recommends targeted training programs to enhance communication and technical skills, investments in advanced forensic tools, and the implementation of mentoring programs to build confidence among auditors. These measures are essential for strengthening fraud management frameworks and improving public sector accountability and transparency.

Keywords: Forensic Accounting competences, public sector fraud, fraud detection, fraud prevention

1.0 Introduction

Forensic accounting integrates investigative techniques, auditing expertise, and legal knowledge to uncover and prevent financial misconduct. The effectiveness of fraud management largely depends on the application of specialized forensic accounting skills, which include communication skills, technological proficiency, accounting and auditing expertise, and auditor self-efficacy. Communication skills enable forensic accountants to effectively present findings, collaborate with stakeholders, and provide expert testimony. Studies have shown that forensic accountants with strong communication skills are more successful in fraud detection and prosecution (Capras & Achim, 2023). Advances in digital forensics, artificial intelligence, and data analytics have transformed fraud detection, making technological proficiency an essential skill for forensic accountants. The ability to analyze financial transactions using sophisticated forensic tools enhances fraud detection accuracy (Modugu & Anyaduba, 2018). Strong auditing knowledge allows forensic accountants to scrutinize financial statements and detect fraudulent entries. Research highlights that forensic accountant with in-depth accounting knowledge is better equipped to manage fraud risks (Tijani & Bakare, 2020). Additionally, the confidence and resilience of auditors in detecting fraud play a crucial role in fraud management. Self-efficacy enables forensic accountants to persist in investigations, even in the face of complex fraudulent schemes (Hegazy et al., 2017).

These variables collectively contribute to the effectiveness of fraud management in public institutions. This study is motivated by the growing need to strengthen fraud detection mechanisms in Nigeria's ministries of finance. Despite the increasing adoption of forensic accounting practices, there remains a lack of empirical research on the specific skills that enhance fraud management in public sector institutions. By analyzing the impact of forensic accounting skills on fraud detection and prevention, this research seeks to provide actionable insights that can inform policy decisions and improve governance. Forensic accounting is a specialized field of accounting that involves applying accounting principles, methods, and techniques to investigate financial matters, detect fraud, resolve disputes, and provide litigation support (Investopedia, 2021).

The American institute of certified public Accounting (AICPA) defined forensic accountant as “the application of specialized knowledge and investigative skills possessed by CPA, to collect, analyze and evaluate evidential matter and to interpret and communicate findings in the courtroom, boardroom, or other legal administrative venue”. “Popva et al., (2014), defines forensic accounting as” the process from the implementation of any fraud investigation to the formation of accounting records after the discovery that they have been manipulated. Forensic accounting is a specialized field that combines accounting, auditing, and investigative techniques to help resolve legal issues and disputes. The field has a rich history, and its evolution has been shaped by various factors and contributors.

Forensic accounting can be traced to ancient Egypt. We find evidence of scribes being used by pharaohs to track value items, such as gold and grain. These scribes used to work in pairs and record transactions independent of each other, which served as a form of internal control. The same concept of independent record-keeping became increasingly important as court systems were developed to resolve disputes between parties. In the 13th century, courts frequently relied on accountants to resolve financial damages cases.

Very little is known about forensic accounting until 1817, when the first recorded case of an accountant testifying as an expert witness is noted in history books. In a Canadian case, a bankruptcy matter arose that required the determination of the value of an estate. The court allowed the accountant who examined the relevant accounts to testify about the matter.

Fraud is a persistent issue in the management of public funds worldwide, leading to significant financial losses and undermining trust in governmental institutions. In developed economies, stringent regulatory frameworks and technological advancements have facilitated the detection and management of fraudulent activities. For instance, in the United States, the Securities and Exchange Commission (SEC) enforces financial integrity through regulations that mandate corporate transparency, while the European Anti-Fraud Office (OLAF) actively investigates fraud and corruption in the European Union (Awolowo, 2019). These measures have contributed to the reduction of financial crimes and enhanced public trust in governance. However, despite these advancements, financial fraud remains a significant challenge, necessitating the continuous evolution of forensic accounting and fraud management practices.

In Africa, public sector fraud continues to hinder economic development and good governance. Weak regulatory institutions, political interference, and limited forensic accounting expertise have exacerbated fraudulent practices, particularly in government financial institutions (Ewa, 2022). The lack of robust fraud detection mechanisms in many African countries has led to increased misappropriation of funds, bribery, and financial statement fraud, thereby reducing the effectiveness of public administration (Aderibigbe, 2018). In response, governments have recognized the need for stronger forensic accounting practices to enhance financial oversight and accountability.

Nigeria, like many developing nations, faces significant challenges in managing fraud within its public sector, particularly in ministries responsible for finance. Corruption and financial mismanagement have historically plagued Nigerian government institutions, leading to lost public funds and diminished trust in governance (Adegbie & Fakile, 2020). Ministries of finance, which play a central role in budget allocation and financial management, have been at the forefront of fraudulent practices, necessitating urgent reforms. In recent years, forensic accounting has gained prominence as an essential tool for detecting and preventing financial crimes in Nigeria's public sector. The adoption of forensic accounting techniques in key government institutions is seen as a critical step towards improving transparency and accountability (Ozili, 2023).

The study of fraud management in the public sector has evolved significantly over the past decades, with forensic accounting emerging as a crucial field in combating financial crimes. Traditional fraud detection mechanisms, such as internal audits and external oversight, have proven insufficient in addressing the complexities of modern financial fraud. Research has highlighted the need for specialized forensic accounting skills, including investigative techniques, technology proficiency, and professional skepticism, to effectively detect and prevent fraud (Capras & Achim, 2023). Several studies have explored the role of forensic accounting in public sector fraud management. For example, Musa and Ademola (2017) examined how forensic accounting techniques enhance fraud detection in the Nigerian public sector and found that forensic auditing significantly improves financial transparency. Similarly, Odia and Ogedeu (2016) highlighted that forensic accounting is instrumental in curbing fraudulent activities in government ministries. However, while these studies recognize the

importance of forensic accounting, they often fail to provide a comprehensive analysis of the specific skills required for effective fraud management. This research seeks to bridge this gap by examining the distinct forensic accounting skills that contribute to fraud management in Nigerian finance ministries. The following hypotheses were being developed for the purpose of this research,

H1: Forensic accountant's communication skills have no significant effect on combating fraud in the State Ministries of finance in North-Western Nigeria.:.

H2: Forensic accountant's technological skills have no significant effect on combating fraud in the State Ministries of finance in North-Western Nigeria.3:

H3: Forensic accountant's accounting and auditing skills has no significant effect on combating fraud in the State Ministries of finance in North-Western Nigeria.

H4: Forensic auditors' self-efficacy has no significant effect on combating fraud in the State Ministries of finance in North-Western Nigeria are developed for the study.

2.0 Literature review

Forensic accounting has emerged as a key tool in this regard, offering a combination of investigative techniques, accounting expertise, and legal knowledge to detect and prevent fraud. By integrating forensic accounting into their fraud management systems, ministries of finance can enhance their capacity to detect irregularities, uncover fraudulent schemes, and respond to fraud in a timely and efficient manner (Alabi & Ogunde, 2021) Fraud management and known as the process of combating fraud refers to the strategies, processes, and actions taken to prevent, detect, and respond to fraudulent activities within an organization. According to Popoola et al. (2016), fraud management encompasses the application of various mechanisms to control financial and operational risks associated with fraud, focusing on mitigating losses and maintaining organizational integrity. Crumbley (2019) defines fraud management as the implementation of measures to detect, prevent, and respond to financial misconduct in order to protect an organization's assets. Similarly, Abdullahi and Mansor (2018) highlight fraud management as a comprehensive approach that involves the coordination of internal controls, fraud detection tools, and legal frameworks to address the risk of fraud. Drawing from these definitions, this study defines fraud management as the systematic application of both preventive and reactive mechanisms aimed at detecting, preventing, and responding to fraudulent activities, with a focus on reducing the financial and reputational impact of fraud on public institutions.

Fraud management is crucial in ensuring that public sector organizations, particularly ministries of finance, maintain transparency and accountability in managing public resources. The primary goal of fraud management is to create an environment where fraudulent activities are minimized through robust internal controls, regular audits, and the use of advanced fraud detection techniques. Ministries of finance, which are responsible for overseeing large budgets and managing national financial systems, are particularly vulnerable to fraud due to the complexity and scale of their operations (Adegbie & Fakile, 2020). Without effective fraud management strategies, ministries of finance can become susceptible to financial misappropriation, embezzlement, and other forms of corruption, which can significantly undermine national economic stability.

There are several key components of an effective fraud management system. First, preventive mechanisms such as internal controls, segregation of duties, and regular audits are essential in creating barriers to fraud (Ajibade & Salawu, 2017). Preventive controls work by reducing opportunities for fraudulent activities and ensuring that the financial activities of the organization are closely monitored. Second, fraud detection mechanisms, including the use of data analytics and forensic accounting, are crucial in identifying irregularities and patterns that may indicate fraudulent behavior. Detection tools help organizations uncover fraud early, reducing the potential for financial losses and allowing for swift corrective action (Afriyie et al., 2022).

In the Nigerian public sector, fraud management remains a significant challenge despite the establishment of anti-corruption agencies and legislative measures aimed at curbing fraudulent activities. While agencies such as the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and Other Related Offences Commission (ICPC) play vital roles in fraud detection and prosecution, internal fraud management systems within ministries are often weak and insufficiently resourced (Akeem & Abiola, 2018). This creates an environment where fraud can go undetected for extended periods, leading to severe financial losses and damage to public confidence. It is because of these that the need for specialized tools and skills for combating fraud is necessary.

Forensic accounting skills

Forensic accounting skills are the specialized abilities that forensic accountants utilize to investigate, detect, and prevent fraud. These skills include a combination of accounting knowledge, auditing expertise, investigative techniques, and legal proficiency (Alzahrane, 2024). According to Fadilah et al. (2019), forensic accounting skills are a blend of accounting knowledge and investigative techniques used to resolve financial crimes and provide legal evidence.

Forensic accounting skills contribute to fraud management by enabling organizations to uncover complex fraud schemes that may be difficult to detect through traditional auditing methods. For example, forensic accountants can use data analytics to identify suspicious patterns in financial transactions, flagging potential instances of fraud (Alabi & Ogunde, 2021). Additionally, forensic accountants are trained to collect and preserve evidence in a way that can be used in legal proceedings, making them valuable assets in both preventing and prosecuting fraud (Adegbie et al., 2019).

In ministries of finance, forensic accounting skills are particularly important due to the large sums of money managed and the complexity of financial operations. These skills enable forensic accountants to audit financial statements, detect discrepancies, and investigate potential instances of corruption or misappropriation of funds. By applying forensic accounting skills, ministries of finance can strengthen their internal controls, reduce opportunities for fraud, and respond more effectively to instances of financial misconduct (Aderibigbe, 2018).

These forensic accounting skills are being listed and discussed below, and they are as follows

- i. Communication skills are essential in forensic accounting, as they enable forensic accountants to clearly present their findings, collaborate with stakeholders, and provide expert testimony in legal proceedings. According to Allan et al. (2018), communication skills in forensic accounting

involve the ability to convey complex financial information in both written and verbal formats. Alshurafat et al. (2020) define communication skills as the capacity to engage with various stakeholders, including regulators, law enforcement, and legal teams, to ensure that fraud investigations are properly understood and acted upon. Dubinina et al. (2018) add that communication skills also include the ability to translate technical financial details into accessible language for non-financial stakeholders.

ii. Forensic accountants rely on strong communication skills to explain their investigative processes, present evidence, and ensure that their findings are understood by all parties involved. In the public sector, where ministries of finance often interact with multiple stakeholders ranging from government officials to law enforcement effective communication is crucial for ensuring that fraud cases are properly investigated and prosecuted.

iii. Clear communication is particularly important when forensic accountants are called upon to testify in court. Forensic accountants must be able to articulate their findings in a way that is comprehensible to judges, lawyers, and juries who may not have a background in finance. This involves not only presenting technical evidence but also explaining how the evidence supports the case for fraud. In ministries of finance, where forensic accountants may be involved in investigating large-scale corruption or financial mismanagement, effective communication can make the difference between a successful prosecution and a failed case (Fadilah et al., 2019).

iv. Technological proficiency is increasingly important in forensic accounting, particularly as fraud schemes grow more complex and sophisticated. According to Kiliç (2020), technology skills in forensic accounting refer to the ability to use data analytics tools, software, and forensic accounting systems to detect and prevent fraud. Alshurafat et al. (2021) describe technological proficiency as the competency to apply digital tools such as artificial intelligence (AI) and big data analytics to identify financial irregularities and patterns indicative of fraud. Botes and Saadeh (2018) further argue that technology skills enable forensic accountants to leverage technological innovations to enhance fraud detection and improve the efficiency of investigations.

Forensic accountants equipped with advanced technology skills are better able to detect fraud in large datasets, identify patterns of fraudulent behavior, and conduct more thorough investigations. In the public sector, where financial transactions are often vast and complex, the ability to use technology to analyze data is essential for uncovering fraud that would otherwise go unnoticed (Alshurafat et al., 2021). For example, data analytics tools can be used to flag unusual spending patterns, identify irregularities in financial records, and detect anomalies in procurement processes (Fadilah et al., 2019).

In ministries of finance, technological proficiency allows forensic accountants to monitor financial transactions in real time, enabling early detection of potential fraud. This proactive approach to fraud management reduces the likelihood of significant financial losses and helps ministries address fraudulent activities before they escalate (Kiliç, 2020). Furthermore, technology skills enable forensic accountants to automate routine tasks such as data entry and reconciliation, freeing up time for more in-depth investigations into suspicious activities. By integrating technology into their investigative processes, forensic accountants can conduct more comprehensive and efficient fraud investigations.

Accounting and auditing skills are fundamental competencies in forensic accounting, crucial for the effective detection and prevention of fraud in the public sector. These skills allow forensic accountants to scrutinize financial records, identify irregularities, and ensure compliance with financial regulations. According to Botes and Saadeh (2018), accounting skills involve a deep understanding of financial transactions, the ability to analyze complex accounting systems, and proficiency in preparing accurate financial statements. Similarly, Dubinina et al. (2018) define auditing skills as the capacity to evaluate an organization's internal controls and detect anomalies that may indicate fraudulent activities. Gottschalk (2019) further elaborates that auditing skills require a forensic accountant to assess risk, design audit procedures, and execute those procedures in a manner that uncovers irregularities in financial reporting.

Accounting skills in forensic accounting are particularly valuable for fraud detection because they provide forensic accountants with the technical expertise to review detailed financial records and identify discrepancies. For instance, forensic accountants can examine accounting ledgers, balance sheets, and cash flow statements to ensure that financial transactions have been accurately recorded and reported. In cases where irregularities are found, forensic accountants can use their accounting skills to trace the source of the problem, such as fraudulent journal entries or unauthorized expenses (Dubinina et al., 2018).

Auditor self-efficacy refers to the confidence that auditors, including forensic accountants, have in their ability to perform tasks related to fraud detection, investigation, and reporting. Bandura (1997) defines self-efficacy as the belief in one's capabilities to execute the courses of action required to manage prospective situations. In the context of forensic accounting, auditor self-efficacy is the perceived competence an auditor has to successfully detect and manage fraud. According to Kimbro and Xu (2016), auditor self-efficacy influences an auditor's ability to handle complex fraud investigations, maintain professional skepticism, and execute detailed investigative procedures. Hegazy et al. (2017) further suggests that high levels of self-efficacy in auditors lead to better fraud detection outcomes, as auditors with strong self-belief are more likely to pursue thorough investigations and persist in the face of challenges.

Auditor self-efficacy can significantly impact the effectiveness of fraud management in the public sector. Auditors with high levels of self-efficacy are more likely to take on challenging fraud cases, use advanced forensic accounting techniques, and persist in their investigations until fraudulent activities are uncovered (Hegazy et al., 2017). For example, forensic accountants who believe in their ability to detect fraud are more likely to apply sophisticated data analytics tools and investigative techniques to uncover complex fraud schemes that may not be immediately apparent (Kimbrow & Xu, 2016). This persistence and attention to detail can make a critical difference in identifying and prosecuting financial misconduct in ministries of finance, where fraudulent activities are often hidden within large-scale financial transactions. Additionally, auditor self-efficacy contributes to the overall quality of fraud investigations. Auditors with high self-efficacy are more likely to maintain professional skepticism, a key attribute in fraud detection, which involves questioning the validity of financial records and investigating potential red flags (Hegazy et al., 2017). This skepticism is essential in ministries of finance, where auditors must navigate complex financial systems and identify discrepancies that may indicate fraudulent activities. Forensic accountants with strong self-efficacy are more likely to question irregularities and pursue thorough investigations, even when the evidence of fraud is subtle or concealed (Kimbrow & Xu, 2016).

Theoretical Framework

Stated below are some theories which are critical in understanding the relationship between forensic accounting skills and Fraud management specifically in the public sector. These theories provide a basis for examining these key skills, such as communication, technology proficiency, accounting and auditing skills, and auditor's self-efficacy, for managing fraud in the public sector finance ministries northwestern Nigeria. And they are as follows.

This refers to the approach of basing opinions and conclusions on empirical evidence and factual data, rather than on intuition, assumptions, or biases. It requires the forensic accountant to collect and analyze relevant data, evaluate the reliability and credibility of evidence, consider alternative explanations and hypothesis, drawing conclusions based on the weight of evidence, and the documenting and communicating findings in a clear and transparent manner. These theories are adopted for this research work because they were necessary, useful and relevant to the research work

Materiality theory

An amount is considered material if it could influence the decision of investors, creditors, or other stakeholders. An amount is material if it is significant enough to impact the financial information used by stakeholders to make decisions. A forensic accountant uses it to determine the significance of financial transactions errors, assess the impact of fraud or other irregularities on financial statements, evaluate the likelihood of material misstatement or omission, and develop strategies for investigating and analyzing financial data. It is being evaluated in both qualitative and quantitative factors. By applying this theory, the forensic accountant can focus his/her investigation on the most significant and impactful issue.

Professional skepticism theory

Professional skepticism is a critical component of forensic accounting, as it enables practitioners to navigate complex and often contentious situations with objectivity, integrity, and a commitment to uncovering the truth. It involves the forensic accountant questioning assumptions and evidence, verifying information through multiple sources, considering alternative explanations and hypothesis, evaluating credibility of witnesses and documents, avoiding bias and preconceptions, being aware of one's own limitations and biases, and continuously updating knowledge and skills.

Fraud Triangle Theory

The fraud triangle is a widely accepted theoretical framework used to understand the conditions that lead individuals to commit fraud. Developed by Donald Cressey in the 1950s, the fraud triangle identifies three key elements pressure, opportunity, and rationalization that together create the environment where fraud is most likely to occur. This theory has become the foundation for many fraud risk management strategies, particularly in auditing and forensic accounting practices (Mehta & Bhavani, 2017; Popoola et al., 2016). Pressure, also referred to as incentive or motivation, is the first component of the fraud triangle and represents the driving force behind fraudulent behavior. This pressure often arises from financial difficulties, personal debts, or unrealistic performance expectations (Modugu & Anyaduba, 2018). In public sector organizations, such as ministries of finance, employees may face pressures to manipulate financial reports to conceal deficits, embezzle public funds to cover personal expenses, or divert resources to meet political demands (Salami & Abdulrazaq, 2020). The high level of

responsibility and control over large public budgets can create a unique set of pressures, leading to fraud.

Research has shown that individuals under significant financial or social pressures are more likely to rationalize fraudulent activities (Chinedu & Uchechukwu, 2017). In ministries of finance, the pressure to meet budgetary expectations or political demands can lead to the falsification of financial reports, as individuals try to meet targets or avoid punishment. Therefore, addressing the pressure component requires recognizing the various personal and organizational factors that drive individuals to commit fraud (Okoye & Gbegi, 2015).

Opportunity is the second component of the fraud triangle and refers to the ability of individuals to commit fraud due to weaknesses in internal controls, poor oversight, or ineffective governance systems (Ogah & Olorunsola, 2018). In public sector institutions, particularly in ministries of finance, opportunities for fraud can arise from inadequate financial monitoring, lack of segregation of duties, or outdated auditing processes (Tijani & Bakare, 2020). The availability of resources, coupled with weak internal controls, creates an environment conducive to fraud, as individuals exploit gaps in the system to misappropriate funds or falsify records.

Studies on forensic accounting highlight the critical role of effective internal controls and regular audits in reducing the opportunity for fraud (Odia & Ogiedu, 2016). By implementing strong financial controls, regular audits, and increased oversight, ministries of finance can significantly limit the opportunities for fraud (Selimoğlu & Altunel, 2020). Forensic accountants, equipped with investigative skills, help to identify vulnerabilities in financial systems, which may be exploited by individuals seeking to commit fraud. For example, forensic audits can uncover hidden transactions, unauthorized payments, or discrepancies in financial statements, thus reducing the opportunities for fraud to occur (Ogunde & Akinjobi, 2016).

Rationalization, the third component of the fraud triangle, refers to the psychological process by which individuals justify their fraudulent actions. Individuals who commit fraud often rationalize their behavior as necessary or justifiable due to external circumstances (Mehta & Bhavani, 2017). Common rationalizations include beliefs such as “I deserve this” or “the organization won’t notice.” In public sector institutions, employees may justify their actions by pointing to systemic corruption, inadequate compensation, or widespread unethical practices within the organization (Chinedu & Uchechukwu, 2017).

Research shows that a strong ethical culture within an organization can reduce the likelihood of individuals rationalizing fraud (Modugu & Anyaduba, 2018). Public sector institutions, including ministries of finance, can combat rationalization by fostering a transparent and ethical work environment. This includes creating codes of conduct, providing ethics training, and establishing clear reporting mechanisms for whistleblowers (Odia & Ogiedu, 2016). By emphasizing the importance of ethical behavior, organizations can help to minimize the internal justification of fraudulent activities.

The fraud triangle provides a comprehensive framework for understanding the motivations behind fraudulent activities. In ministries of finance, where the risk of fraud is high due to the large sums of money handled and the complex nature of financial operations, addressing all three elements of the fraud triangle is essential.

Benford's law

Also known as the Newcomb-Benford's law, the law of anomalous numbers, or first-digit law. The law states that in a data set 1,2. The number 1 will be the leading digit in a genuine data set of numbers 30.1% of the time, the number 2 will be the leading digit 17.6% of the time, each subsequent numeral, 3 through 9, will be leading digit with decreasing frequency. In essence, what this theory is saying is that numbers can tell if something is weird or not. All these theories were adopted for this research work because necessary, useful and relevant to the research work.

3.0 Methodology

The research design chosen for this study is the survey method, which is ideal for collecting data from a large population to assess the relationship between forensic accounting skills and fraud management within the ministries of finance. According to Creswell (2014), survey research provides a quantitative or numeric description of trends, attitudes, or opinions of a population by examining a sample, making it suitable for this study's goal of understanding how forensic accounting skills such as communication, technology proficiency, auditing, and self-efficacy influence fraud management.

The population of this study consists of one thousand four hundred and forty (1,440) conventional accountants, auditors, financial managers, and relevant personnel working in the ministries of finance across North-Western Nigeria (Salary & Pension Directorate of the three States, namely Jigawa, Kaduna and Kano).

Table 1:

Population of the Study by State Ministry of Finance Staff

| S/N | State | Number of Ministry of Finance Staff |
|-----|---------------|-------------------------------------|
| 1 | Jigawa | 215 |
| 2 | Kaduna | 412 |
| 3 | Kano | 813 |
| | Total | 1,440 |

Source: Primary Data Salary and Pension Directorate of the 3 states, 2024.

This study employed a quantitative survey method to collect data on the effectiveness/relationship between forensic accounting competencies and fraud management in ministries of finance in North-Western Nigeria. The survey method was selected because it allows for the efficient collection of standardized data from a large group of respondents, enabling statistical analysis and generalization of the findings to a broader population (Collis & Hussey, 2014). The key data collection instrument for this study is a structured questionnaire,

which will be distributed to forensic accountants, auditors, and financial officers in selected ministries.

The questionnaire was designed to capture detailed information about the respondents' forensic accounting skills (e.g., communication, technology proficiency, auditing, and self-efficacy) and their perspectives on fraud management within their ministries. The questionnaire is divided into sections, with each section focused on one of the key variables. The questions are predominantly closed-ended, utilizing a Likert scale (e.g., from "Strongly Disagree" to "Strongly Agree") to assess respondents' opinions, attitudes, and experiences related to fraud management practices. According to Saunders et al. (2019), Likert scales are effective for gathering data on attitudes and perceptions, allowing for easy quantification and analysis. Additionally, demographic questions will be included to capture respondents' background information, such as their job role, years of experience, and educational qualifications, which may be relevant for the study's analysis.

4.0 Analysis results and Discussion

The results of the regression analysis used to test the study hypotheses is presented.

Table 2

Regression Analysis

| Variable | Coefficient | Standard Error | T- Value | Probability |
|-------------|-------------|----------------|----------|-------------|
| Constant | 0.227 | 0.236 | 0.96 | 0.338 |
| CS | 0.241 | 0.039 | 6.20 | 0.000 |
| TC | 0.224 | 0.041 | 5.43 | 0.000 |
| AAS | 0.159 | 0.033 | 4.85 | 0.000 |
| AS | 0.062 | 0.036 | 1.74 | 0.083 |
| R-Squared | | 0.320 | | |
| F | | 19.16 | | |
| Probability | | 0.000 | | |

The regression analysis in Table 4.5 evaluates the effect of communication skills, technological skills, accounting and auditing skills, and auditor's self-efficacy on fraud management in finance ministries in Northwestern Nigeria. The model's R-squared value is 0.320, indicating that the independent variables collectively explain 32.0% of the variation in fraud management. While this suggests that other factors not included in the model also influence fraud management, the value reflects a reasonable level of explanatory power in social science research. The F-statistic of 19.16, with a p-value of 0.000, confirms that the model is statistically significant. This indicates that the independent variables, when taken together, have a meaningful impact on fraud management practices.

Communication skills show a positive and statistically significant effect on fraud management, with a coefficient of 0.241 and a p-value of 0.000. This means that an improvement in communication skills leads to a corresponding increase in fraud management effectiveness. The importance of this result lies in the role of communication in ensuring accurate reporting, promoting teamwork, and facilitating the timely exchange of information critical to fraud prevention. Finance ministries can benefit from training programs focused on enhancing communication capabilities to bolster fraud detection and mitigation efforts.

Technological skills also exhibit a positive and significant relationship with fraud management, with a coefficient of 0.224 and a p-value of 0.000. This finding underscores the critical role of technology in combating fraud. By leveraging technological tools such as forensic accounting software, data analytics platforms, and automated systems, employees can detect irregularities and prevent fraudulent activities more effectively. This result highlights the importance of continuous investment in technological infrastructure and training for finance ministry personnel to strengthen fraud management practices.

Accounting and auditing skills contribute positively and significantly to fraud management, with a coefficient of 0.159 and a p-value of 0.000. This result aligns with the technical nature of fraud detection, which relies heavily on strong accounting and auditing expertise. Professionals equipped with these skills are better positioned to identify financial discrepancies, ensure compliance with regulatory standards, and implement robust internal controls. Enhancing these competencies among public sector employees can significantly improve the overall integrity of financial operations.

Auditor's self-efficacy has a weaker positive relationship with fraud management, with a coefficient of 0.062 and a p-value of 0.083. While the relationship is not statistically significant at the conventional 5% level, the positive coefficient suggests that higher self-efficacy may still contribute to better fraud management outcomes. This finding highlights the potential value of boosting confidence among auditors through training and mentoring programs, enabling them to approach fraud-related challenges with greater assurance and effectiveness.

The regression results indicate that communication skills, technological skills, and accounting and auditing skills have significant positive effects on fraud management, with communication skills having the strongest impact. Although auditor's self-efficacy shows a weaker and statistically insignificant effect, it may still play a supporting role. Collectively, these findings emphasize the importance of skill development and capacity building in strengthening fraud management in the public sector. The overall model is robust and statistically significant, providing valuable insights into the factors that influence effective fraud prevention and control.

5.0 Conclusion

This study examined the effectiveness of forensic accounting competencies on public sector fraud management in Northwestern Nigerian States Finance Ministries. Based on the analysis and interpretation of results, the study concludes that effective communication is vital in fraud management. The ability to clearly report fraudulent activities and collaborate with stakeholders ensures that fraud cases are promptly identified and addressed. The implication of this finding is that public sector employees must be trained in effective communication techniques to improve transparency and accountability. Without strong communication skills, forensic accountants may struggle to relay critical fraud-related information to auditors, regulators, and legal authorities,

thereby weakening fraud detection and prosecution efforts. The study also revealed that forensic accounting competencies/ skills plays a very vital role in fraud detection and containment as it showed a positive relationship.

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