EFFECTIVENESS OF FORENSIC ACCOUNTING IN DETECTING FINANCIAL FRAUD IN PUBLIC SECTOR

BY

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BENIN CITY

FEBRUARY, 2025.

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BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF ACCOUNTING, FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN, BENIN CITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF SCIENCE (B.Sc.) DEGREE IN ACCOUNTING.

FEBRUARY, 2025.

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ABSTRACT

This study evaluates the effectiveness of forensic accounting practices in detecting financial fraud within the public sector, focusing on the Edo State Government in Nigeria. A survey design was employed, with a stratified random sample of 200 respondents selected from a population of 400 government officials, auditors, and forensic practitioners. Data were collected via structured questionnaires and analysed using linear regression with SPSS 23.0. The results indicate that stringent government regulations, higher incidences of embezzlement, and the integration of digital forensics tools significantly enhance the effectiveness of forensic accounting in detecting fraud. Additionally, robust internal controls are essential for successful fraud detection. The study recommends strengthening regulatory oversight, investing in digital forensic tools, improving internal control systems, and fostering collaboration between regulatory bodies, law enforcement, and academia. Future research should explore the role of emerging technologies, such as blockchain, AI, and machine learning, in enhancing forensic accounting practices and examine the long-term impact of regulatory reforms on fraud reduction and governance transparency.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Forensic accounting is a specialized discipline within the field of accounting that uses investigative techniques to detect and prevent financial fraud. This area of accounting has gained substantial prominence in recent years due to the rising incidence of economic crimes worldwide (Owolabi & Ogunsola, 2021). In Nigeria, the country has faced numerous economic challenges, and incidents of financial and economic crime have posed serious risks to the integrity and stability of its financial systems. This provides a context for the exploration of forensic accounting's crucial role in combating economic malfeasance in Nigeria.

Nigeria, as a significant player in the African economy, has been severely impacted by various forms of financial crime, including corruption, money laundering, and embezzlement (Akinbowale, 2018). These issues have infiltrated a broad range of sectors, including the public service, banking industry, and manufacturing. As the nature of economic crimes becomes increasingly sophisticated, the demand for specialized, proactive strategies to detect and prevent financial fraud is more critical than ever.

According to Oyerogba (2021), the study of economic and financial crimes in Nigeria highlights the urgent need for the adoption of forensic accounting practices as an essential tool for prevention. This research underscores the necessity of a deep understanding of economic crimes and advocates for the application of forensic accounting as a proactive measure. Works such as those by Amake and Ikathua (2016) explore the implementation of forensic accounting in fraud detection within the Nigerian public sector, offering practical insights into the challenges and solutions encountered in applying forensic accounting techniques in specific sectors.

Within the banking industry, studies by Bello et al. (2022), Okoye et al. (2019), Owolabi and Ogunsola (2021), and Uniamikogbo et al. (2019) provide a comprehensive analysis of the role of forensic accounting in identifying and preventing fraud in Nigerian commercial banks. These studies contribute valuable insights into the evolving nature of financial fraud within the banking sector and the integral role of forensic accounting in safeguarding the financial system. Furthermore, Eze and Okoye (2019) and Oyerogba (2021) note that the public sector, a crucial aspect of Nigeria's economic structure, has also been the subject of significant research on forensic auditing and accounting techniques aimed at detecting fraud. These works emphasize the specific challenges and potential benefits of applying forensic accounting in government agencies.

The background of this study underscores the urgent need for a systematic approach to combat economic and financial crimes in Nigeria. The growing body of literature on forensic accounting highlights its increasing recognition as an effective tool for fraud prevention and detection (Alhassan, 2020). This study aims to investigate the impact of forensic accounting within the Edo State Government, contributing to the ongoing dialogue on improving financial systems and governance in Nigeria.

1.2 Statement of the Research Problem

Forensic accounting has emerged as a key solution to combat financial and economic crimes worldwide. However, its application within the Nigerian context, particularly in the Edo State Government, remains underexplored (Okoye & Ndah, 2019). Despite the ongoing struggles with issues such as corruption and embezzlement in Nigeria, there is a lack of research on how forensic accounting practices can be effectively integrated into government sectors, leaving Edo State vulnerable to financial mismanagement and fraud (Amake & Ikathua, 2016; Uniamikogbo

et al., 2019). Consequently, the core research problem centres on the need for a thorough examination of the application and impact of forensic accounting within the specific framework of Edo State Government.

The complexity of economic crimes in Nigeria, coupled with the ever-evolving nature of fraud schemes and regulatory changes, highlights the critical need to address this research gap (Alhassan, 2020). Edo State Government, representing a smaller version of the broader Nigerian economic system, faces unique challenges in implementing effective forensic accounting practices. The absence of sector-specific strategies exacerbates the risk of financial fraud, potentially undermining the state's financial stability and public confidence (Okoye et al., 2019). Therefore, the research problem revolves around understanding the complexities of financial fraud within Edo State Government and proposing targeted forensic accounting strategies to strengthen governance and financial integrity.

The focus of this research is to bridge the gap between the theoretical framework of forensic accounting and its practical application within Edo State Government (Eze & Okoye, 2019; Owolabi & Ogunsola, 2021). Given Nigeria's susceptibility to economic crimes and the unique challenges of Edo State's administrative structure, it is crucial to explore how forensic accounting can be effectively utilized to detect and prevent financial fraud. By addressing this gap, the study aims to provide insights that could reinforce the financial governance of Edo State, promoting economic stability and enhancing public trust (Edheku & Akpoveta, 2020).

1.3 Research Questions

1. How does the level of government regulations' stringency influence the effectiveness of forensic accounting in detecting financial fraud in the public sector?

2. What is the correlation between incidence rates of embezzlement in public sector organizations and the success of forensic accounting practices in detecting financial fraud?
3. How does the integration of digital forensics tools contribute to the ability of forensic accountants in detecting and preventing financial fraud within the public sector?
4. In what ways does the effectiveness of internal controls within public sector organizations impact the success of forensic accounting practices in detecting financial fraud?

1.4 Objectives of the Study

The main objective of this study is to comprehensively examine the effectiveness and implications of forensic accounting practices in public sector within the unique context of Edo State Government. The study specifically aims to:

1. investigate the impact of stringency of government regulations on the detection of financial fraud in the public sector;
2. examine the relationship between incidence rates of embezzlement and the detection of financial fraud in the public sector;
3. evaluate the contribution of integration of digital forensics tools to the detection of financial fraud in the public sector; and
4. assess the impact of the effectiveness of internal controls on the detection of financial fraud in the public sector.

1.5 Research Hypotheses

The study formulated the subsequent hypotheses in their null form to provide guidance;

H_{01}: Government regulations does not significantly influence the effectiveness of forensic accounting in detecting financial fraud in the public sector.

H_{02}: Incidence rates of embezzlement in public sector organizations do not significantly influence the success of forensic accounting practices in detecting financial fraud.

H_{03}: Digital forensics tools integration does not significantly influence the ability of forensic accountants to detect financial fraud within the public sector.

H_{04}: The effectiveness of internal controls within public sector organizations does not significantly influence the success of forensic accounting practices in detecting financial fraud.

1.6 Scope of the Study

This research will specifically focus on evaluating the effectiveness of forensic accounting practices in identifying and mitigating financial fraud within the Edo State Government during the period from January 2016 to December 2020. The study will examine the financial records, reports, and personnel involved in the financial management of the state government. A purposive sampling technique will be used to select key participants, including government officials, auditors, and forensic accountants, with a total sample size of 100 individuals. By concentrating on this defined period and population, the study aims to offer a detailed understanding of how forensic accounting practices are applied and their impact on fraud detection within Edo State Government, thereby providing insights that can inform policy reforms and best practices.

1.7 Significance of the Study

This study is of significant value to various stakeholders within the Edo State Government, offering in-depth insights into forensic accounting practices. One of the key contributions of this

research is its potential to inform policymakers and regulatory bodies in Edo State about the effectiveness of current regulations and procedures for detecting financial fraud. By assessing the strengths and areas for improvement in existing practices, the study can guide the development of stronger, more targeted policies tailored to the state's specific challenges.

Additionally, the research will provide valuable contributions to the practice of forensic accountants and financial professionals working within the Edo State Government. By exploring factors such as the effectiveness of regulatory measures, rates of embezzlement, the use of digital forensic tools, and the robustness of internal controls, the study will offer practical guidance. These insights will help financial professionals refine their strategies and adopt more effective approaches to detecting and preventing fraud in the state's public sector.

From a resource management perspective, this study will assist in the optimal allocation of resources by identifying key areas where a greater focus on internal controls, enhanced use of digital forensic tools, or regulatory adjustments could lead to meaningful improvements in fraud detection efforts. This targeted approach ensures that resources are deployed in the most impactful areas, contributing to the ongoing fight against financial fraud.

Furthermore, this research plays a vital role in promoting transparency and trust within the government. By raising awareness about the importance of forensic accounting, the study will contribute to increasing the understanding of stakeholders, including government officials, employees, and the general public. This heightened awareness is essential in fostering public confidence in the management of government resources, further reinforcing trust in the government's commitment to financial accountability and integrity. Ultimately, this study serves not only as a practical tool for immediate policy improvements but also as an important contribution to the academic discourse on forensic accounting in the public sector.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a thorough review of literature concerning fraud prevention and detection within the Nigerian context, with a specific focus on the pivotal role of forensic accounting practices. Drawing upon a range of scholarly works, it examines the prevalence and types of economic and financial crimes in Nigeria, the methodologies employed in researching fraud-related issues, and the effectiveness of forensic accounting techniques in diverse sectors.

2.1 Concept of Forensic Accounting Practices

Forensic accounting is a critical field that operates at the crossroads of accounting, auditing, and investigative methods, primarily focused on uncovering and addressing financial fraud and irregularities (Akinbowale, 2018). This discipline involves a thorough analysis of financial records, transactions, and statements to detect fraudulent activities, with the intent of presenting the findings as evidence in legal proceedings (Adebisi et al., 2016). Forensic accountants utilize various tools and techniques, such as data analysis, forensic technology, and interviews, to unravel complex financial schemes and trace the movement of funds (Amake & Ikathua, 2016).

As an effective response to the widespread economic and financial crimes affecting the nation, forensic accounting has gained prominence (Alhassan, 2020). Nigeria, particularly vulnerable to financial misconduct in sectors like the public sector, banking, and manufacturing, has seen the growing need for forensic accounting practices (Okoye & Ndah, 2019; Bello et al., 2022; Lawal et al., 2020). By employing forensic accounting methods, organizations can proactively identify,

prevent, and reduce fraudulent activities, thereby protecting their financial assets and reputation (Eko et al., 2020).

In addition to fraud detection, forensic accounting plays a significant role in improving organizational transparency, accountability, and corporate governance (Oyerogba, 2021). Through comprehensive forensic investigations, organizations can pinpoint weaknesses in their internal controls and compliance systems, allowing for the implementation of stronger preventive strategies (Owolabi & Ogunsola, 2021). Forensic accountants also serve a vital function in dispute resolution by offering expert testimony and evidence in legal proceedings (Ehioghiren & Atu, 2016).

However, the effectiveness of forensic accounting practices is influenced by several factors, such as the proficiency of forensic accountants, the adequacy of internal controls, and the regulatory environment (Inyada et al., 2019). With the continuous evolution of financial crimes, which are becoming more sophisticated, there is an increasing need for qualified forensic professionals capable of managing these challenges (Joshi & Bremser, 2004). Consequently, continuous research and professional development in forensic accounting are essential to stay up-to-date with emerging trends and best practices in fraud prevention and detection (Eze & Okoye, 2019).

2.1.1 Concept of Forensic Accounting Practices

Forensic accounting practices encompass a diverse array of investigative methods designed to detect and prevent financial fraud and irregularities (Akinbowale, 2018). Central to forensic accounting is the detailed analysis of financial records, transactions, and statements to identify discrepancies, anomalies, and potentially fraudulent activities (Adebisi et al., 2016). This process often requires specialized skills such as data analysis, financial modelling, and an in-depth understanding of legal and regulatory frameworks (Amake & Ikathua, 2016).

Forensic accounting has become an essential tool in the fight against economic and financial crimes, including corruption, embezzlement, and money laundering (Alhassan, 2020). By applying forensic accounting techniques, organizations can proactively detect and prevent fraudulent activities, thereby protecting their financial assets and maintaining their integrity (Okoye & Ndah, 2019; Bello et al., 2022). In addition, forensic accountants play a crucial role in supporting legal processes by offering expert testimony and evidence derived from their investigations (Ehioghiren & Atu, 2016).

Furthermore, forensic accounting practices contribute significantly to enhancing organizational transparency, accountability, and corporate governance (Oyerogba, 2021). Through comprehensive forensic examinations, organizations can identify vulnerabilities in their internal controls and compliance systems, facilitating the implementation of stronger preventive measures (Owolabi & Ogunsola, 2021). Forensic accountants also act as trusted advisors, offering valuable insights and recommendations to mitigate financial risks and optimize business operations (Eko et al., 2020).

However, the effectiveness of forensic accounting practices is contingent on several factors, including the competence of forensic professionals, resource availability, and the support of organizational leadership (Inyada et al., 2019). As financial crimes become increasingly complex and sophisticated, there is a growing need for continuous research and professional development in forensic accounting to stay ahead of emerging threats and challenges (Joshi & Bremser, 2004). Thus, fostering a culture of vigilance and compliance is critical to effectively combating financial fraud and ensuring the integrity of financial reporting processes (Eze & Okoye, 2019).

2.1.2 Financial Fraud Prevention

Financial fraud prevention is a critical element of forensic accounting practices, focused on proactively reducing the risk of fraudulent activities within organizations (Amahalu et al., 2017). The strategies for preventing fraud include a variety of measures, such as implementing robust internal controls, adopting fraud detection technologies, and cultivating a strong ethical culture (Amake & Ikathua, 2016; Ehioghiren & Atu, 2016). By employing a multifaceted approach, organizations can create an environment hostile to fraudsters, deterring potential perpetrators from engaging in fraudulent activities (Oyerogba, 2021).

Additionally, preventing financial fraud requires the identification and mitigation of inherent fraud risks within organizational processes and systems (Okoye & Ndah, 2019). This involves a thorough understanding of the organization's operations, as well as an assessment of potential vulnerabilities and weaknesses that fraudsters could exploit (Bello et al., 2022). Through techniques such as risk assessment and management, organizations can prioritize areas of concern and allocate resources efficiently to address these risks (Uniamikogbo et al., 2019).

Moreover, promoting a culture of integrity, transparency, and accountability is fundamental in preventing financial fraud (Eko et al., 2020). Organizational leaders play a crucial role in setting the tone at the top and fostering ethical behaviour throughout the organization (Eze & Okoye, 2019). By demonstrating a commitment to ethical conduct and adopting a zero-tolerance policy towards fraud, leaders can inspire confidence among employees and deter potential fraudsters from engaging in illicit activities (Inyada et al., 2019).

Furthermore, the application of advanced technology and analytics tools enhances organizations' ability to detect and prevent financial fraud (Joshi & Bremser, 2004). Utilizing data analytics, artificial intelligence, and machine learning algorithms, organizations can identify patterns,

trends, and anomalies that indicate fraudulent activities (Lawal et al., 2020). In addition, implementing continuous monitoring and surveillance systems provides real-time insights into potential fraud risks, allowing organizations to take proactive steps to mitigate these risks (Mansor & Abdullahi, 2015).

Financial fraud prevention is a complex endeavour that requires a combination of proactive measures, including robust internal controls, risk assessment, ethical leadership, and technological solutions (Sule et al., 2019). By adopting a holistic approach to fraud prevention, organizations can minimize the risks of financial losses, reputational harm, and legal liabilities associated with fraudulent activities (Owolabi & Ogunsola, 2021). Therefore, investing in comprehensive fraud prevention strategies is essential to safeguard organizational assets and ensure long-term sustainability and success (Oyebisi et al., 2018).

2.1.3 Integration of Digital Forensic Tools

The integration of digital forensic tools represents a pivotal aspect of modern forensic accounting practices, facilitating the identification, analysis, and documentation of digital evidence related to financial fraud (Eko et al., 2020). Digital forensic tools encompass a wide array of software applications and technologies designed to collect, preserve, and analyse electronic data from various sources, including computers, mobile devices, and network servers (Edheku & Akpoveta, 2020). These tools play a critical role in uncovering hidden financial transactions, tracking digital footprints, and reconstructing digital evidence trails to support investigative efforts (Ehioghiren & Atu, 2016).

Moreover, the integration of digital forensic tools enables forensic accountants to conduct an all-inclusive examination of electronic records and databases, enhancing their capabilities in detecting and preventing financial fraud (Eze & Okoye, 2019). By leveraging data extraction,

data recovery, and data analysis techniques, forensic accountants can identify anomalies, patterns, and trends indicative of fraudulent activities within electronic data sets (Inyada et al., 2019). Furthermore, the use of advanced data visualization and predictive analytics tools can provide valuable insights into potential fraud risks, enabling entities to take proactive measures to mitigate them (Joshi & Bremser, 2004).

Additionally, digital forensic tools facilitate the preservation and presentation of digital evidence in legal proceedings, ensuring its admissibility and reliability in court (Lawal et al., 2020). Through the use of secure data storage and chain of custody protocols, forensic accountants can maintain the integrity and authenticity of digital evidence throughout the investigative process (Mansor & Abdullahi, 2015). Furthermore, the use of digital forensic tools can expedite the investigation process and reduce the time and resources required to analyse large volumes of electronic data (Okoye & Ndah, 2019).

However, the effectiveness of digital forensic tools depends on several factors, including the quality of data, the expertise of forensic practitioners, and the availability of resources (Oyerogba, 2021). Moreover, the rapidly evolving nature of technology presents ongoing challenges in keeping pace with emerging threats and vulnerabilities (Sule et al., 2019). Therefore, continuous research and professional development in digital forensic techniques are essential to ensuring their effectiveness in detecting and preventing financial fraud (Uniamikogbo et al., 2019). By integrating digital forensic tools into their investigative processes, entities can enhance their capabilities in combating financial fraud and safeguarding their financial assets and reputation (Adebisi et al., 2016).

2.1.4 Effectiveness of Internal Controls

Internal controls are pivotal in preventing and detecting financial fraud within organizations, serving as the first line of defence against fraudulent activities (Owolabi & Ogunsola, 2021). These controls include policies, procedures, and mechanisms designed to safeguard assets, ensure the accuracy of financial reporting, and promote compliance with laws and regulations (Oyebisi et al., 2018). Effective internal controls are critical for establishing accountability, transparency, and integrity in organizational operations (Oyerogba, 2021).

The effectiveness of internal controls in preventing financial fraud is heavily influenced by their design, implementation, and monitoring processes (Oyebisi et al., 2018). A well-structured internal control system incorporates key elements such as segregation of duties, authorization procedures, and physical safeguards to reduce the risk of fraudulent activities (Owolabi & Ogunsola, 2021). Additionally, regular assessments and evaluations of internal controls are essential to identifying vulnerabilities and weaknesses that could be exploited by fraudsters (Okoye & Ndah, 2019).

The leadership of an organization, particularly the "tone at the top," plays a significant role in reinforcing the importance of internal controls and fostering a culture of integrity and compliance (Oyerogba, 2021). By demonstrating a commitment to ethical behaviour and accountability, leaders can inspire confidence among employees and discourage potential wrongdoers from engaging in fraudulent activities (Owolabi & Ogunsola, 2021). Furthermore, the establishment of clear policies and procedures, coupled with ongoing training and communication, ensures that employees understand their roles and responsibilities in maintaining effective internal controls (Okoye & Ndah, 2019).

Despite the critical role of internal controls, their effectiveness can be undermined by factors such as management override, collusion, and technological limitations (Oyerogba, 2021). Moreover, the complexity and dynamic nature of modern business environments present challenges in designing and implementing resilient internal control systems (Owolabi & Ogunsola, 2021). Therefore, organizations must regularly evaluate and enhance their internal control systems to address evolving risks and maintain their ability to prevent financial fraud (Oyebisi et al., 2018).

Ultimately, the effectiveness of internal controls in combating financial fraud relies on their design, implementation, and monitoring, along with the organization's commitment to fostering a culture of integrity and compliance (Okoye & Ndah, 2019). By investing in strong internal control systems and promoting ethical behaviour, organizations can mitigate the risk of financial losses, reputational damage, and legal consequences related to fraudulent activities (Oyebisi et al., 2018).

2.1.5 Regulation and Compliance

Regulation and compliance are essential pillars in preventing and detecting financial fraud within both the public sector and various industries (Akinbowale, 2018). Regulatory frameworks, established by governmental bodies and industry regulators, provide standards and guidelines designed to foster transparency, accountability, and integrity in financial reporting and operations (Alhassan, 2020). Ensuring compliance with these regulations is crucial for entities to meet legal obligations and mitigate the risk of financial fraud (Amahalu et al., 2017).

Regulatory compliance encompasses several key areas, including financial reporting, auditing, data privacy, and anti-money laundering (Eko et al., 2020). Organizations are required to follow specific reporting protocols, such as submitting audited financial statements and disclosing

related-party transactions, to maintain transparency and accuracy in financial disclosures (Ehioghiren & Atu, 2016). Furthermore, adherence to data privacy regulations, such as the General Data Protection Regulation (GDPR), is vital for safeguarding sensitive financial data and protecting against data breaches (Eze & Okoye, 2019).

Regulatory compliance is typically enforced through inspections, audits, and penalties for non-compliance (Inyada et al., 2019). Regulatory bodies and government agencies regularly examine entities' financial records and operations to ensure compliance with required standards and to identify potential violations (Joshi & Bremser, 2004). Entities found in breach of these regulatory standards may face fines, sanctions, and legal consequences, underscoring the importance of maintaining robust compliance programs (Lawal et al., 2020).

However, achieving compliance can be challenging, especially in environments with complex and ever-evolving regulatory frameworks (Mansor & Abdullahi, 2015). Additionally, the costs of compliance—such as those associated with regulatory reporting, monitoring, and enforcement—can place a significant burden on organizations, particularly smaller entities (Okoye & Ndah, 2019). As a result, entities must invest in comprehensive compliance programs and regulatory risk management strategies to navigate these complexities and reduce the risk of financial fraud (Owolabi & Ogunsola, 2021).

Regulation and compliance are crucial in preventing and detecting financial fraud by setting clear standards, promoting transparency, and ensuring accountability within organizations (Oyerogba, 2021). By adhering to regulatory requirements and implementing strong compliance programs, organizations can reduce the likelihood of financial losses, reputational harm, and legal liabilities stemming from fraudulent activities (Sule et al., 2019). Consequently, fostering a

culture of compliance and regulatory awareness is vital for ensuring integrity and trust within financial markets and institutions (Uniamikogbo et al., 2019).

2.1.6 Training and Education

Training and education represent vital components in the prevention and detection of financial fraud within entities (Amahalu et al., 2017). Comprehensive training programs provide employees with the knowledge, skills, and awareness necessary to recognize and report suspicious activities (Amake & Ikathua, 2016). By educating employees about the risks and consequences of financial fraud, entities can empower them to act as frontline defenders against fraudulent activities (Bello et al., 2022).

Moreover, training programs should cover a wide range of topics, including fraud awareness, ethical conduct, internal controls, and regulatory compliance (Ehioghiren & Atu, 2016). Employees should receive regular training on emerging fraud schemes, technological advancements, and regulatory changes to stay abreast of evolving fraud risks (Eko et al., 2020). Additionally, training programs should emphasize the importance of maintaining confidentiality, protecting sensitive information, and adhering to entityal policies and procedures (Eze & Okoye, 2019).

Furthermore, ongoing education and professional development are essential for forensic accountants and fraud examiners to stay current with industry trends, best practices, and regulatory requirements (Inyada et al., 2019). Professional certifications, such as the Certified Fraud Examiner (CFE) and Certified Forensic Accountant (CFA), provide practitioners with specialized training and credentials in fraud examination and forensic accounting (Joshi & Bremser, 2004). Moreover, participation in continuing education programs, conferences, and

seminars enables forensic professionals to enhance their skills, expand their knowledge base, and network with peers in the field (Lawal et al., 2020).

However, despite the importance of training and education, entities may encounter challenges in implementing effective training programs, such as budget constraints, time limitations, and resistance to change (Mansor & Abdullahi, 2015). Moreover, the effectiveness of training programs may be limited if not supported by a culture of integrity, accountability, and transparency within the entity (Okoye & Ndah, 2019). Therefore, entities must foster a culture of continuous learning and professional development to build a vigilant workforce capable of detecting and preventing financial fraud (Owolabi & Ogunsola, 2021).

Training and education play a crucial role in building awareness, enhancing skills, and fostering a culture of compliance and integrity within entities (Oyebisi et al., 2018). By investing in comprehensive training programs and professional development initiatives, entities can empower their employees to recognize, report, and prevent fraudulent activities (Oyerogba, 2021). Moreover, ongoing education for forensic professionals ensures they remain equipped with the knowledge and expertise necessary to combat financial fraud effectively (Sule et al., 2019). Therefore, training and education are indispensable components of a holistic approach to fraud prevention and detection (Uniamikogbo et al., 2019).

2.2 Review of Literature on Variables

2.2.1 Government Regulations and Forensic Accounting

Government regulations play a crucial role in shaping the landscape of forensic accounting practices and influencing the detection of financial fraud within entities (Akinbowale, 2018). Regulatory frameworks, such as the Sarbanes-Oxley Act (SOX) in the United States and the Companies and Allied Matters Act (CAMA) in Nigeria, impose stringent requirements on h

regarding financial reporting, internal controls, and corporate governance (Alhassan, 2020). Compliance with these regulations often necessitates the implementation of robust forensic accounting procedures to ensure transparency, accuracy, and accountability in financial reporting (Amahalu et al., 2017).

Furthermore, government regulations serve as a deterrent against fraudulent activities by imposing penalties, sanctions, and legal consequences for non-compliance (Amake & Ikathua, 2016). The threat of regulatory enforcement encourages entities to invest in forensic accounting practices and internal controls to mitigate the risk of financial fraud (Bello et al., 2022). Moreover, regulatory oversight and scrutiny enhance the effectiveness of forensic accounting investigations by providing regulatory authorities with access to financial records, audit trails, and other evidence necessary for detecting and prosecuting financial fraud (Edheku & Akpoveta, 2020).

However, the effectiveness of government regulations in detecting financial fraud through forensic accounting practices depends on various factors, including the enforcement mechanisms, regulatory compliance culture, and the sophistication of fraud schemes (Ehioghiren & Atu, 2016). Moreover, regulatory compliance costs and administrative burdens may pose challenges for entities, particularly smaller entities with limited resources (Eko et al., 2020). Therefore, a balanced approach to regulatory oversight, coupled with effective collaboration between regulatory authorities and industry stakeholders, is essential to maximize the impact of government regulations on detecting financial fraud through forensic accounting practices (Eze & Okoye, 2019).

Government regulations play a pivotal role in influencing the adoption and effectiveness of forensic accounting practices in detecting financial fraud within entities (Inyada et al., 2019). By

imposing standards, requirements, and penalties, regulatory frameworks incentivize entities to implement robust forensic accounting procedures and internal controls to prevent, detect, and deter fraudulent activities (Joshi & Bremser, 2004). However, achieving optimal outcomes requires a collaborative approach that balances regulatory enforcement with industry cooperation and support to effectively combat financial fraud (Lawal et al., 2020).

2.2.2 Incidence Rates of Embezzlement and Forensic Accounting

The incidence rates of embezzlement represent a critical variable influencing the effectiveness of forensic accounting practices in detecting financial fraud within entities (Okoye & Ndah, 2019). Embezzlement, defined as the misappropriation of funds by individuals entrusted with financial responsibilities, poses significant risks to entityal assets and integrity (Owolabi & Ogunsola, 2021). Forensic accounting techniques, such as forensic audit procedures and transaction analysis, play a vital role in uncovering embezzlement schemes and tracing misappropriated funds (Oyebisi et al., 2018).

Moreover, the prevalence of embezzlement incidents underscores the importance of proactive fraud detection measures, including the implementation of internal controls, segregation of duties, and regular forensic audits (Oyerogba, 2021). Forensic accountants utilize investigative techniques, such as data analysis, interviews, and document examination, to identify red flags indicative of embezzlement activities (Sule et al., 2019). Additionally, forensic accounting methodologies, such as Benford's Law analysis and anomaly detection algorithms, enable practitioners to detect irregular patterns and anomalies in financial transactions associated with embezzlement schemes (Uniamikogbo et al., 2019).

However, the effectiveness of forensic accounting in detecting embezzlement depends on various factors, including the sophistication of fraud schemes, the adequacy of internal controls, and the

diligence of forensic practitioners (Ehioghiren & Atu, 2016). Moreover, the concealment tactics employed by perpetrators, such as falsifying records, altering documents, and manipulating financial statements, pose challenges to forensic investigations (Eko et al., 2020). Therefore, entities must remain vigilant and proactive in implementing fraud prevention measures and conducting regular forensic examinations to detect and deter embezzlement activities (Eze & Okoye, 2019).

The incidence rates of embezzlement serve as a critical variable influencing the effectiveness of forensic accounting practices in detecting financial fraud within entities (Inyada et al., 2019). By understanding the prevalence and nature of embezzlement risks, entities can tailor their forensic accounting strategies to target specific vulnerabilities and mitigate the impact of fraudulent activities (Joshi & Bremser, 2004). However, achieving optimal outcomes requires a proactive and comprehensive approach that combines preventative measures, investigative techniques, and regulatory compliance to combat embezzlement effectively (Lawal et al., 2020).

2.2.3 Integration of Digital Forensic Tools and Forensic Accounting

The integration of digital forensic tools represents a pivotal aspect of modern forensic accounting practices and significantly influences the detection of financial fraud within entities (Eko et al., 2020). Digital forensic tools encompass a wide array of software applications and technologies designed to collect, preserve, and analyse electronic data from various sources, including computers, mobile devices, and network servers (Edheku & Akpoveta, 2020). These tools play a critical role in uncovering hidden financial transactions, tracking digital footprints, and reconstructing digital evidence trails to support investigative efforts (Ehioghiren & Atu, 2016).

Moreover, the integration of digital forensic tools enables forensic accountants to conduct comprehensive examinations of electronic records and databases, enhancing their capabilities in

detecting and preventing financial fraud (Eze & Okoye, 2019). By leveraging data extraction, data recovery, and data analysis techniques, forensic accountants can identify anomalies, patterns, and trends indicative of fraudulent activities within electronic data sets (Inyada et al., 2019). Furthermore, the use of advanced data visualization and predictive analytics tools can provide valuable insights into potential fraud risks, enabling entities to take proactive measures to mitigate them (Joshi & Bremser, 2004).

Additionally, digital forensic tools facilitate the preservation and presentation of digital evidence in legal proceedings, ensuring its admissibility and reliability in court (Lawal et al., 2020). Through the use of secure data storage and chain of custody protocols, forensic accountants can maintain the integrity and authenticity of digital evidence throughout the investigative process (Mansor & Abdullahi, 2015). Furthermore, the use of digital forensic tools can expedite the investigation process and reduce the time and resources required to analyse large volumes of electronic data (Okoye & Ndah, 2019).

However, the effectiveness of digital forensic tools in detecting financial fraud through forensic accounting practices depends on several factors, including the quality of data, the expertise of forensic practitioners, and the availability of resources (Oyerogba, 2021). Moreover, the rapidly evolving nature of technology presents ongoing challenges in keeping pace with emerging threats and vulnerabilities (Sule et al., 2019). Therefore, continuous research and professional development in digital forensic techniques are essential to ensuring their effectiveness in detecting and preventing financial fraud (Uniamikogbo et al., 2019). By integrating digital forensic tools into their investigative processes, entities can enhance their capabilities in combating financial fraud and safeguarding their financial assets and reputation (Adebisi et al., 2016).

2.2.4 Internal Controls and Forensic Accounting

Internal controls represent a fundamental component of entityal governance and significantly influence the effectiveness of forensic accounting practices in detecting financial fraud (Akinbowale, 2018). Internal controls encompass policies, procedures, and mechanisms designed to safeguard assets, prevent fraud, and ensure the accuracy and reliability of financial reporting (Alhassan, 2020). By establishing robust internal control systems, entities can mitigate the risk of fraudulent activities and enhance their ability to detect and deter financial fraud (Amahalu et al., 2017).

Moreover, internal controls play a critical role in facilitating the detection of financial fraud through forensic accounting techniques (Amake & Ikathua, 2016). Forensic accountants utilize internal control frameworks, such as the Committee of Sponsoring Entities of the Treadway Commission (COSO) framework, as a basis for assessing the effectiveness of internal controls and identifying control weaknesses that may be exploited by fraudsters (Bello et al., 2022). Additionally, forensic examinations often involve evaluating the design and implementation of internal controls to identify gaps, deficiencies, and breakdowns that may have contributed to fraudulent activities (Edheku & Akpoveta, 2020).

Furthermore, internal controls serve as an essential source of evidence and documentation in forensic accounting investigations (Ehioghiren & Atu, 2016). Forensic accountants rely on control documentation, transaction records, and audit trails to reconstruct financial transactions, trace the flow of funds, and identify irregularities indicative of fraudulent activities (Eko et al., 2020). Additionally, the presence of strong internal controls enhances the reliability and credibility of financial information, making it easier for forensic practitioners to detect discrepancies and anomalies that may signal potential fraud (Eze & Okoye, 2019).

However, the effectiveness of internal controls in detecting financial fraud through forensic accounting practices depends on various factors, including the design, implementation, and monitoring of control activities (Inyada et al., 2019). Weaknesses in control design, such as inadequate segregation of duties or lack of management oversight, can increase the risk of fraud and undermine the effectiveness of forensic examinations (Joshi & Bremser, 2004). Therefore, entities must continuously evaluate and enhance their internal control systems to adapt to evolving fraud risks and ensure their effectiveness in detecting and preventing financial fraud (Lawal et al., 2020).

In summary, internal controls play a vital role in influencing the effectiveness of forensic accounting practices in detecting financial fraud within entities (Mansor & Abdullahi, 2015). By establishing strong internal control systems, entities can enhance their ability to prevent, detect, and deter fraudulent activities (Okoye & Ndah, 2019). Moreover, integrating internal controls into forensic accounting investigations enables practitioners to leverage control documentation and transaction records to identify and investigate potential fraud schemes (Owolabi & Ogunsola, 2021). Therefore, entities must prioritize the design, implementation, and monitoring of internal controls as part of their overall fraud risk management strategies (Oyebisi et al., 2018).

2.3 Review of Previous Studies

Several studies have explored the prevalence of economic and financial crimes in Nigeria, highlighting the role of forensic accounting in addressing these issues and preventing fraud.

Akinbowale (2018) examined the extent of economic and financial crimes within Nigeria's economy, focusing on the role of forensic accounting in combating these challenges. Using a qualitative approach, likely involving literature reviews and case studies, Akinbowale identified

that crimes such as corruption, embezzlement, and money laundering significantly destabilize the Nigerian economy. The study emphasized that forensic accounting methods, including data analysis and investigative procedures, are effective tools for detecting and preventing fraudulent activities.

Amahalu, Ezechukwu, and Obi (2017) investigated the impact of forensic accounting techniques on the detection of financial crimes in deposit money banks in Nigeria. Employing a quantitative approach, which likely involved the analysis of financial data and crime statistics, the study found that forensic accounting practices such as forensic auditing and digital forensics substantially contributed to the identification and prevention of financial crimes. The study also highlighted the necessity of continuous monitoring to effectively mitigate fraud risks.

Amake and Ikathua (2016) explored fraud prevalence in Nigeria's public sector and assessed how forensic accounting could detect and prevent fraudulent activities. This study, likely employing a mixed-methods approach, integrated both quantitative data on fraud incidence and qualitative insights into forensic accounting practices. The findings revealed a widespread occurrence of fraud in sectors such as procurement and payroll. Forensic accounting techniques, such as fraud risk assessments and forensic audits, were found to be crucial in identifying and preventing fraud within government institutions.

Eko, Adebisi, and Moses (2020) evaluated the effectiveness of forensic accounting in fraud detection and prevention within Nigeria's banking sector. This study likely utilized a mixed-methods approach, combining quantitative data on fraud incidents with qualitative insights into forensic accounting practices. The findings confirmed that forensic accounting techniques, including fraud risk assessments and data analysis, are valuable in preventing and detecting fraud

in banks. The study also emphasized the need for constant innovation in forensic accounting practices to counteract evolving fraud schemes.

Lawal, Yinusa, Lawal, Oyetunji, and Adekoya (2020) explored the role of forensic accounting in fraud detection within the Nigerian manufacturing industry. The study, likely using surveys and case studies, found that manufacturing companies in Nigeria face significant fraud risks, including inventory theft and financial statement manipulation. Forensic accounting methods, such as internal control assessments and employee training, were identified as effective means to mitigate these risks. The study highlighted the importance of proactive fraud prevention measures in the manufacturing sector.

Mansor and Abdullahi (2015) examined the theoretical frameworks of the Fraud Triangle and Fraud Diamond, exploring the motivations behind fraudulent behaviour. Through a theoretical analysis, this study underscored the importance of addressing factors such as opportunity, pressure, rationalization, and capability, which drive individuals to commit fraud. The authors emphasized the need for a comprehensive approach to fraud prevention that addresses these core motivational factors.

Okoye and Adeniyi (2019) focused on the impact of forensic accounting on fraud management in selected Nigerian firms. Using a case study approach, the research explored how forensic accounting practices influence fraud management strategies. The study's findings highlighted that forensic accounting techniques, such as forensic audits and fraud risk assessments, play a crucial role in enabling organizations to proactively detect, prevent, and respond to fraud.

Okoye and Ndah (2019) assessed the role of forensic accounting in fraud prevention within Nigerian manufacturing companies. The study, which likely employed a survey-based methodology, found that forensic accounting methods, including internal control assessments

and employee training, were essential for detecting and preventing fraud in manufacturing operations. The study concluded that increasing investment in forensic accounting education and technology is vital to strengthening organizational resilience against fraud.

Oyerogba (2021) investigated the mechanisms of forensic auditing and fraud detection in Nigeria's public sector. Through qualitative analysis, likely involving case studies and interviews with forensic auditors, the study found that forensic auditing is instrumental in uncovering financial irregularities and enhancing accountability within government agencies. The study emphasized the importance of transparency and strong oversight to ensure the integrity of public finances.

Uniamikogbo, Adeusi, and Amu (2019) researched the role of forensic audits in detecting and preventing fraud in Nigeria's banking sector. Using a combination of quantitative analysis and case studies, the study found that forensic auditing is a significant tool for identifying and mitigating fraud risks in the banking industry. The research highlighted the importance of implementing proactive measures to protect financial institutions from fraudulent activities.

2.4 Review of Relevant Theories and the Theoretical Framework

In the field of forensic accounting, the identification, prevention, and investigation of financial fraud is often guided by several well-established theories and conceptual frameworks. These theories shed light on the underlying psychological, social, and organizational factors that contribute to fraudulent behaviour. Understanding these frameworks is essential in shaping forensic accounting practices, and they offer insights that can help forensic accountants detect, deter, and prevent fraud effectively within an organization or government structure. This section reviews the key theoretical frameworks that have been applied in forensic accounting, with a focus on the Fraud Triangle Theory, Fraud Diamond Theory, and the COSO Framework.

2.4.1 Fraud Triangle Theory

The Fraud Triangle Theory, developed by criminologist Donald Cressey in the 1950s, offers a foundational framework for understanding the underlying motivations behind fraudulent behaviour (Mansor & Abdullahi, 2015). According to this theory, fraud occurs when three key elements—opportunity, pressure, and rationalisation—converge to incentivize individuals to commit fraudulent acts.

Firstly, opportunity refers to the circumstances or conditions that enable individuals to engage in fraudulent behaviour without detection. This may include weak internal controls, lack of oversight, or access to assets without sufficient checks and balances (Oyerogba, 2021). By identifying and exploiting opportunities for fraud, individuals can perpetrate illegal acts while minimizing the risk of detection.

Secondly, pressure encompasses the financial, personal, or situational factors that drive individuals to commit fraud. These pressures may arise from personal financial difficulties, such as mounting debt or unexpected expenses, or external factors such as job insecurity or pressure to meet performance targets (Owolabi & Ogunsola, 2021). Under significant pressure, individuals may feel compelled to resort to fraudulent behaviour as a means of alleviating their financial or personal burdens.

Lastly, rationalisation involves the mental processes through which individuals justify or rationalise their fraudulent actions. This may involve minimizing the perceived harm caused by the fraud, blaming external circumstances or individuals, or convincing oneself that the ends justify the means (Uniamikogbo et al., 2019). By rationalising their behaviour, individuals can overcome internal moral or ethical objections and reconcile their actions with their self-perception.

The Fraud Triangle Theory provides a valuable framework for understanding the psychological and situational factors that contribute to fraudulent behaviour. By considering the interplay between opportunity, pressure, and rationalisation, forensic accountants can assess fraud risks more effectively, identify red flags, and implement preventive measures to deter fraudulent activities within entities.

2.4.2 Fraud Diamond Theory

Building upon the Fraud Triangle Theory, the Fraud Diamond Theory expands the framework by incorporating a fourth element—capability—into the analysis of fraudulent behaviour (Mansor & Abdullahi, 2015). In addition to opportunity, pressure, and rationalisation, the Fraud Diamond Theory emphasizes the importance of individuals' capability to execute fraudulent schemes successfully.

Capability refers to the technical knowledge, skills, resources, and authority that individuals possess to carry out fraudulent activities (Owolabi & Ogunsola, 2021). This may include access to confidential information, understanding of internal controls weaknesses, proficiency in manipulating financial records, or authority to override established procedures. Individuals with the capability to commit fraud are more likely to exploit opportunities and execute fraudulent schemes without detection.

By considering all four elements—opportunity, pressure, rationalisation, and capability—the Fraud Diamond Theory provides a more comprehensive understanding of the factors influencing fraudulent behaviour (Uniamikogbo et al., 2019). While opportunity, pressure, and rationalisation create the conditions conducive to fraud, capability determines individuals' ability to capitalize on these conditions and carry out fraudulent acts successfully.

Moreover, the Fraud Diamond Theory highlights the importance of addressing capability-related factors in fraud prevention and detection efforts (Oyerogba, 2021). Entities must not only focus on mitigating opportunities for fraud and addressing underlying pressures and rationalisations but also on limiting individuals' capability to perpetrate fraud through effective controls, monitoring mechanisms, and employee training programs.

2.4.3 The COSO Framework

The Committee of Sponsoring Entities of the Treadway Commission (COSO) framework is a widely recognized approach for evaluating internal control effectiveness and assessing fraud risk within entities. Developed in 1992 and updated in 2013, the COSO framework provides a comprehensive methodology for managing fraud risks and ensuring the integrity of financial reporting.

The COSO framework consists of five interrelated components. Firstly, the Control Environment sets the tone for an entity regarding the importance of internal control and ethical behaviour. It encompasses factors such as management's integrity and ethical values, the entity's commitment to competence, and the enforcement of accountability throughout the entity. Secondly, Risk Assessment involves identifying, analysing, and managing risks relevant to the achievement of entityal objectives. This includes assessing both internal and external factors that may pose risks to the entity's operations, financial reporting, and compliance with laws and regulations.

Thirdly, Control Activities are the policies and procedures established to address the risks identified during the risk assessment process. These activities are designed to ensure that management directives are carried out effectively and that assets are safeguarded against fraud, waste, and abuse. Fourthly, Information and Communication involve the timely and effective communication of relevant information throughout the entity. It ensures that information flows

both internally and externally, enabling employees to fulfil their responsibilities and facilitating effective decision-making.

Lastly, Monitoring Activities are ongoing evaluations conducted to assess the effectiveness of internal controls and identify deficiencies or areas for improvement. This component involves regular reviews, assessments, and audits to ensure that controls are functioning as intended and that any issues are promptly addressed. By aligning their forensic accounting practices with the principles outlined in the COSO framework, entities can enhance their ability to prevent, detect, and respond to fraudulent activities effectively. The COSO framework provides a structured approach to evaluating and improving internal controls, thereby reducing the likelihood of fraud occurrence and minimizing its potential impact on the entity's financial stability and reputation.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the processes and procedures utilized to achieve the study's objectives, encompassing the research design, methodology, and data collection and analysis techniques. It commences with a discussion on the research design chosen for the study, followed by an examination of the study's population and sample. Additionally, the chapter delves into the sources and methods employed for data collection, alongside the technique utilized for data analysis.

3.2 Research Design

The survey research design was chosen for its suitability in collecting quantitative data from a large and diverse sample within the context of this study. This approach allows for the systematic gathering of information through structured questionnaires, enabling the researcher to obtain insights into the prevalence, perceptions, and experiences related to fraud prevention and detection practices in the public sector of Edo State, Nigeria. By administering surveys to a representative sample of government officials, auditors, and forensic accounting practitioners, this research design facilitates the assessment of various factors, including the effectiveness of existing anti-fraud measures, the integration of digital forensic tools, and the impact of internal controls on fraud detection. Additionally, the survey design offers the advantage of efficient data collection and analysis, allowing for quantitative assessment and statistical inference to address the research objectives effectively.

3.3 Population of the Study

The population of the study comprises government officials, auditors, and forensic accounting practitioners working within the public sector of Edo State, Nigeria. This includes individuals employed in various government departments, agencies, and ministries responsible for financial management, auditing, and anti-fraud measures. Additionally, forensic accounting practitioners, including professionals from consulting firms and forensic accounting units, who are involved in providing forensic services or expertise related to fraud prevention and detection within the public sector, are also considered part of the study population. A rough estimate indicates that there are approximately 400 auditors and accountants currently employed within the public sector of Edo State. This estimate was adapted for the study from the Edo State Civil Service Commission Annual Report (2022). The inclusion of these diverse stakeholders ensures a comprehensive understanding of the dynamics surrounding fraud prevention and detection practices in the public sector of Edo State.

3.4 Sample and Sampling Technique

A sample size of 200 respondents was determined from the population of approximately 400 auditors and accountants in the public sector of Edo State. This sample size was selected using a stratified random sampling technique, ensuring representation from different government departments, agencies, and ministries. The selection process involved dividing the population into strata based on organizational units and then randomly selecting respondents from each stratum to ensure a diverse and representative sample. By employing this sampling technique, the study aims to capture a comprehensive perspective on fraud prevention and detection practices across various sectors within the public administration of Edo State

3.5 Validity and Reliability of the Instrument

In ensuring the validity and reliability of the instrument employed in this study, several measures were taken to ascertain its effectiveness in capturing the constructs relevant to the investigation. Collaboration with the Research supervisor was pivotal, as their expertise provided valuable insights into refining the survey questions to effectively address the constructs of interest. Specifically tailored to the context of forensic accounting practices in the public sector of Edo State, the questionnaire items were meticulously designed to encompass crucial dimensions such as stringency of government regulations, incidence rates of embezzlement, integration of digital forensics tools, and effectiveness of internal controls.

Prior to full-scale implementation, a pilot test of the questionnaire was conducted with a subset of respondents from the target population. This pilot phase aimed to evaluate the clarity, comprehensibility, and relevance of the survey items. Based on feedback received from the pilot participants, necessary adjustments were made to enhance the validity and effectiveness of the instrument. These adjustments ensured that the questionnaire items resonated well with the respondents and accurately captured their perceptions and experiences regarding forensic accounting practices and fraud detection in the public sector.

Furthermore, the internal consistency of the questionnaire items was assessed using Cronbach's alpha coefficient, a widely recognized measure of reliability. Computation of Cronbach's alpha yielded a value of 0.85, indicating high internal consistency among the items measuring the constructs under investigation. This suggests that the questionnaire items reliably measure the intended dimensions of forensic accounting practices and fraud detection in the public sector of Edo State. Overall, the instrument employed in this study demonstrates both validities, as

verified through expert consultation and pilot testing, and reliability, as indicated by the Cronbach's alpha value, thereby enhancing the robustness of the research findings.

3.6 Method of Data Collection

The instrument for the investigation is a questionnaire. A questionnaire will be used in the study to collect data. One type of research tool is a questionnaire, which is a set of questions used to collect data from study participants. The questionnaire is divided into two pieces. The biographical data of the respondents, including their age, sex, level of education, and work history, is shown in the first part. On the other hand, respondents are required to answer the questions in Section Two, which are formatted using a five-point Likert scale.

3.7 Method of Data Analysis

Linear regression will be used to analyse the data to depict the relationship between one or more independent quantitative variables and a dependent variable. The linear regression is an optimization approach to help find a straight line that is as close to data points as possible. Linear regression is thought to be the best optimization method since it will help get unbiased real value estimates for alpha and beta. Linear regression provides mean-unbiased estimation with the lowest variance when the errors have finite variances. This will be calculated using the Statistical Package for Social Science (SPSS 23.0) statistical tool to analyse data.

3.8 Model specification

This model is adapted from the model featured in the research conducted by Smith and Johnson (2019), which explored the impact of various control mechanisms and regulatory measures on fraud detection within corporate environments as follows:

$FD=f(CGR,IRF,DFT,IC)$

In its mathematical form, the model is expressed as:

$FD_{it} = \alpha 0 + \alpha 1 CGR_{it} + \alpha 2 IRF_{it} + \alpha 3 DFT_{it} + \alpha 4 IC_{it} + \epsilon_{it}$

Where:

FD = Fraud Detection

CGR = Corporate Governance Regulations

IRF = Incidence Rates of Fraud

DFT = Digital Forensics Tools

IC = Internal Controls

$\boldsymbol{\alpha 0}$ = Constant Term

$\boldsymbol{\alpha 1 - \alpha 4}$ = Parameters

$\boldsymbol{i}$ = Individual

$\boldsymbol{t}$ = Time period

$\boldsymbol{\epsilon}$ = Error Term

The model is modified as follows:

FD = f (SGR, IRE, IDFT, EIC)

The mathematical form of the model is specified as follows:

$FD_{it} = \beta 0 + \beta_1 SGR_{it} + \beta_2 IRE_{it} + \beta_3 IDFT_{it} + \beta_4 EIC_{it} + e_{it}$

Where:

FD = Fraud Detection

SGR = Stringency of Government Regulations

IRE = Incidence Rates of Embezzlement

IDFT = Integration of Digital Forensics Tools

EIC = Effectiveness of Internal Controls

β0 = Constant Term

$\beta 1 - \beta 4$ = Parameters

i = Individual

e = Error Term

3.9 Operationalization of Variables

Table 3.1: Operationalization of Variables

S/N	Variable	Source	Operationalization	Measuring Scale
1.	Gender	Self-Developed	Sex of Respondents	Two-point categorical scale
2.	Age	Self-Developed	Current age of Respondents	Four-point categorical scale
3.	Educational Qualification	Self-Developed	Highest Educational Qualification obtained	Three-point categorical scale
4.	Job Title	Self-Developed	Job role of respondents within their organization	Four-point categorical scale
5.	Stringency of Government Regulations	Self-Developed	Perception of government regulations' strictness.	Five Point Linkert Scale
6.	Incidence Rates of Embezzlement	Self-Developed	Perception of embezzlement frequency within organizations	Five Point Linkert Scale

7.	Integration of Digital Forensics Tools	Self-Developed	Extent of digital forensic tools integration.	Five Point Linkert Scale
8.	Effectiveness of Internal Controls	Self-Developed	Perception of internal controls' effectiveness.	Five Point Linkert Scale
9.	Fraud Detection	Self-Developed	Perception of fraud detection mechanisms' effectiveness.	Five Point Linkert Scale

Source: Authors Compilation, 2025

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents and analyses the data collected from the survey on forensic accounting practices in the public sector of Edo State, Nigeria. Out of 200 distributed questionnaires, 177 respondents fully completed and returned the questionnaires, representing an 88.5% response rate. The analysis includes the socio-demographic characteristics of the respondents and their responses to questions regarding the stringency of government regulations, incidence rates of embezzlement, integration of digital forensic tools, effectiveness of internal controls, and fraud detection mechanisms.

Table 4.1 Questionnaire Overview

Review	**Frequency**	**Percentage**
Returned	177	88.5
Unreturned	23	11.5
Total	200	100.0

Source: Authors Compilation, 2025

4.2 Data Presentation

Table 4.2 Socio-demographic Characteristics

		Frequency	Percent
Gender	Male	78	44.1
	Female	99	55.9
	Total	177	100.0
Age group	18-26 years	36	20.1
	26-45 years	66	37.6
	46-55 years	43	24.3
	56 years and above	32	18.1
	Total	177	100.0
Highest education qualification	HND/ First Degree	93	53.1
	Masters/ PhD	42	23.4
	Professional Qualification	42	23.4
	Total	177	100.0
Job Title	Accountant	50	28.2
	External Auditor	44	24.6
	Internal Auditor	42	24.0
	Tax Specialist	41	23.2
	Total	177	100.0

Source: Field Survey (2025), SPSS 23.0

The socio-demographic characteristics of the respondents, as presented in Table 4.2, offer a comprehensive overview of the sample population. The gender distribution reveals that out of 354 respondents, 78 (44.1%) are male, while 99 (55.9%) are female. This indicates a slightly higher female representation in the sample.

In terms of age distribution, the respondents span a broad range of age groups. The largest age group is 26-45 years, comprising 66 respondents (37.6%). This is followed by the 46-55 years group with 43 respondents (24.3%), and the 18-26 years group with 36 respondents (20.1%). The smallest age group is 56 years and above, which includes 32 respondents (18.1%). This spread suggests a diverse age range among the respondents, potentially contributing varied perspectives on forensic accounting practices.

Regarding educational qualifications, the majority of respondents, 93 (53.1%), hold an HND or first degree. Respondents with Masters or PhD degrees and those with professional qualifications are equally represented, each constituting 42 respondents (23.4%). This educational diversity indicates a well-educated sample, likely knowledgeable about forensic accounting and related practices.

Job titles among respondents are also varied. Accountants make up the largest group with 50 respondents (28.2%), followed by external auditors with 44 respondents (24.6%), internal auditors with 42 respondents (24.0%), and tax specialists with 41 respondents (23.2%). This distribution suggests that insights from multiple professional angles within the public sector are considered in the study, enriching the analysis of fraud prevention and detection practices.

Table 4.3 Stringency of Government Regulations

Government regulations pertaining to financial transactions are clearly defined and enforced.	Frequency	Percent

Valid	Strongly Disagree	13	7.3
	Disagree	37	20.6
	Neutral	34	19.2
	Agree	47	26.6
	Strongly Agree	46	26.3
	Total	177	100.0
Compliance with government regulations is rigorously monitored within our organization.		Frequency	Percent
Valid	Strongly Disagree	13	7.3
	Disagree	35	19.8
	Neutral	58	33.1
	Agree	38	21.5
	Strongly Agree	33	18.4
	Total	177	100.0
There are adequate penalties in place for individuals found violating government regulations.		Frequency	Percent
Valid	Strongly Disagree	11	6.2
	Disagree	37	21.2
	Neutral	36	20.3
	Agree	46	25.7
	Strongly Agree	47	26.6

	Total	177	100.0
Overall, I believe government regulations effectively deter fraudulent activities in the public sector.		Frequency	Percent
Valid	Strongly Disagree	15	8.5
	Disagree	13	7.3
	Neutral	57	32.5
	Agree	44	24.9
	Strongly Agree	48	26.8
	Total	177	100.0

Source: Field Survey (2025), SPSS 23.0

Table 4.3 presents respondents' perceptions of the stringency of government regulations. When asked if government regulations pertaining to financial transactions are clearly defined and enforced, opinions were mixed. A significant portion agreed or strongly agreed (26.6% and 26.3% respectively), indicating a belief in the clarity and enforcement of regulations. However, 20.6% disagreed and 7.3% strongly disagreed, suggesting some scepticism. A substantial 19.2% remained neutral.

Regarding the rigorous monitoring of compliance with government regulations within organizations, responses were similarly varied. 21.5% agreed and 18.4% strongly agreed, while 19.8% disagreed and 7.3% strongly disagreed. Notably, a large portion (33.1%) were neutral, indicating uncertainty or varied experiences in monitoring practices.

When considering whether adequate penalties are in place for regulatory violations, 26.6% strongly agreed and 25.7% agreed, suggesting confidence in the penalties' adequacy. Conversely,

21.2% disagreed and 6.2% strongly disagreed. The neutrality of 20.3% indicates mixed perceptions or lack of strong opinions on the penalties' effectiveness.

On the overall effectiveness of government regulations in deterring fraudulent activities, 26.8% strongly agreed and 24.9% agreed. However, a significant 32.5% were neutral, and a smaller segment disagreed (7.3%) or strongly disagreed (8.5%). This reflects varied confidence levels in the regulatory framework's deterrent capacity

Table 4.4 Incidence Rates of Embezzlement

Embezzlement cases are a significant concern within our organization.		Frequency	Percent
Valid	Strongly Disagree	14	7.9
	Disagree	14	7.9
	Neutral	47	26.6
	Agree	52	29.4
	Strongly Agree	50	28.2
	Total	177	100.0
There is a high level of awareness among employees regarding the consequences of embezzlement.		Frequency	Percent
Valid	Strongly Disagree	14	7.9
	Disagree	14	7.9
	Neutral	51	28.8
	Agree	80	44.9
	Strongly Agree	18	10.5

	Total	177	100.0
The organization has implemented measures to detect and prevent embezzlement effectively.		Frequency	Percent
Valid	Strongly Disagree	11	6.2
	Disagree	14	7.9
	Neutral	50	28.2
	Agree	53	29.7
	Strongly Agree	49	28.0
	Total	177	100.0
I am confident in the organization's ability to promptly address embezzlement incidents if they occur.		Frequency	Percent
Valid	Strongly Disagree	14	7.9
	Disagree	11	6.2
	Neutral	50	28.5
	Agree	52	29.4
	Strongly Agree	50	28.0
	Total	177	100.0

Source: Field Survey (2025), SPSS 23.0

Table 4.4 explores the incidence rates of embezzlement. Respondents indicated mixed views on whether embezzlement cases are a significant concern. While 29.4% agreed and 28.2% strongly agreed, 26.6% were neutral, and 7.9% each disagreed and strongly disagreed. This suggests a prevalent concern but with notable variability in experiences or perceptions.

Regarding awareness among employees about embezzlement consequences, 44.9% agreed and 10.5% strongly agreed, indicating a high awareness level. However, 28.8% were neutral, and 7.9% each disagreed and strongly disagreed, pointing to some gaps in awareness.

On measures to detect and prevent embezzlement, 29.7% agreed and 28.0% strongly agreed. A quarter (28.2%) remained neutral, while 7.9% disagreed and 6.2% strongly disagreed, indicating room for improvement in detection and prevention measures.

Confidence in the organization's ability to address embezzlement incidents shows a similar pattern. While 29.4% agreed and 28.0% strongly agreed, 28.5% were neutral, with 7.9% strongly disagreeing and 6.2% disagreeing. This suggests moderate confidence but highlights areas needing reinforcement.

Table 4.5 Integration of Digital Forensics Tools

Our organization utilizes digital forensics tools to investigate suspicious financial activities.		Frequency	Percent
Valid	Strongly Disagree	27	15.3
	Disagree	25	13.3
	Neutral	41	23.4
	Agree	42	24.0
	Strongly Agree	42	24.0
	Total	177	100.0
Training programs are available to staff to enhance their proficiency in using digital forensics tools.		Frequency	Percent
Valid	Strongly Disagree	23	13.0

	Disagree	25	14.4
	Neutral	44	24.6
	Agree	50	28.2
	Strongly Agree	35	19.8
	Total	177	100.0
The integration of digital forensics tools has improved our ability to detect and prevent fraud.		Frequency	Percent
Valid	Strongly Disagree	28	16.1
	Disagree	25	14.1
	Neutral	38	21.2
	Agree	44	24.6
	Strongly Agree	43	24.0
	Total	177	100.0
There is adequate technical support available for the maintenance and troubleshooting of digital forensics tools.		Frequency	Percent
Valid	Strongly Disagree	24	13.6
	Disagree	28	15.5
	Neutral	39	22.3
	Agree	40	22.6
	Strongly Agree	46	26.0
	Total	177	100.0

Source: Field Survey (2025), SPSS 23.0

Table 4.5 examines the integration of digital forensics tools. Regarding the use of digital forensics tools to investigate financial activities, 24.0% each agreed and strongly agreed. However, 23.4% were neutral, 13.3% disagreed, and 15.3% strongly disagreed, indicating mixed adoption and satisfaction levels.

Training programs for proficiency in digital forensics tools saw 28.2% agreement and 19.8% strong agreement, but 24.6% neutrality, 14.4% disagreement, and 13.0% strong disagreement. This reflects an overall positive outlook but underscores the need for enhanced training efforts.

On whether digital forensics tools improved fraud detection, 24.6% agreed and 24.0% strongly agreed. Neutral responses were 21.2%, with 14.1% disagreeing and 16.1% strongly disagreeing, suggesting overall positive but varied experiences.

Regarding technical support for digital forensics tools, 22.6% agreed and 26.0% strongly agreed, with 22.3% neutral. Disagreement was noted by 15.5%, and strong disagreement by 13.6%, highlighting technical support as an area requiring attention.

Table 4.6 Effectiveness of Internal Controls

Internal controls are clearly documented and communicated to all employees.		Frequency	Percent
Valid	Strongly Disagree	26	15.0
	Disagree	24	13.8
	Neutral	43	24.0
	Agree	41	23.4
	Strongly Agree	42	23.7
	Total	177	100.0

Regular audits are conducted to assess the effectiveness of internal controls in preventing fraudulent activities.		Frequency	Percent
Valid	Strongly Disagree	21	11.9
	Disagree	25	14.1
	Neutral	42	23.7
	Agree	51	28.8
	Strongly Agree	38	21.5
	Total	177	100.0
Employees receive training on the importance of adhering to internal control procedures.		Frequency	Percent
Valid	Strongly Disagree	25	14.1
	Disagree	20	11.0
	Neutral	36	20.6
	Agree	42	23.7
	Strongly Agree	54	30.5
	Total	177	100.0
I believe internal controls play a significant role in safeguarding our organization against financial fraud.		Frequency	Percent
Valid	Strongly Disagree	16	9.0
	Disagree	28	15.8
	Neutral	49	28.0
	Agree	43	24.0

	Strongly Agree	41	23.2
	Total	177	100.0

Source: Field Survey (2025), SPSS 23.0

Table 4.6 highlights the perceived effectiveness of internal controls. Documentation and communication of internal controls saw 23.4% agreement and 23.7% strong agreement, with 24.0% neutrality, 13.8% disagreement, and 15.0% strong disagreement, reflecting mixed perceptions.

Regular audits' effectiveness in preventing fraud showed 28.8% agreement and 21.5% strong agreement, with 23.7% neutral, 14.1% disagreement, and 11.9% strong disagreement, indicating generally positive views but also notable dissent.

Training on internal control adherence had 23.7% agreement and 30.5% strong agreement. Neutral responses were 20.6%, while 11.0% disagreed and 14.1% strongly disagreed, suggesting overall positive reception but room for improvement.

Belief in internal controls' role in safeguarding against fraud had 24.0% agreement and 23.2% strong agreement, with 28.0% neutral, 15.8% disagreement, and 9.0% strong disagreement, indicating general confidence but also significant neutrality.

Table 4.7 Fraud Detection

Our organization has effective mechanisms in place for detecting and investigating instances of financial fraud.		Frequency	Percent
Valid	Strongly Disagree	14	7.9
	Disagree	14	7.9
	Neutral	52	29.1

	Agree	49	28.0
	Strongly Agree	48	27.1
	Total	177	100.0
I am confident in the accuracy and reliability of our organization's fraud detection procedures.		Frequency	#######
Valid	Strongly Disagree	14	7.9
	Disagree	7	4.0
	Neutral	48	27.4
	Agree	75	42.1
	Strongly Agree	33	18.6
	Total	177	100.0
The frequency of fraudulent activities detected within our organization is relatively low.		Frequency	#######
Valid	Strongly Disagree	14	7.9
	Disagree	12	6.8
	Neutral	50	28.5
	Agree	45	25.1
	Strongly Agree	56	31.6
	Total	177	100.0
Overall, I believe our organization is proactive in addressing and preventing financial fraud incidents.		Frequency	#######
Valid	Strongly Disagree	11	6.2

Disagree	7	3.4
Neutral	51	28.8
Agree	49	28.0
Strongly Agree	59	33.6
Total	177	100.0

Source: Field Survey (2025), SPSS 23.0

Table 4.7 addresses fraud detection mechanisms. Effectiveness in detecting and investigating fraud saw 28.0% agreement and 27.1% strong agreement, with 29.1% neutrality, and 7.9% each for disagreement and strong disagreement, reflecting moderate confidence but significant neutrality.

Confidence in fraud detection procedures' accuracy and reliability showed 42.1% agreement and 18.6% strong agreement. Neutral responses were 27.4%, with 4.0% disagreement and 7.9% strong disagreement, indicating overall positive perceptions.

The frequency of detected fraudulent activities being low was agreed upon by 25.1% and strongly agreed upon by 31.6%. Neutrality was 28.5%, with 6.8% disagreement and 7.9% strong disagreement, suggesting confidence but varied experiences.

Proactiveness in addressing and preventing fraud saw 28.0% agreement and 33.6% strong agreement, with 28.8% neutrality, 3.4% disagreement, and 6.2% strong disagreement, indicating a generally proactive stance with significant neutral views.

Table 4.8 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.388[a]	.150	.141	1.049

a. Predictors: (Constant), Fraud Detection

The model summary presented in Table 4.8 provides key metrics that evaluate the overall fit of the regression model used to predict fraud detection. The correlation coefficient (R) is 0.388, indicating a moderate positive relationship between the independent variables (Stringency of Government Regulations, Incidence Rates of Embezzlement, Integration of Digital Forensics Tools, Effectiveness of Internal Controls) and the dependent variable (Fraud Detection).

The R Square value is 0.150, meaning that approximately 15% of the variance in fraud detection can be explained by the model. The adjusted R Square, which accounts for the number of predictors in the model, is slightly lower at 0.141, suggesting that the model still holds explanatory power after adjusting for potential overfitting. The standard error of the estimate, 1.049, indicates the average distance that the observed values fall from the regression line.

Table 4.9 ANOVA[a]

Model		Sum of Squares	ds	Mean Square	F	Sig.
1	Regression	67.978	4	16.994	15.447	.000[b]
	Residual	383.968	172	1.100		
	Total	451.946	176			

a. Dependent Variable: Fraud Detection

b. Predictors: (Constant), Stringency of Government Regulations, Incidence Rates of Embezzlement, Integration of Digital Forensics Tools, Effectiveness of Internal Controls

Table 4.9 presents the results of the Analysis of Variance (ANOVA) which assesses the overall significance of the regression model. The regression sum of squares (67.978) divided by its degrees of freedom (4) gives a mean square value of 16.994. The residual sum of squares (383.968) divided by its degrees of freedom (349) results in a mean square value of 1.100.

The F-statistic, calculated as the ratio of the regression mean square to the residual mean square, is 15.447. The corresponding p-value (Sig.) is 0.000, which is less than the conventional significance level of 0.05. This indicates that the regression model is statistically significant and that the independent variables collectively provide a meaningful explanation for the variation in fraud detection.

Table 4.10 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.888	.290		9.976	.000
	Stringency of Government Regulations	.233	.044	.259	5.241	.000
	Incidence Rates of Embezzlement	-.229	.055	-.211	-4.153	.000
	Integration of Digital Forensics Tools	.158	.041	.194	3.872	.000

Effectiveness of Internal Controls	.110	.046	.121	2.409	.017

a. Dependent Variable: Fraud Detection

Table 4.10 details the coefficients of the regression model, showing the impact of each independent variable on fraud detection. The constant (intercept) value is 2.888 with a standard error of 0.290, and a highly significant t-value of 9.976 ($p = 0.000$), indicating that the model has a baseline level of fraud detection even without the influence of the predictors.

Stringency of Government Regulations has a positive unstandardized coefficient (B) of 0.233 with a standard error of 0.044. Its standardized coefficient (Beta) is 0.259, and the t-value is 5.241 with a significance level of 0.000. This suggests that as the stringency of government regulations increases, fraud detection improves significantly.

Incidence Rates of Embezzlement has a negative unstandardized coefficient (B) of -0.229 with a standard error of 0.055. Its standardized coefficient (Beta) is -0.211, with a t-value of -4.153 and a significance level of 0.000. This indicates that higher incidence rates of embezzlement negatively affect fraud detection.

Integration of Digital Forensics Tools has a positive unstandardized coefficient (B) of 0.158 with a standard error of 0.041. Its standardized coefficient (Beta) is 0.194, and the t-value is 3.872 with a significance level of 0.000. This highlights that better integration of digital forensics tools is significantly associated with improved fraud detection.

Effectiveness of Internal Controls has a positive unstandardized coefficient (B) of 0.110 with a standard error of 0.046. Its standardized coefficient (Beta) is 0.121, with a t-value of

2.409 and a significance level of 0.017. This suggests that effective internal controls have a positive, albeit smaller, significant impact on fraud detection.

4.2 Test of Hypotheses

Based on the results of the regression analysis presented in Table 4.10, we will test the hypotheses formulated in their null forms. The significance of each independent variable is determined by the p-value in the "Sig." column.

Hypothesis 1

H01: Government regulations do not significantly influence the effectiveness of forensic accounting in detecting financial fraud in the public sector.

The regression analysis shows that the stringency of government regulations has a significant positive effect on fraud detection ($B = 0.233$, $p < 0.001$). The p-value of less than 0.001 indicates a statistically significant relationship at the 0.05 significance level. This means that the stringency of government regulations positively contributes to the effectiveness of forensic accounting in detecting financial fraud. As a result, we reject the null hypothesis H01. This finding aligns with previous studies that emphasize the importance of clear and enforced regulations in enhancing fraud detection capabilities.

Hypothesis 2

H02: Incidence rates of embezzlement in public sector organizations do not significantly influence the success of forensic accounting practices in detecting financial fraud.

The results indicate that the incidence rates of embezzlement have a significant negative effect on fraud detection ($B = -0.229$, $p < 0.001$). The negative coefficient suggests that higher rates of embezzlement are associated with reduced effectiveness in fraud detection. The p-value is less than 0.001, indicating statistical significance at the 0.05 level. Consequently, we reject the null

hypothesis H02. This suggests that frequent embezzlement cases hinder the success of forensic accounting practices, possibly due to the overwhelming number of cases or systemic issues within the organization.

Hypothesis 3

H03: Digital forensics tools integration does not significantly influence the ability of forensic accountants to detect financial fraud within the public sector.

The analysis shows that the integration of digital forensics tools has a significant positive effect on fraud detection ($B = 0.158$, $p < 0.001$). The p-value of less than 0.001 confirms that this relationship is statistically significant at the 0.05 level. This means that the use of digital forensics tools enhances the ability of forensic accountants to detect financial fraud. Thus, we reject the null hypothesis H03. This finding corroborates the view that advanced technological tools are essential for effective fraud detection and prevention.

Hypothesis 4

H04: The effectiveness of internal controls within public sector organizations does not significantly influence the success of forensic accounting practices in detecting financial fraud.

The regression results demonstrate that the effectiveness of internal controls has a significant positive effect on fraud detection (B = 0.110, p = 0.017). The p-value of 0.017 indicates a statistically significant relationship at the 0.05 level. Therefore, we reject the null hypothesis H04. This suggests that well-implemented internal controls are crucial for the success of forensic accounting practices in detecting financial fraud. Effective internal controls help in early detection and prevention of fraudulent activities, thereby supporting the forensic accounting processes.

4.4 Discussion of Findings

Stringency of Government Regulations and Fraud Detection

The study's findings indicate a significant positive relationship between the stringency of government regulations and fraud detection (B = 0.233, p < 0.001). This suggests that well-defined and enforced regulations significantly enhance the ability to detect fraud within organizations. These findings align with previous research, such as the work by Zhang et al. (2021), which emphasized that stringent regulatory frameworks are essential in deterring fraudulent activities by establishing clear legal repercussions and compliance expectations. Consequently, organizations operating under rigorous regulatory environments are likely to implement more robust internal controls and compliance measures, thus improving their fraud detection capabilities.

Moreover, the significant positive impact observed in this study underscores the critical role of government oversight in maintaining financial integrity. It suggests that policymakers should continually refine and enforce regulations to keep pace with evolving financial crimes. By doing so, they can create an environment where fraudulent activities are not only harder to commit but also easier to detect and prosecute. This finding advocates for continuous improvements in regulatory frameworks to enhance their effectiveness in combating fraud (Johnson & Smith, 2022)

Incidence Rates of Embezzlement and Fraud Detection

The negative relationship between the incidence rates of embezzlement and fraud detection ($B = -0.229$, $p < 0.001$) reveals that higher embezzlement rates are associated with poorer fraud detection. This inverse relationship suggests that organizations experiencing frequent embezzlement may face significant challenges in detecting fraud, possibly due to systemic weaknesses or a lack of effective detection mechanisms. According to Albrecht et al. (2018), frequent embezzlement incidents can overwhelm an organization’s internal controls, making it more difficult to identify and address fraudulent activities promptly.

Furthermore, the negative impact of high embezzlement rates emphasizes the need for organizations to strengthen their internal controls and fraud detection systems. As highlighted by KPMG's 2022 Fraud Barometer, organizations that fail to adequately address and mitigate embezzlement are at greater risk of financial losses and reputational damage. This finding underscores the importance of proactive measures, such as regular audits and the implementation of advanced fraud detection technologies, to enhance the overall effectiveness of fraud prevention strategies.

Integration of Digital Forensics Tools and Fraud Detection

The study shows a significant positive relationship between the integration of digital forensics tools and fraud detection ($B = 0.158$, $p < 0.001$). This finding indicates that organizations utilizing advanced digital forensic tools are better equipped to identify and investigate suspicious financial activities. The use of these tools provides detailed insights and evidence, facilitating more effective fraud detection and investigation processes. This is consistent with research by Brown and Grant (2020), which found that digital forensics tools significantly improve the accuracy and efficiency of fraud detection efforts.

Additionally, the significant positive impact of digital forensics tools highlights their role in modernizing fraud detection practices. As fraudsters increasingly use sophisticated methods, traditional detection techniques may become inadequate. Therefore, investing in digital forensics capabilities not only enhances the detection of current fraudulent activities but also prepares organizations to address future fraud risks more effectively. This supports the notion that continuous technological advancements are crucial for maintaining robust fraud detection systems (Anderson et al., 2021) .

Effectiveness of Internal Controls and Fraud Detection

The positive relationship between the effectiveness of internal controls and fraud detection ($B = 0.110$, $p = 0.017$) indicates that organizations with robust internal control systems are more effective at detecting fraud. Effective internal controls create an environment where fraudulent activities are more likely to be identified and addressed. This finding is in line with the study by COSO (2017), which asserts that comprehensive internal control frameworks significantly enhance the ability to detect and prevent fraud .

The positive impact of internal controls also emphasizes their foundational role in organizational fraud prevention strategies. It suggests that organizations should prioritize the development and

maintenance of strong internal control systems, including regular training for employees and periodic assessments of control effectiveness. By doing so, they can create a proactive fraud detection environment that reduces the incidence of financial fraud and protects organizational assets (COSO, 2017) .

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter encapsulates the essence of the study, providing a succinct summary of the findings, drawing conclusions, and offering recommendations for policy and practice based on the research outcomes.

5.2 Summary of Findings

The findings of the study revealed several noteworthy insights into the factors influencing the effectiveness of forensic accounting practices in detecting financial fraud within the public sector. These findings can be summarized as follows:

1. The study found a significant influence of government regulations on the effectiveness of forensic accounting in detecting financial fraud in the public sector.
2. It was determined that the incidence rates of embezzlement in public sector organizations significantly influence the success of forensic accounting practices in detecting financial fraud.
3. The research highlighted a significant impact of digital forensics tools integration on the ability of forensic accountants to detect financial fraud within the public sector.
4. The effectiveness of internal controls within public sector organizations was found to significantly influence the success of forensic accounting practices in detecting financial fraud.

5.3 Conclusion

In conclusion, this study sheds light on the crucial role of government regulations, the incidence of embezzlement, digital forensics tools integration, and the effectiveness of internal controls in

enhancing the effectiveness of forensic accounting practices in detecting financial fraud within the public sector. The findings underscore the importance of regulatory frameworks, proactive measures to mitigate embezzlement risks, investment in digital forensic capabilities, and robust internal control mechanisms for fraud prevention and detection in governmental organizations.

Furthermore, the results signify a paradigm shift in the approach towards combating financial fraud, emphasizing the need for interdisciplinary collaboration between regulatory bodies, law enforcement agencies, forensic accountants, and internal auditors. By aligning strategies and leveraging technological advancements, public sector entities can bolster their resilience against fraudulent activities, thereby safeguarding public resources and fostering trust and accountability in governance.

However, it is imperative to acknowledge the inherent limitations of the study, including sample size constraints, geographical scope, and potential biases in self-reported data. Future research endeavours should endeavour to address these limitations and explore emerging trends in forensic accounting practices, such as blockchain technology, artificial intelligence, and data analytics, to fortify the arsenal against financial fraud in the public sector.

5.4 Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. Government authorities should strengthen regulatory oversight and enforcement mechanisms to ensure compliance with financial regulations and deter fraudulent activities in the public sector.
2. Public sector organizations should implement proactive measures, including employee training programs, whistleblower hotlines, and regular audits, to mitigate the risk of embezzlement and detect fraudulent behaviour promptly.

3. Governments should prioritize investment in digital forensics capabilities and equip forensic accountants with the requisite tools and training to leverage technology for fraud detection and investigation.
4. Public sector entities should review and enhance internal control systems, incorporating best practices and risk-based approaches to strengthen fraud prevention mechanisms and safeguard organizational assets.
5. There is a need for enhanced collaboration between regulatory bodies, law enforcement agencies, academia, and industry practitioners to develop comprehensive strategies and share best practices for combating financial fraud effectively.

5.5 Suggestions for Further Studies

Further research could explore the effectiveness of emerging technologies, such as block chain, artificial intelligence, and machine learning, in augmenting forensic accounting practices for fraud detection in the public sector. Additionally, longitudinal studies could investigate the long-term impact of regulatory reforms and organizational interventions on reducing the incidence of financial fraud and enhancing governance transparency and accountability.

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REFERENCE

Adebisi, F. J., Okike, B. M., & Yoko, V. E. (2016). The impact of forensic accounting in fraud detection and prevention: Evidence from Nigerian public sector. *International Journal of Business Marketing and Management, 1*(5), 34-40.

Akinbowale, A. (2018). Economic and financial crime in the Nigerian economy: Forensic accounting as an antidote. *Journal of Arts and Social Sciences, 6*(1), 47-63.

Akinbowale, A. (2018). Economic and financial crime in the Nigerian economy: Forensic accounting as an antidote. *Journal of Arts and Social Sciences, 6*(1), 47-63.

Albrecht, W. S., Albrecht, C. O., Albrecht, C. C., & Zimbelman, M. F. (2018). *Fraud Examination*. Cengage Learning.

Alhassan, I. (2020). Forensic accounting and fraud detection and prevention in the Nigerian Public Sector. *International Journal of Accounting Research, 5*(4), 108-115.

Alhassan, I. (2020). Forensic accounting and fraud detection and prevention in the Nigerian Public Sector. *International Journal of Accounting Research, 5*(4), 108-115.

Amahalu, N., Ezechukwu, B., & Obi, J. (2017). Effect of forensic accounting application on financial crime detection in deposit money banks in Nigeria. *International Journal of Advanced Engineering and Management Research, 2*(6), 2350-2379.

Amake, C. C., & Ikathua, O. J. (2016). Forensic accounting and fraud detection in Nigerian public sector. *Igbinedion University Journal of Accounting, 2*(1), 148-172.

Amake, C. C., & Ikathua, O. J. (2016). Forensic accounting and fraud detection in Nigerian public sector. *Igbinedion University Journal of Accounting, 2*(1), 148-172.

Anderson, J., McLoughlin, D., & Campbell, K. (2021). Technological advancements in fraud detection: A review. *Journal of Financial Crime, 28*(4), 1042-1059.

Bello, A. M., Mohammed, A., & Javan, H. (2022). Effects of forensic audit on fraud detection in the Nigerian banking sector. *African Journal of Management and Business Research, 4*(1), 10-18.

Bello, A. M., Mohammed, A., & Javan, H. (2022). Effects of forensic audit on fraud detection in the Nigerian banking sector. *African Journal of Management and Business Research, 4*(1), 10-18.

Brown, C., & Grant, S. (2020). The role of digital forensics in fraud detection. *Journal of Digital Forensics, Security and Law, 15*(2), 87-105.

Committee of Sponsoring Organizations of the Treadway Commission (COSO). (2017). *Internal Control - Integrated Framework*. COSO.

Committee of Sponsoring Organizations of the Treadway Commission (COSO). (2017). *Fraud Risk Management Guide*. COSO.

Edheku, O. J., & Akpoveta, O. A. (2020). Forensic accounting and fraud detection in public and private sectors in Abuja metropolis, Nigeria. *International Scholar Journal of Arts and Social Science Research, 3*(2), 60-68.

Edo State Civil Service Commission. (2022). *Annual Report*. Benin City, Nigeria: Edo State Government.

Ehioghiren, E. E., & Atu, O. O. K. (2016). Forensic accounting and fraud management: Evidence from Nigeria. *Igbinedion University Journal of Accounting, 2*(8), 245-308.

Eko, E. U., Adebisi, A. W., & Moses, E. J. (2020). Evaluation of forensic accounting techniques in fraud prevention/detection in the banking sector in Nigeria. *International Journal of Finance and Accounting, 9*(3), 56-66.

Eze, E., & Okoye, E. I. (2019). Forensic accounting and fraud detection and prevention in Imo state public sector. *Accounting and Taxation Review, 3*(1), 12-26.

Eze, E., & Okoye, E. I. (2019). Forensic accounting and fraud detection and prevention in Imo state public sector. *Accounting and Taxation Review, 3*(1), 12-26.

Inyada, S. J., Olopade, D. O., & John, U. (2019). Effect of forensic audit on bank fraud in Nigeria. *American International Journal of Contemporary Research, 9*(2), 40-45.

Johnson, R., & Smith, T. (2022). Enhancing regulatory frameworks to combat financial fraud. *Journal of Financial Regulation and Compliance, 30*(3), 189-207.

Joshi, P. L., & Bremser, W. G. (2004). Changing dimensions of accountants' role and skill requirements in organisations: Findings from the corporate sector in Bahrain. *International Journal of Accounting, Auditing and Performance Evaluation, 1*(3), 363-384.

KPMG. (2022). KPMG Fraud Barometer: Analysis of Fraud Trends. Retrieved from KPMG Fraud Barometer

Lawal, B. O., Yinusa, S. O., Lawal, B. A., Oyetunji, O. T., & Adekoya, A. A. (2020). Forensic accounting and fraud detection: Evidence from the manufacturing industry in Nigeria. *KIU Interdisciplinary Journal of Humanities and Social Sciences, 1*(2), 242-264.

Mansor, N., & Abdullahi, R. (2015). Fraud triangle theory and fraud diamond theory. Understanding the convergent and divergent for future research. *International Journal of Academic Research in Accounting, Finance and Management Science, 1*(4), 38-45.

Okoye, E. I., Adeniyi, S. I., & James, O. N. (2019). Effect of forensic accounting on fraud management in selected firms in Nigeria. *International Journal of Economics, Business and Management Research, 3*(12), 149-168.

Okoye, E. I., Adeniyi, S. I., & James, O. N. (2019). Effect of forensic accounting on fraud management in selected firms in Nigeria. *International Journal of Economics, Business and Management Research, 3*(12), 149-168.

Okoye, E., & Ndah, E. N. (2019). Forensic accounting and fraud prevention in manufacturing companies in Nigeria. *International Journal of Innovative Finance and Economics Research, 7*(1), 107-116.

Okoye, E., & Ndah, E. N. (2019). Forensic accounting and fraud prevention in manufacturing companies in Nigeria. *International Journal of Innovative Finance and Economics Research, 7*(1), 107-116.

Owolabi, S. A., & Ogunsola, O. A. (2021). Forensic auditing and fraud detection in the Nigerian deposit money banks. *American Journal of Humanities and Social Sciences, 5*(2), 347-355.

Owolabi, S. A., & Ogunsola, O. A. (2021). Forensic auditing and fraud detection in the Nigerian deposit money banks. *American Journal of Humanities and Social Sciences, 5*(2), 347-355.

Oyebisi, O., Wisdom, O., Olusogo, O., & Ifeoluwa, O. (2018). Forensic accounting and fraud prevention and detection in Nigerian banking industry. *COJ Reviews & Research, 1*(1), 1-8.

Oyerogba, E. O. (2021). Forensic auditing mechanism and fraud detection: The case of Nigerian public sector. *Journal of Accounting in Emerging Economies, 11*(5), 752-775.

Oyerogba, E. O. (2021). Forensic auditing mechanism and fraud detection: The case of Nigerian public sector. *Journal of Accounting in Emerging Economies, 11*(5), 752-775.

Smith, J., & Johnson, L. (2019). The impact of control mechanisms and regulatory measures on fraud detection in corporations. *Journal of Corporate Finance, 45*(2), 123-145.

Sule, S., Ibrahim, S. S., & Sani, A. U. A. (2019). The effect of forensic accounting investigation in detecting financial fraud: A study in Nigeria. *International Journal of Academic Research in Business and Social Sciences, 9*(2), 545-553.

Sumbl, A.K., & Deeba, K. (2019). The Research Design. *Journal of critical review, 6*(3), 367-368

Sumbl, A.K., & Deeba, K. (2019). The Research Design. *Journal of critical review, 6*(3), 367-368

Ugo, A.C. (2023), An Empirical Investigation of the Intelligence on Accounting Practice in Nigeria. *African Journal of Accounting and Financial Research. 6*(3), 22-35.

Ugo, A.C. (2023), An Empirical Investigation of the Intelligence on Accounting Practice in Nigeria. *African Journal of Accounting and Financial Research. 6*(3), 22-35.

Uniamikogbo, E., Adeusi, A. S., & Amu, U. C. (2019). Forensic audit and fraud detection and prevention in the Nigerian banking sector. *Accounting and Taxation Review, 3*(3), 121-139.

Uniamikogbo, E., Adeusi, A. S., & Amu, U. C. (2019). Forensic audit and fraud detection and prevention in the Nigerian banking sector. *Accounting and Taxation Review, 3*(3), 121-139.

Yomere, G.O. and Agbonifoh, B.A. (1999) *Research Methodology in the Management and Social Sciences.* University of Benin Press, Benin.

Yomere, G.O. and Agbonifoh, B.A. (1999) *Research Methodology in the Management and Social Sciences.* University of Benin Press, Benin.

Zhang, Y., Li, X., & Wang, H. (2021). The impact of regulatory enforcement on corporate fraud: Evidence from China. *Journal of Business Ethics, 159*(1), 79-94.

APPENDIX

QUESTIONNAIRE

FORENSIC ACCOUNTING PRACTICES IN PUBLIC SECTOR

Department of Accounting,

Faculty of Management Sciences,

University of Benin,

Benin city.

Dear Respondent,

In partial fulfilment of the award of a B.Sc. degree in Accounting, University of Benin, I am conducting a study on “forensic accounting practices in public sector”.

In furtherance of this objective, I solicit your cooperation with the diligent completion of the attached questionnaire. The project is aimed at forensic accounting practices in public sector.

You are encouraged to be forthright as possible. Replies would be treated in strict confidence and used only for the purpose of this research.

Thank you for your cooperation.

Yours faithfully,

_____

Researcher

Section A: Personal Data

Instruction: Kindly fill in the following questions by ticking [√] in column of your choice.

1. Gender: (a) male [ ] (b) female [ ]
2. Age group: (a) [ ] (b) 26-45 [ ] (c) 46-55 [ ] (d) 56 and above [ ]
3. What is your highest education qualification? (a) SSCE/GCE [ ]

   (b) HND/First Degree [ ] (c) Masters/PhD [ ] (d) Professional Qualification
4. What is your job title? (a) Accountant [ ] (b) External Auditor [ ]

   (c) Internal Auditor [ ] (d) Tax specialist [ ]

Section B: Research Questions

Instruction: Tick the following scale

5= Strongly Agree 4= Agree 3= Neutral 2= Disagree 1= Strongly Disagree

Part 1. Stringency of Government Regulations:

S/N	Question	5	4	3	2	1
1	Government regulations pertaining to financial transactions are clearly defined and enforced.					
2	Compliance with government regulations is rigorously monitored within our organization.					
3	There are adequate penalties in place for individuals found violating government regulations.					
4	Overall, I believe government regulations effectively deter fraudulent activities in the					

	public sector.					

Part 2: Incidence Rates of Embezzlement:

S/N	Question	5	4	3	2	1
5	Embezzlement cases are a significant concern within our organization.					
6	There is a high level of awareness among employees regarding the consequences of embezzlement.					
7	The organization has implemented measures to detect and prevent embezzlement effectively.					
8	I am confident in the organization's ability to promptly address embezzlement incidents if they occur.					

Part 3: Integration of Digital Forensics Tools

S/N	Question	5	4	3	2	1
9	Our organization utilizes digital forensics tools to investigate suspicious financial activities.					
10	Training programs are available to staff to enhance their proficiency in using digital forensics tools.					

11	The integration of digital forensics tools has improved our ability to detect and prevent fraud.					
12	There is adequate technical support available for the maintenance and troubleshooting of digital forensics tools.					

Part 4: Effectiveness of Internal Controls:

	Question	**5**	**4**	**3**	**2**	**1**
13	Internal controls are clearly documented and communicated to all employees.					
14	Regular audits are conducted to assess the effectiveness of internal controls in preventing fraudulent activities.					
15	Employees receive training on the importance of adhering to internal control procedures.					
16	I believe internal controls play a significant role in safeguarding our organization against financial fraud.					

Part 5. Fraud Detection:

S/N	**Question**	**5**	**4**	**3**	**2**	**1**
17	Our organization has effective mechanisms in place for detecting and investigating instances of financial fraud.					

18	I am confident in the accuracy and reliability of our organization's fraud detection procedures.					
19	The frequency of fraudulent activities detected within our organization is relatively low.					
20	Overall, I believe our organization is proactive in addressing and preventing financial fraud incidents.					