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EXAMINING THE EFFECTIVENESS OF FORENSIC ACCOUNTING TOOLS ON FRAUD DETECTION AND PREVENTION IN BANKING SECTOR. A SURVEY OF BANKS IN BINDURA

BY

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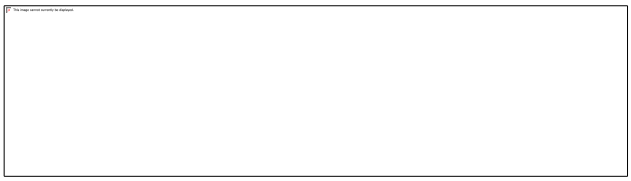
I certify that this dissertation meets the preparation guidelines as presented in the Faculty guideline and instructions for typing dissertations. 

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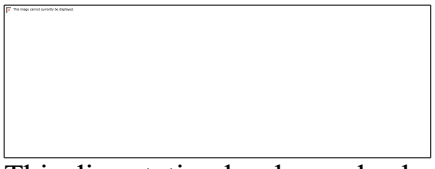

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Declaration

I, Darlington Shoko do hereby declare that this thesis has been the result of my own original efforts and investigations and such work has not been presented elsewhere for the purpose of degree assessment. All additional sources of information have been acknowledged by means of references.

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Dedication

This research is dedicated to my family.

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I would like to express my sincere gratitude to Almighty God for granting me the strength, wisdom, and perseverance to complete this study. My heartfelt appreciation goes to my supervisor for the valuable guidance, constructive criticism, and unwavering support provided throughout the research process. I am also grateful to the management and employees of the banks in Bindura who participated in this study and willingly shared their experiences and insights. Special thanks are extended to the lecturers in the Faculty of Commerce at Bindura University of Science Education for their academic support and encouragement. I am deeply indebted to my family and friends for their patience, motivation, and moral support during the course of my studies. Their contributions made the successful completion of this research possible.

Abstract

This study sought to examine the effectiveness of forensic accounting tools on fraud detection and prevention in the banking sector, with particular reference to banks operating in Bindura Town, Zimbabwe. The purpose of the study was to evaluate the extent to which forensic accounting tools contribute to fraud detection and prevention within banks. The study was motivated by the increasing prevalence of fraud cases in Zimbabwe's banking sector, which continue to threaten financial stability, customer confidence, and institutional performance. The study was guided by four objectives: to determine the forensic accounting techniques used in Bindura Town banks; to evaluate the effectiveness of such forensic accounting techniques in detecting fraud; to analyse the difficulties encountered in implementing forensic accounting in Bindura banks to combat fraud; and to suggest strategies to improve the effectiveness of forensic accounting in fraud detection and prevention. The study was delimited to commercial and retail banks operating in Bindura Town during the period January 2023 to December 2025. The Fraud Triangle Theory and Agency Theory informed the study. An explanatory sequential mixed methods approach was adopted. Data were collected from 45 respondents comprising compliance officers, internal auditors, branch managers, and other banking personnel through structured questionnaires, semi-structured interviews, and document review. Purposive sampling was used, while quantitative data were analysed using descriptive statistics and qualitative data through content analysis. The findings revealed that forensic audit investigations and digital transaction tracking were the most widely used and most effective forensic accounting tools. However, limited financial resources, inadequate technology, and a shortage of skilled personnel constrained implementation. The study concluded that forensic accounting significantly enhances fraud detection, although its preventive capacity remains underutilised. The study recommends increased investment in advanced forensic technologies, continuous staff training, and stronger regulatory support. Future studies should examine the effectiveness of artificial intelligence-driven forensic accounting tools in Zimbabwean banks.

Key terms: *forensic accounting, fraud detection, fraud prevention, banking sector, forensic accounting tools.*

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List of Acronyms

Acronym	Meaning
ACFE	Association of Certified Fraud Examiners
AI	Artificial Intelligence
CAATs	Computer-Assisted Audit Techniques

ICAZ	Institute of Chartered Accountants of Zimbabwe
RBZ	Reserve Bank of Zimbabwe
SPSS	Statistical Package for the Social Sciences
BUSE	Bindura University of Science Education
GDP	Gross Domestic Product
ICT	Information and Communication Technology
ZWL	Zimbabwean Dollar

CHAPTER I

INTRODUCTION

1.0 Introduction

The banking sector globally continues to face mounting pressure from the proliferation of fraudulent activities, which collectively drain trillions of dollars from economies annually, undermining financial stability and eroding public confidence in financial institutions. This study investigates the effectiveness of forensic accounting tools in detecting and preventing fraud within banks operating in Bindura, Zimbabwe. Despite the growing adoption of forensic accounting as a strategic response to financial crime, significant gaps remain in understanding how these tools perform within developing economy contexts, particularly in smaller urban banking markets such as Bindura. The study examines the specific forensic accounting techniques employed, evaluates their operational effectiveness, identifies implementation challenges, and proposes strategies for improvement. By doing so, the study contributes both practical insights for banking practitioners and theoretical advancements in forensic accounting scholarship within the Sub-Saharan African context.

1.1 Background to the study

Fraud in the global banking sector has escalated into a crisis of significant economic consequence, threatening the integrity of financial systems across both developed and developing nations. The Association of Certified Fraud Examiners (2022) estimates that organisations worldwide lose approximately 5% of their annual revenues to fraud, with the global cost of fraud reaching $4.7 trillion annually. The banking and financial services sector consistently ranks among the industries most severely affected by fraudulent activities. These losses are not merely financial; they erode customer trust, destabilise institutions, and compromise the broader economic environment within which banks operate. The increasing sophistication of fraudulent schemes, facilitated by advances in digital technology and the globalisation of financial markets, has made traditional detection mechanisms increasingly inadequate, necessitating more robust and specialised interventions such as forensic accounting.

In the African context, fraud within the banking sector presents unique and compounding challenges rooted in structural, regulatory, and technological vulnerabilities. The African

Development Bank (2021) has documented a consistent rise in financial crimes across Sub-Saharan Africa, attributing this trend to weak institutional frameworks, insufficient regulatory enforcement, and limited investment in compliance infrastructure. Countries such as Nigeria, Kenya, and South Africa have reported significant banking fraud incidents that have resulted in substantial financial losses and institutional collapses. The African Banking Corporation (2020) reported a 25% increase in fraudulent activities during 2020 alone, amounting to losses exceeding $1.1 billion across the continent. These figures underscore the urgent need for effective fraud management strategies tailored to the specific institutional and environmental realities of African banking systems, including the deployment of forensic accounting tools and techniques.

In the Southern African region, the threat of banking fraud has emerged with a high level of severity. Several factors such as economic instability, currency fluctuation, and differing regulatory capabilities of the Southern African Development Community (SADC) member countries have contributed to the development of this problem. For example, the Southern African Fraud Prevention Service (2021) cited significant rises in banking-related frauds in the region, naming Zambia, Mozambique, and Zimbabwe as the major countries that have witnessed large increases in identity fraud, cybercrime, and financial crimes committed with the help of the insiders. Ncube and Moyo (2020) found that banks in Southern Africa mostly work in a fragmented supervisory environment where inconsistencies in the regulations across the borders create gaps that the fraudsters with increasing levels of sophistication exploit. Furthermore, the Financial Intelligence Centre of South Africa (2022) pointed out that illicit financial flows within the Southern African region were more than $50 billion every year, with a very large part of the amount coming from the frauds done through or against the banking sector. These exposures at the systemic level have led the regional organizations such as the SADC Banking Supervision Sub-Committee to recommend that countries should have uniform anti-fraud laws and that forensic accounting techniques should be made the main elements of the prudential oversight. However, the states' legislations have still not been in line with each other at the time of the writing of this piece (Dube and Sithole, 2021).

Zimbabwe's banking sector has not been immune to the pervasive threat of financial fraud, with the country experiencing a marked deterioration in financial integrity over the past decade. The Reserve Bank of Zimbabwe (2020) documented 1,456 reported fraud cases within the

Zimbabwean banking industry in 2020, resulting in financial losses estimated at ZWL$1.2 billion, a figure equivalent to approximately 10% of the nation's gross domestic product. These alarming statistics reflect deeply entrenched systemic weaknesses within Zimbabwe's banking environment, including inadequate internal control systems, understaffed compliance departments, and a regulatory framework that has struggled to keep pace with evolving fraud typologies. The Bankers Association of Zimbabwe (2022) further reported that 75% of Zimbabwean banks experienced at least one instance of fraud within the surveyed year, highlighting the pervasive nature of the problem across the sector.

The banking environment in Bindura, a mid-sized town in Mashonaland Central Province, mirrors the broader challenges confronting Zimbabwe's financial sector, albeit within a localised and resource-constrained setting. Banks operating in Bindura face specific vulnerabilities arising from limited technological infrastructure, constrained human capital in specialised areas such as forensic accounting and internal audit, and a relatively weak regulatory oversight presence compared to larger urban centres such as Harare (Muponde, 2018). Mavhiki and Kahiya (2018) noted that smaller banking markets in Zimbabwe are disproportionately exposed to internal fraud perpetrated by employees who exploit weak oversight mechanisms. These conditions create fertile ground for fraudulent activities to proliferate unchecked, making the adoption of effective forensic accounting practices not merely beneficial but operationally essential for the sustainability of banking institutions in the region.

Forensic accounting has emerged globally as a critical discipline in the fight against financial fraud, combining investigative expertise with accounting knowledge to detect, prevent, and litigate fraudulent conduct. According to Albrecht et al. (2018), forensic accounting encompasses a wide range of tools including data analytics, digital forensics, Benford's Law analysis, and continuous auditing, all of which enhance an organisation's capacity to identify anomalies indicative of fraudulent behaviour. The Association of Certified Fraud Examiners (2020) found that organisations employing forensic accounting techniques reduced fraud-related losses by up to 40% compared to those relying solely on conventional auditing approaches. Despite this demonstrable effectiveness, the adoption of forensic accounting within Zimbabwean banks, particularly those in smaller markets like Bindura, remains inconsistent and insufficiently studied, creating a critical knowledge gap that this research seeks to address.

1.2 Statement of the problem

There has been a tremendous increase in the levels of fraud in the Bindura region in Zimbabwe, which has created a huge risk for the financial safety of customers' funds and personal data (Mavhiki & Kahiya, 2018; Mudzonga & Chigumira, 2020) The Reserve Bank of Zimbabwe (2020) notes that there have been about 1,456 instances of fraud cases reported in the Zimbabwean banking industry in 2020, leading to financial losses amounting to ZWL$1.2 billion, representing about 10% of the nation's GDP (Reserve Bank of Zimbabwe, 2020). In addition, International Association of Anti-Corruption Authorities (2020) reports that corruption and fraud are some of the main issues affecting the banking sector in Zimbabwe. This poses the need for proper fraud detection and prevention strategies among banks in Bindura, and forensic accounting techniques can be useful in this case (Albrecht et al., 2018). The Institute of Internal Auditors (2019) further supports the importance of using forensic accounting techniques in managing fraud risks. Accordingly, this study sought to explore the effectiveness of forensic accounting techniques in fraud detection and prevention within the Bindura banking sector.

1.3 Purpose of the Study

Purpose of this study is to analyze/evaluate effectiveness of forensic accounting practices to prevent and detect fraud in retail bank sector in Bindura.

1.4 Research Objectives

Following objectives guide the research:

1. To identify the forensic accounting tools and techniques used by banks in Bindura Town.
2. To evaluate the effectiveness of such forensic accounting tools and techniques to detect fraud in in banks domiciled in Bindura town.
3. To explore the challenges encountered by banks in implementation of forensic accounting in Bindura town
4. To suggest strategies to improve the effectiveness of forensic accounting in detection and prevention of fraud in Bindura banking sector.

1.5 Research Questions

Following research questions are asked:

1. What forensic accounting tools and techniques are employed by banks operating in Bindura Town?
2. How effective are the forensic accounting tools and techniques utilised by banks in Bindura Town in detecting fraud?
3. What challenges do banks in Bindura Town encounter in the implementation of forensic accounting?
4. What strategies can be adopted to improve the effectiveness of forensic accounting in the detection and prevention of fraud within the Bindura banking sector?

1.6 Importance of the Study

The results obtained from the current study regarding the influence of forensic accounting tools in detecting and preventing fraud in the banking industry of Bindura are important for practical application and further development of theory in forensic accounting. The following are some of the beneficiaries of the results:

1.6.1 Banks

The findings of the study will be of considerable value to banks operating within Bindura and the broader Zimbabwean banking sector, particularly in strengthening their capacity to manage and mitigate fraud-related risks. By identifying the specific forensic accounting tools and techniques that demonstrate measurable effectiveness in fraud detection and prevention, the study equips bank management with evidence-based insights that can inform the redesign and reinforcement of internal control systems. Banks will be better positioned to allocate resources strategically toward forensic accounting functions, ensuring that compliance departments, internal audit units, and risk management teams are adequately equipped to respond to evolving fraud typologies. Furthermore, the study's identification of implementation challenges provides bank executives and boards of directors with a clearer understanding of the operational and structural barriers that undermine forensic accounting effectiveness, thereby enabling the formulation of targeted remediation strategies. The findings will also assist banks in benchmarking their current fraud management

practices against identified best practices, facilitating continuous improvement in governance frameworks and ultimately reducing financial losses attributable to fraudulent activities.

1.6.2 Policy Makers and Regulatory Bodies

The findings of the study will provide policy makers and regulatory bodies, including the Reserve Bank of Zimbabwe and the Bankers Association of Zimbabwe, with empirically grounded insights that can inform the development of more robust and responsive anti-fraud regulatory frameworks. Current regulatory provisions governing fraud detection and prevention within Zimbabwe's banking sector have been criticised for failing to keep pace with the increasing sophistication of financial crimes, and this study's findings will highlight specific areas where policy intervention is most urgently required. By documenting the extent to which forensic accounting tools are being adopted and the degree to which their implementation is constrained by regulatory gaps, the study offers regulators a practical basis upon which to revise existing compliance requirements and introduce mandatory forensic accounting standards for licensed banking institutions. Additionally, the study's recommendations regarding strategies for improving forensic accounting effectiveness may inform the development of national anti-fraud policies that align with regional frameworks advocated by the Southern African Development Community, thereby contributing to broader financial sector stability.

1.6.3 Other Stakeholders within the Industry

Beyond banks and regulatory authorities, the findings of the study will be of significant relevance to a wider range of stakeholders operating within and around the banking industry, including external auditors, forensic accounting practitioners, financial technology firms, shareholders, and depositors. External auditors and forensic accounting professionals will benefit from the study's detailed examination of which tools and techniques yield the greatest fraud detection outcomes within a developing economy context, enabling them to refine their audit methodologies and service offerings accordingly. Financial technology companies developing fraud detection software and analytical platforms will gain insight into the specific operational needs and challenges of Zimbabwean banking institutions, which may guide product development and customisation efforts. Shareholders and institutional investors will find value in understanding

how forensic accounting mechanisms protect the financial integrity of their investments, while depositors and the general public will benefit indirectly from the improved institutional confidence and reduced systemic risk that effective fraud prevention generates within the banking sector.

1.6.4 Theory Development

In addition to its practical contributions, the study makes a meaningful contribution to the theoretical literature on forensic accounting and fraud management within developing economy contexts. Existing theoretical frameworks, including the Fraud Triangle Theory advanced by Cressey (1953) and the Agency Theory proposed by Jensen and Meckling (1976), provide foundational explanations for fraudulent behaviour and the principal-agent conflicts that facilitate it; however, their applicability within the specific institutional and economic conditions of Sub-Saharan African banking environments remains insufficiently examined. This study tests and interrogates these frameworks within the Zimbabwean context, thereby generating new insights regarding their explanatory limitations and potential extensions. The findings may contribute to the emergence of context-sensitive theoretical perspectives that account for the structural vulnerabilities, regulatory deficiencies, and resource constraints unique to developing economy banking systems. Such theoretical advancements will enrich the broader forensic accounting scholarship and provide future researchers with refined conceptual tools for investigating fraud management in similar contexts across the African continent.

1.9 Assumptions of the Study

The assumptions of this study are stated as follows:

- Fraud is becoming rampant among Zimbabwean banks.
- Forensic accounting may prevent and detect fraud.
- Zimbabwean banks have used forensic accounting techniques to prevent and detect fraud.
- The data collected from the respondents is reliable.
- The respondents sampled represent the population.
- The results obtained are generalizable.

1.7 Limitations of the Study

1.7.1 Time Constraints

Time constraints are experienced because of the tight school schedules that the researcher has while studying at Bindura University of Science Education. It is important to note that there is simultaneous need to conduct both research activities and undertake studies which would make the time for conducting research activities very limited. The researcher will try to allocate enough time by developing a proper plan. Priorities in research activities will also help in overcoming time constraint.

1.7.2 Participant Response

Participant response might pose a challenge in terms of respondents' unwillingness to participate in the research process. The respondents might be unwilling to participate because they fear disclosing personal information or lack trust in the researcher. To overcome this problem, the researcher will assure confidentiality of data to participants. Trust building through provision of information on the academic nature of the study will also encourage participants to respond positively.

1.7.3 Funding Challenges

The study was potentially constrained by limited financial resources, which posed a threat to the comprehensiveness of the research process. Costs associated with transportation, printing of questionnaires, and accessing specialised forensic accounting literature and peer-reviewed journals presented considerable budgetary demands for the researcher. There was a possibility that insufficient funding would restrict the scope of data collection and limit access to essential research tools and software required for data analysis. To mitigate this limitation, the researcher prioritised cost-effective data collection methods, utilised open-access academic databases, and consolidated fieldwork visits to minimise expenditure, ensuring that funding constraints did not fundamentally compromise the validity and reliability of the findings.

1.8 Delimitations

Geographically, the study shall be limited to Bindura Town in Zimbabwe and shall focus exclusively on the banking industry including commercial and retail banks. Other organizations operating in the financial services industry that shall not form part of this study include but are not limited to microfinance organizations and mobile money service providers. This research will seek to explore forensic accounting techniques employed in order to detect fraud and reduce fraud risks. Some of the possible influencer factors in the study may include legislation, industry standards, culture, and technological resources among others. This research shall be anchored on the theory of the Fraud Triangle by Cressey (1953) as well as Institutional Theory by Scott (2005).

With regard to methodology, the study will adopt a mixed methods approach where the data collection will involve the use of structured questionnaires and semi-structured interviews with bank employees, auditors, and compliance officers. Data sources will comprise secondary data including institutional policies and reports. Given the time limitation involved, this research does not have a longitudinal component or financial forensic analysis of any particular fraud cases. The temporal delimitation will be limited to the period January 2023 to December 2025; a time period that is appropriate for understanding trends related to fraud and forensic accounting given the ongoing banking reforms in Zimbabwe after the pandemic period.

1.9 Definition of Terms

Forensic Accounting:

According to Albrecht et al. (2018), forensic accounting is the specialised field of accounting that integrates investigative skills, auditing expertise, and legal knowledge to examine financial records for the purpose of detecting and preventing fraudulent activities. Crumbley et al. (2017) further define forensic accounting as the application of accounting principles and investigative procedures in a manner suitable for legal scrutiny and court proceedings. For the purposes of this study, forensic accounting shall herein be taken to mean the use of specialised accounting and investigative techniques by banking institutions to detect, prevent, and respond to fraud.

Forensic Accounting Tools:

The Association of Certified Fraud Examiners (2020) defines forensic accounting tools as the specific techniques and technological instruments employed to identify anomalies and fraudulent patterns within financial data. Singleton and Singleton (2010) further describe forensic accounting tools as encompassing data analytics, digital forensics, Benford's Law analysis, and Computer-Assisted Audit Techniques. In this study, forensic accounting tools shall hereafter refer to the methodologies and technologies utilised by banks in Bindura to detect and prevent fraudulent transactions.

Fraud:

According to Cressey (1953), fraud is an intentional act of deception or misrepresentation of financial information undertaken by an individual for the purpose of obtaining an unlawful financial gain. The Association of Certified Fraud Examiners (2022) further defines fraud as the wrongful or criminal deception intended to result in financial or personal gain at the expense of another party. For the purposes of this study, fraud shall herein be taken to mean any deliberate and dishonest act perpetrated by individuals within or against banking institutions in Bindura resulting in financial loss.

Fraud Detection:

According to the Institute of Internal Auditors (2019), fraud detection refers to the systematic process of identifying and uncovering fraudulent transactions through the application of investigative procedures and analytical tools. Albrecht et al. (2018) further describe fraud detection as the application of monitoring mechanisms and forensic techniques designed to reveal irregularities concealed within financial records. In this study, fraud detection shall hereafter refer to the capacity of forensic accounting tools employed by Bindura banks to identify fraudulent activities after they have occurred.

Fraud Prevention:

Wells (2017) defines fraud prevention as the proactive implementation of internal controls, policies, and organisational procedures designed to deter conditions conducive to fraudulent behaviour. Singleton and Singleton (2010) further describe fraud prevention as encompassing all

measures taken by an organisation to eliminate opportunities for fraud before financial losses are incurred. For the purposes of this study, fraud prevention shall herein be taken to mean the capacity of forensic accounting tools and related control mechanisms to discourage and eliminate fraudulent conduct within Bindura banking institutions.

Banking Sector:

According to the Reserve Bank of Zimbabwe (2020), the banking sector refers to the segment of the financial services industry comprising licensed commercial and retail banking institutions that accept deposits, extend credit, and provide financial services under regulatory oversight. Rose and Hudgins (2013) further define the banking sector as the collection of financial intermediaries that mobilise savings and channel funds to productive economic activities within a regulated framework. In this study, the banking sector shall hereafter refer exclusively to the licensed commercial and retail banks operating in Bindura Town during the period January 2023 to December 2025.

Internal Controls:

The Institute of Internal Auditors (2019) defines internal controls as the policies and procedures established by management to safeguard assets, ensure the accuracy of financial reporting, and deter fraudulent conduct within an institution. Albrecht et al. (2018) further describe internal controls as the organisational mechanisms through which management monitors compliance with established standards and detects deviations indicative of fraudulent behaviour. For the purposes of this study, internal controls shall herein be taken to mean the systems and procedures implemented by Bindura banks to prevent and detect fraud.

Data Analytics:

According to the Association of Certified Fraud Examiners (2022), data analytics refers to the systematic computational examination of large volumes of financial data to identify patterns and anomalies indicative of fraudulent transactions. Coderre (2009) further defines data analytics in

the forensic context as the application of statistical and computational techniques to financial datasets for the purpose of revealing irregularities that may not be detectable through conventional auditing. In this study, data analytics shall hereafter refer to the use of analytical software and statistical methods by Bindura banks to examine transactional data for fraud indicators.

1.10 Organization of the study

CHAPTER	DESCRIPTION
Chapter I	Provides the introduction to the research study, setting the stage for the investigation. What does it consist of? The major
Chapter II	Presents a comprehensive literature review, analyzing existing research and scholarly works related to the study's topic.
Chapter III	Focuses on the research methodology, outlining the approach adopted for the study.
Chapter IV	Presents the research findings in a structured and comprehensive manner, providing detailed insights into the research outcomes.
Chapter V	Concludes the study with a thorough exploration of the research outcomes, followed by recommendations.

1.11 Chapter summary

The first chapter introduced the study's background, significance, objectives, research questions and purpose, as well as its limitations and delimitations. The subsequent chapter focuses on review of relevant literature on forensic accounting and its role in fraud detection and prevention.

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

The chapter starts with a review of past research regarding the use of forensic accounting for detecting and preventing fraud in the banking industry. It gives definitions of terms used throughout the research including fraud, forensic accounting, and fraud prevention as well as related theories which include the Fraud Triangle and Agency theory. The chapter looks at the literature regarding international, regional, and local empirical studies with an emphasis on research gaps in the Bindura banking industry. It aims at providing background knowledge and justification for the relevance of the present research.

2.1 Conceptual Framework

2.1.1 The concept of Fraud

According to scholars such as Albrecht et al. (2008), fraud is a premeditated act aimed at gaining financial benefits through deception and manipulation which has far-reaching effects on the individual involved, organization or country. Wells (2014) defines fraud as distortion of the truth for one's personal advantage whereas Kranacher et al. (2011) emphasize the ease of perpetrating fraud in the financial institutions because of complicated nature of business and vulnerability of financial information to manipulation in the digital world. This was evident when fraud occurred at Standard Bank South Africa in 2016.

Banking fraud is characterized by identity theft, embezzlement, fraudulent statements, and electronic funds transfer fraud. According to Button, Johnston, and Frimpong (2007), these

problems result from the lack of strong internal controls. Singleton and Singleton (2010) observe that such fraud often comes from lower and mid-management staff who find ways to exploit the lack of supervision in institutions. Additionally, Bhasin (2016) points out that even though technological innovations lead to improved service delivery in banking, they also increase exposure to new types of fraud, as evidenced by the electronic transactions fraud that affected many banks in Zimbabwe in 2019, including the ZB Bank.

Consequences of banking fraud do not only extend to financial losses but also affect the reputation of organizations and reduce stakeholder confidence. For instance, Nwaze (2012) argues that fraud leads to financial insecurity and the destruction of public trust in the system. Similarly, Brazel and Branson (2017) claim that fraud cases affect financial reports and make institutions prone to penalties. The Reserve Bank of Zimbabwe (2020) reported an increase in fraud cases in the country. The concept that can explain banking fraud in Zimbabwe is Cressey's (1953) Fraud Triangle Theory, which indicates that when there is pressure. According to Muponde (2018), poor regulation and insufficient resources also contribute to the problem, whereas Mugariri (2018) observes the prevalence of fraud in the banks of Bindura Town. This demonstrates the critical necessity of having effective anti-fraud measures, including the implementation of forensic accounting practices, to ensure the viability of the banking industry.

2.1.2 Forensic Accounting

Forensic accounting is a blend of accounting, auditing, and legal knowledge used to investigate financial wrongdoing and help in litigation. Bologna (2017) sees forensic accounting as using accounting skills to carry out financial investigations for legal matters, while Crumbley et al. (2015) stress its usefulness in identifying fraud and aiding courts with expert evidence. Major corporate scandals like Enron and WorldCom have largely contributed to the rise of the field by showing how traditional auditing methods can fail in uncovering hard-to-detect fraudulent activities. In fact, forensic accounting can include various methods such as analyzing financial statements, digital forensics, CAATs, and data mining to locate strange patterns and irregular transactions (Singleton and Singleton, 2010; Bhasin, 2016). Fraudulent banking activities are also effectively detected through forensic data analysis as Kranacher et al. (2011) show, and the discovery of cyber-fraud at Barclays Zimbabwe in 2014 is a good example.

At a deeper level, forensic accounting not only finds fraud but also helps develop fraud risk management systems and build organisational cultures that value transparency and ethical accountability (Albrecht et al., 2008; Button et al., 2007). Brazel and Branson (2017) find that fraud cases are considerably reduced in financial institutions that have forensic accounting departments as opposed to those lacking the capacity. In Zimbabwe, banks are still insufficient in forensic accounting skills and technology resources, thus exposing them more to fraud and corruption (Muponde, 2018). To this end, the Reserve Bank of Zimbabwe (2020) has recommended that all licensed banking institutions practise forensic accounting more widely. Khan and Kopp (2020) support this idea and say that forensic accounting is essential especially in economies that are developing where auditing systems alone have not been able to deal with the complexity of modern financial crimes, a situation that is true of banks in Bindura.

2.1.3 Forensic Accounting Tools

Forensic accounting is a field of investigation which combines accounting, auditing, and legal expertise in detecting and preventing financial frauds. It involves the use of accounting, auditing, and investigative skills to examine financial discrepancies that could lead to legal and ethical issues. For instance, according to Crumbley et al. (2015), forensic accounting is used in situations involving financial discrepancies where there is a potential legal issue, especially in organizations that are susceptible to manipulation, like banks. It should be noted that forensic accounting is important in the detection of financial crimes such as money laundering, embezzlement, and cyber-fraud as per Dhar and Sarkar (2010). According to Wells (2014), fraud is a situation where there is deceitful conduct meant for wrongful gains through actions like identity theft, asset misappropriation, or statements. In Zimbabwe, fraud is common, especially since the introduction of electronic banking in the country.

There are several techniques used in forensic accounting to curb fraud in the banking sector. For instance, data analytics plays an important role through the application of statistical and mathematical models to scrutinize datasets in search of any suspicious activities. Wang and Wang (2010) note that the use of data analytics could reveal the existence of fraud that might not be uncovered using manual techniques. In Zimbabwe, data analysis is slowly being adopted by various banks, including Stanbic and CBZ, to investigate suspicious transactions (Mudzonga &

Chigumira, 2020). The other notable approach is the application of Benford's law. It entails the examination of the frequency of digits in a dataset to unearth any irregularities.

Computer-Aided Audit Techniques (CAATs) are equally important, as they allow automatic assessment of transaction logs in the whole database. According to Singleton and Singleton (2010), CAATs improve efficiency through removal of the need to sample. Bindura banks are also considering such techniques; however, limited resources restrict their application (Mavhiki & Kahiya, 2018). The use of Artificial Intelligence (AI) and machine learning algorithms has been increasing over the years, and there are many studies about the ability of these systems to predict possible fraud cases. As Bhasin (2016) indicates, AI has the ability to learn fraud patterns; however, its application in the context of fraud detection in Zimbabwe is still emerging because of the lack of skills in the country (Nhamo & Mhlanga, 2019). Yet another important tool is digital forensics, which deals with the collection and analysis of electronic evidence. As Casey (2011) suggests, digital forensics is crucial for detecting any illegal activity regarding unauthorized access to computerized financial systems.

2.1.4 Effectiveness of Forensic Accounting Practices in Banking Operations

The effectiveness of forensic accounting methods is judged on their capability to detect fraud at an early stage and prevent its recurrence in the future. An example of such a method is the examination of audit trails that chronologically account for all transactions and actions taken by users. As pointed out by Rezaee and Riley (2010), audit trails offer transparency and enable tracking of any fraud committed. In Zimbabwe, inadequate audit trails have made it difficult to detect fraud cases, particularly in the banking system's decentralized units (Mugariri, 2018). Another technique entails the adoption of transaction monitoring in real time through the use of algorithms to identify and highlight any suspicious actions. Ramos (2006) argues that transaction monitoring in real time is crucial in contemporary banking systems to avoid accumulation of losses. Indeed, Zimbabwe's Steward Bank has been successful in reducing fraud incidents with this strategy (Muponde, 2018).

Furthermore, red flag indicators and predictive analytics have become important in preventing fraud. This method involves setting up parameters for suspicious transactions and predicting

potential fraud incidents using machine learning techniques in the future. Bhasin (2016) suggests that this preventive measure can reduce fraud both internally and externally. Nevertheless, most of these banks do not have the adequate capabilities and technology infrastructure to use these tools effectively (Mudzonga & Chigumira, 2020). This means that there is an inequality in the deployment of these forensic tools, between the large banks in urban centers and the small regional banks.

Notwithstanding the numerous advantages of forensic accounting, a number of factors hamper its implementation in Bindura's banking sector. First of all, the scarcity of expertise is an obstacle to the use of forensic accounting. According to Mavhiki & Kahiya (2018), a majority of auditors at banks in Zimbabwe are inadequately equipped in forensic accounting skills to spot fraudulent activities. Second, there is the exorbitant cost of using these forensic techniques and tools such as computerized audit tools and AI programs. According to Bhasin (2016), the financial implications usually limit financial institutions in poor nations from utilizing modern technologies. In addition, the reluctance of banks towards change is another challenge to implementing forensic accounting procedures. Rezaee (2002) points out that most institutions view these forensic tools as intrusive, especially when the organization culture does not support transparency. In Bindura, some bank workers are opposed to the concept of forensic audits (Nhamo, 2019).

2.1.5 Challenges in the Implementation of Forensic Accounting in Banking

Besides the many benefits of forensic accounting, several factors prevent its full implementation in the banking industry with the main focus of these factors being in the developing economies like Zimbabwe. For example, the lack of availability of qualified forensic accountants is one of the major issues impeding the successful implementation of forensic accounting activities. According to Mavhiki and Kahiya (2018), most of the bank auditors in Zimbabwe are lacking the forensic accounting skills required to detect and investigate fraud schemes. This is worsened by the lack of specialist forensic accounting training courses especially in smaller urban centres like Bindura where accessibility to professional development opportunities is limited.

Mudzonga and Chigumira (2020) say that the absence of forensic accounting programme courses in the regional professional bodies is negatively affecting the talent pool which further limits the long-term viability of forensic accounting in the sector.

On top of all, the high costs of forensic accounting equipment and software are a big obstacle that these banks in developing countries have to face when trying to decide whether or not to adopt such forensic technologies. For instance, Bhasin (2016) explains that the financial burden of purchasing and managing computerised auditing instruments, fraud detection programs integrated with artificial intelligence, and digital forensic platforms dramatically restrict banks in developing countries from embracing modern forensic technologies. Small banks especially those borrowers of regional money market operations in resource-constrained environments like those in Bindura have largely faced these barriers and have as a result remained with conventional audit methods that cannot detect modern fraud. Singleton and Singleton (2010) add that the huge capital investment required for establishing and maintaining a forensic accounting infrastructure makes it difficult for smaller banks to keep up with larger banks that can afford such expenditure.

Fear of change or unwillingness to change is yet another problem preventing the successful implementation of forensic accounting in banks. According to Rezaee (2002), many companies consider forensic accounting to be very intrusive, especially in cases where the company culture at the time does not actively endorse transparency and accountability. Such resistance usually comes from employees, for example, who may not be keen on subjecting their work activities to increased scrutiny or senior management who may not be willing to invest in forensic accounting activities that will expose the wrongdoing that has gone undetected for a long time within their organisation. Among other places, in Bindura, Nhamo (2019) has identified cases where some banking staff have even gone to the extent of resisting the forensic audit process which not only challenges its operational effectiveness but also limits the ability of forensic accounting tools to yield dependable and comprehensive fraud detection results.

The inadequacies of the law (in terms of lack of enforcement) and generally weak crime control instruments can be seen as first and foremost among the challenges that are consistent with the very limited application of forensic accounting practices in Zimbabwean banking. According to the Reserve Bank of Zimbabwe (2020), the current regulatory measures have to a large extent

failed to keep up with the ever-growing financial crimes making the decision of whether or not to use forensic accounting tools left to the individual banks. This regulatory gap means that the practice is left to the discretion of operators and therefore it is only in the big well-funded banks that we see a relatively high level of adoption while the smaller and more remote banks continue to play catch-up. Muponde (2018), on the other hand, makes the case that without a requirement for banks to comply with forensic accounting practices within the regulatory banking framework of Zimbabwe, there is an ongoing problem that keeps the banks susceptible to fraud which is even more the case for those in such markets as Bindura where the level of supervisory oversight is low.

2.1.6 Strategies to Strengthen Forensic Accounting in Fraud Prevention

There are several key areas that must be addressed to enhance the effectiveness of forensic accounting in fighting bank frauds. Firstly, there is need for capacity enhancement. According to Singleton & Singleton (2010), the most effective way to detect fraud lies in having properly trained individuals who know how to identify it. The Zimbabwe Institute of Chartered Accountants have adopted forensic accounting in their modules; however, adoption rates are still very low in regional towns such as Bindura. Another key aspect that needs addressing is policy and regulation. The Reserve Bank of Zimbabwe (2021) has established new rules concerning internal controls, and there is a need for mandatory compliance audits so that all banks adopt these technologies.

Collaboration is another key factor that will help to increase efficiency of forensic tools. As per Bhasin (2016), there is need to establish collaborative relationships in which banks can share information. In Zimbabwe, platforms such as Bankers Association could be used to monitor fraud nation-wide, especially within towns lacking adequate technology. Lastly, investment in technological infrastructure will allow banks to harness power of computer-aided auditing techniques and artificial intelligence. Such investments can be funded by both private and government donors. These measures will not only help to strengthen internal controls but will also enhance customers' trust in the banking industry in Zimbabwe.

2.2 Theoretical Framework

In the case of this research paper, which seeks to examine how effective forensic accounting methods are in detecting and preventing fraud in the banking sector, two theoretical approaches have been chosen: The Fraud Triangle Theory and Agency Theory.

2.2.1 The Fraud Triangle Theory

The Fraud Triangle Theory, developed by Cressey (1953), proposes that fraud occurs when three conditions converge simultaneously, namely pressure, opportunity, and rationalisation. Pressure refers to financial or personal motivations that compel an individual toward fraudulent conduct, opportunity arises from weak internal controls and insufficient monitoring, while rationalisation involves the cognitive justification an individual constructs to legitimise dishonest behaviour. The theory has been widely validated in the forensic accounting literature, with Albrecht et al. (2008) and Wells (2014) affirming its explanatory relevance across diverse organisational and economic contexts. In Zimbabwe, economic hardship, unemployment, and governance deficiencies have created an environment in which all three fraud triangle conditions operate simultaneously, rendering banking institutions particularly vulnerable to financially motivated misconduct (Muponde, 2018; Ntim and Soobaroyen, 2019).

In this study, the Fraud Triangle Theory was applied as a diagnostic lens through which the fraud vulnerabilities of banks operating in Bindura were examined and understood. Specifically, the theory guided the identification of the conditions under which fraud proliferates within Bindura's banking environment, informing the selection of forensic accounting tools evaluated for their capacity to address each element of the triangle. Singleton and Singleton (2010) assert that forensic accounting directly limits the opportunity element through strengthened internal controls and enhanced detection procedures, while Bhasin (2016) argues that forensic accountants can proactively identify fraud-prone areas and implement preventive measures accordingly. Given the limited forensic resources available to banks in smaller markets such as Bindura, the opportunity factor was identified as the most exploitable dimension of the triangle, making the evaluation of forensic accounting tool effectiveness particularly pertinent within this context.

Notwithstanding its analytical utility, the Fraud Triangle Theory presents certain limitations that informed the theoretical design of this study. Free (2015) and Lokanan (2015) argue that the model

places disproportionate emphasis on individual behaviour while neglecting the systemic, regulatory, and governance dimensions that render organisations structurally susceptible to fraud. Recognising these limitations, this study did not rely on the Fraud Triangle Theory in isolation but rather supplemented it with Agency Theory, thereby ensuring a more comprehensive theoretical framework capable of accounting for both individual motivations and the institutional principal-agent dynamics that facilitate fraudulent conduct within Bindura's banking sector.

2.2.2 Agency Theory

Agency Theory, developed by Jensen and Meckling (1976), evaluates the association between the principal, for instance, the shareholders, and the agent, such as bank managers and employees. Under information asymmetry and the lack of proper supervision, an agent may have interests that conflict with those of his/her principal. The theory is especially applicable in the case of Zimbabwe due to the continued lack of effective corporate governance practices. According to Muponde (2018), banks in urban areas such as Bindura have weak board governance and lack internal control, resulting in fraudulent activities at the management level. Ntim and Soobaroyen (2019) assert that weak regulatory enforcement further complicates the issue. Forensic accounting, which entails independent investigations, is very consistent with the monitoring requirement emphasized by Agency Theory.

Forensic accountants play a vital role in bridging the communication gap between the agent and the principal in financial firms. Singleton & Singleton (2010) note that they can assist in identifying and reviewing transactions to enable corrective measures to be taken. According to Bhasin (2016), their contributions include compliance monitoring and assessing the risks of fraud, hence improving transparency. In this regard, the Reserve Bank of Zimbabwe (2020) has recommended forensic audit units in banks to mitigate agency problems in financial institutions. It is worth noting that forensic accounting not only helps to identify cases of fraud but also improve governance processes. According to Brazel & Branson (2017), detecting irregularities results in increased accountability and prevention of similar fraud in the future.

2.3 Empirical Literature Review

The objective of this section is to critically review existing literature in relation to forensic accounting and fraud detection/prevention, drawing on both global, regional, and local perspectives.

2.3.1 Forensic Accounting Techniques Used in Banks

Onamusi et al. (2024) analysed the forensic accounting techniques applied in listed deposit money banks in Nigeria. Employing a quantitative research design, the study utilised structured questionnaires administered to 136 employees selected purposively across multiple banks, with data analysed using descriptive and inferential statistics. The study revealed that advanced technologies such as big data analytics, data visualisation, and data mining significantly improve fraud prevention capability, whereas traditional fraud detection software demonstrated no statistically significant effect. The findings therefore underscore the necessity of continuing to develop advanced analytics and data visualisation technologies, integrating these approaches into bank fraud prevention processes, and building employee skills in anomaly prediction to improve overall fraud prevention capacity.

In another research, Adegbayibi (2025) studied forensic accounting tools including forensic analytics, forensic review, and fraud risk assessment among 308 employees drawn from ten listed banks. Adopting a quantitative approach, the study employed an ordinary least squares regression model to analyse survey data collected through structured questionnaires. The findings revealed that all three tools significantly improved the fraud management capability of the sampled banks. The study recommends that these tools be systematically integrated into organisational operations through regular forensic review cycles, the introduction of fraud risk assessments during audits, and sustained improvement of analytics infrastructure within banking institutions.

Using surveys and regression and ANOVA analysis, Onyema et al. (2024) analysed the effect of forensic instruments such as forensic audits, data mining, and litigation support on fraud prevalence in selected deposit money banks in Nigeria. A mixed quantitative approach was adopted, with survey data collected from banking staff and subjected to both regression and analysis of variance techniques. A considerable positive effect was observed, with the use of

forensic instruments significantly decreasing fraud and improving financial reporting quality. Among other recommendations, the authors advocate for the institutionalisation of forensic accounting units within banks, the acquisition of contemporary data mining technologies, and the use of forensic evidence in prosecuting financial misconduct as an additional deterrence measure.

Technology-driven forensic auditing instruments, including Robotic Process Automation (RPA), textual analysis, and artificial intelligence-driven analytics, were analysed by Osanyinbola (2024) in selected deposit money banks in Abuja, Nigeria. Employing a quantitative research design, the study collected survey data from 58 staff members in accounts departments and analysed findings using ordinary least squares regression analysis. Results confirmed the effectiveness of RPA and textual analysis as forensic audit tools. The author recommends the strategic deployment of these tools by banks and forensic audit firms, supported by continuous training in financial intelligence skills, to enhance the analytical capabilities and overall effectiveness of forensic audit investigations.

In a related study, Onamusi et al. (2024) examined the effect of digital forensic tools such as communication monitoring, geospatial analysis, data encryption and security, and advanced analytics and algorithms on cyber fraud detection among Nigerian banks. A quantitative survey design was employed, with data collected from 216 quality control officers and analysed through multiple regression using SPSS version 23. The results demonstrated a significant positive effect for all tools on the detection of cyber fraud related to transactions. The study recommends the broad adoption of encryption and data security measures, geospatial analysis, AI algorithms, and monitoring software as integrated components of cyber fraud prevention strategies within banking institutions.

2.3.2 Effectiveness of Forensic Accounting Tools in Detecting and Preventing Fraud

Hassan et al. (2023) aimed at identifying the influence of forensic accounting, Generalised Audit Software (GAS), and whistleblower mechanisms on fraud prevention in auditing firms in Indonesia. Adopting a quantitative research design, the study collected data through structured interviews administered to 150 auditors working in both public and governmental audit firms, with findings analysed using descriptive statistics and regression models. The results showed that

forensic accounting alone had little impact on fraud prevention; however, when combined with GAS and whistleblowing mechanisms, forensic accounting resulted in a significant contribution to fraud deterrence. The researchers recommend that firms concentrate on creating comprehensive fraud detection systems, emphasising that employing forensic accountants without complementary tools yields negligible outcomes, and that whistleblower protection mechanisms be strengthened to sustain reporting cultures.

Hashem et al. (2024) considered the role of classic forensic techniques including ratio analysis, trend analysis, critical point audits, and relative size factor analysis in detecting financial fraud among 120 professional accountants in Syria. A descriptive and inferential statistical methodology was employed, with data collected through structured questionnaires and analysed using both descriptive and regression-based inferential techniques. The findings confirmed that forensic accounting methods proved useful in detecting fraud despite resource limitations within the Syrian context. The study recommends skills enhancement and continual professional development through forensic learning techniques, particularly among developing countries, as well as increased uptake of forensic methods within the public sector supported by government policy.

Naz and Khan (2025) carried out research on various corporations operating in Pakistan, drawing opinions from 200 accounting professionals and internal auditors. Employing a quantitative survey design, data were collected through structured questionnaires and analysed using regression analysis to evaluate the effects of fraud investigation, forensic auditing, and dispute settlement tools on organisational fraud prevention capacity. Results demonstrated a highly significant positive correlation between the application of these tools and improved fraud prevention outcomes. The findings highlighted the need for strong internal controls reinforced by dedicated forensic teams, and the study recommends that companies establish internal forensic units supported by regulations and industry standards to create a uniform approach to fraud detection across Pakistan's corporate sector.

Ejiziofor et al. (2022) investigated the influence of integrating big data and forensic accounting in financial organisations on the fraud detection process. Adopting a quantitative experimental approach, the study employed predictive models and simulated financial data, using data mining, clustering techniques, and AI-based anomaly detection methods to compare outcomes against

those of regular auditing procedures. The findings demonstrated that these advanced techniques vastly exceeded the efficiency of conventional audits in detecting fraudulent patterns. Based on their results, the authors highlighted the importance for African banks of transitioning from regular forensic analysis toward automation-based fraud detection systems to enhance detection accuracy and timeliness.

Madzivire et al. (2020) brought an important contribution from Zimbabwe by examining the effectiveness of forensic auditing within local accountancy firms. Adopting a mixed methods research design, the study collected primary data from 100 audit practitioners through both questionnaire and interview techniques, with quantitative data analysed using descriptive statistics and qualitative data subjected to content analysis. The findings concluded that the effectiveness of forensic audits ensured early detection of financial malpractice and minimised fraud incidences. The study encourages the implementation of forensic audit procedures in Zimbabwe's banking sector, particularly during internal audits, and recommends capacity building and good governance initiatives to extend forensic auditing beyond financial statement assessment to include operational risk evaluation.

Abdulrahman (2022) investigated forensic accounting tools and their effect on fraud control processes across different commercial banks in the United Arab Emirates. Employing a quantitative research design, data were collected through structured questionnaires administered to 80 staff members in compliance and internal audit departments, with factor analysis applied to examine the relationships among variables. The findings confirmed the significant positive contribution of forensic accounting tools to fraud control within the sampled institutions. Abdulrahman recommends increased utilisation of forensic audit software in banks, advocates that all internal audits be conducted using CAATs, and emphasises the importance of continuous innovation whereby financial institutions must regularly upgrade their forensic software to keep pace with evolving fraud perpetration methods.

Empirical studies conducted across Indonesia, Syria, Pakistan, Zimbabwe, the UAE, and the broader African continent have demonstrated a consistent trend regarding the critical role played by forensic accounting tools in fraud prevention; however, the impact is greatly enhanced when technology, competent personnel, and effective reporting mechanisms are incorporated. Tools

associated with forensic accounting identified across these studies include fraud examination, data mining, big data analytics, forensic auditing, litigation support, and whistleblowing procedures. The collective findings underscore the need for increased forensic accounting training, effective use of data tools, and the embedding of forensic procedures within corporate governance mechanisms to sustain fraud prevention outcomes.

2.3.3 Challenges in Implementing Forensic Accounting Systems

AlAbbadi et al. (2021) conducted research in Jordan aimed at identifying the barriers that inhibit the implementation of forensic accounting as a fraud prevention tool. Employing a quantitative descriptive survey design, data were collected from banking and regulatory personnel through structured questionnaires and analysed using descriptive statistics. The major impediments identified included the absence of accumulated forensic knowledge, poor stakeholder cooperation, high incidence of fraud, and insufficient technological infrastructure. The authors recommend targeted training to increase forensic knowledge, more efficient cooperation among banks, regulators, and technology firms, and sustained investment in forensic-specific technologies to significantly improve fraud prevention within Jordanian banking institutions.

Khaleduzzaman and Hera (2024) conducted research in Bangladesh using regression analysis of survey results provided by banking experts and financial students to determine the factors influencing the adoption of forensic accounting practices. A quantitative survey methodology was employed, with data collected through structured questionnaires and subjected to regression analysis to identify key determinants of forensic accounting adoption. The findings identified government incentives and regulatory frameworks as the two major determinants of adoption, with stakeholder knowledge and university education also playing contributory roles. The authors emphasise the importance of formal policies and regulations in encouraging forensic accounting uptake and stress the role of academia in equipping future accountants with the forensic skills necessary to drive change in fraud management.

Akinbowale et al. (2023) focused on mitigating cyber-fraud in South Africa, conducting qualitative analysis among 17 South African banks through chi-square and Spearman correlation tests to examine the relationship between forensic accounting practices and cyber-fraud incidence. The

findings revealed that the improper use of forensic practices, particularly in risk management and internal controls, was a contributory factor to cyber-fraud cases. The research highlights the significance of establishing more robust internal control systems within the context of forensic accounting practice and calls for routine risk assessments, an improved control environment, and sustained forensic education across the sector.

Anakwue (2024), in a country-specific study of Nigeria, employed a descriptive analysis approach to identify impediments to the standard implementation of forensic accounting. Data were gathered through secondary sources and qualitative documentary analysis, with findings providing insight into challenges common to developing economy contexts more broadly. The study identifies inadequate legislation, absence of financing, and lack of coordination among stakeholders as the primary barriers to effective forensic accounting implementation. Recommendations include the development of mandatory forensic auditing standards, support for whistleblower legislation, interagency cooperation frameworks, and public funding for training programmes and technologies to build a robust forensic accounting system.

Adejumo and Ogburie (2025) examined cross-border technical and institutional barriers preventing the effective implementation of forensic accounting at a global level. Employing a systematic review methodology, the study analysed existing literature to identify recurring impediments across multiple jurisdictions. The barriers identified include sophisticated financial fraud schemes involving cryptocurrencies, the large volume of data requiring continuous skills upgrading, lack of regulatory vigilance, and legislative differences between nations. The study recommends continued investment in blockchain-based forensic technologies, professional education targeting emerging fraud typologies, and legal harmonisation across countries to address these systemic implementation challenges effectively.

2.3.4 Strategies to Enhance the Effectiveness of Forensic Accounting in Fraud Detection

Barac and Du Plessis (2014) extensively examined the need for capacity building initiatives for forensic accounting in South Africa. Employing a qualitative research design, the study conducted in-depth interviews with bank managers, forensic auditors, and regulators, with data analysed through thematic analysis to identify patterns in forensic accounting capacity and practice. A

serious shortage of trained forensic accountants was observed, alongside a predominantly reactive rather than proactive approach to fraud management. The study recommends a strategic shift toward proactive forensic monitoring based on predictive data analytics, the incorporation of forensic accounting courses into university curricula, the creation of dedicated forensic accounting units within all major banks, and the development of structured career pathways for forensic specialists within the banking sector.

Okoye and Gbegi (2013) investigated the practical implementation of forensic accounting to mitigate fraud within Nigerian banks. Adopting a quantitative survey design, questionnaires were administered to internal auditors and risk managers employed in commercial banks, with data analysed using descriptive statistics and chi-square tests. The study identified lack of independence in forensic units and low levels of management support as key weaknesses undermining forensic accounting effectiveness. The authors recommend ensuring the operational independence of forensic units, providing regular training, synchronising internal forensic audits with external auditing practices, establishing proper fraud reporting channels, and implementing whistleblower protection mechanisms to strengthen forensic investigation outcomes.

Johansson et al. (2020) analysed how financial organisations in Sweden could effectively minimise fraud through the application of a systems perspective. Employing a qualitative secondary data analysis approach, the study examined case studies and existing literature on forensic accounting practices within Scandinavian banking institutions. The findings demonstrated that the integration of real-time transaction monitoring, predictive algorithms, and risk scoring significantly increased fraud detection efficiency and reduced detection errors. The authors attribute the success of Scandinavian banks in reducing fraud rates to their technological readiness, effective forensic audit teams, and regulatory pressures toward transparency, and recommend the adoption of similar integrated approaches in other national contexts.

Rezaee and Wang (2019), in a cross-country comparative study, examined anti-fraud tactics employed in the banking industries of China and the United States. Employing a mixed methods comparative research design, the study analysed both quantitative performance data and qualitative institutional frameworks across the two jurisdictions. The findings praised the use of forensic analytics tools such as data mining, text analysis, and dashboard visualisations in uncovering

fraudulent activity, and recommended extending the application of these technologies from fraud detection to fraud prediction. The authors stress the significance of risk-based audit techniques, continuous auditing methods, and cross-disciplinary collaboration among forensic accountants, data scientists, and fraud risk managers in building effective and sustainable anti-fraud systems.

Khan and Shafqat (2023) employed a quantitative survey design involving regression analysis of responses from 180 bank employees in Pakistan to evaluate the organisational variables that enhance forensic accounting effectiveness. Data were collected through structured questionnaires and analysed using multiple regression to identify the strongest predictors of forensic accounting success. The researchers found that top management support, sufficient resource allocation to forensic accounting functions, and team autonomy were the most significant determinants of forensic effectiveness. The study concludes that organised institutional support for forensic accounting, comprising enabling policy frameworks, financial support for technology upgrades, and operational freedom in investigation reporting, is vital to sustaining effective fraud detection and prevention outcomes within banking institutions.

2.4 Research Gap

Despite the growing body of empirical literature on forensic accounting and fraud management, significant gaps remain that this study seeks to address. While studies conducted in Nigeria by Onamusi et al. (2024), Onyema et al. (2024), and Adegbayibi (2025), in Zimbabwe by Madzivire et al. (2020), in South Africa by Akinbowale et al. (2023), and internationally by Hassan et al. (2023), Abdulrahman (2022), and Khan and Shafqat (2023) have collectively advanced understanding of forensic accounting effectiveness, these studies were predominantly conducted within large urban banking institutions or developed economy contexts. An empirical gap exists in that no study has specifically examined forensic accounting tool adoption and effectiveness within the smaller regional banking environment of Bindura, Zimbabwe. A contextual gap further exists as most prior studies relied on quantitative survey designs, limiting the depth of institutional insight generated. A methodological gap is also evident, as few studies have employed mixed methods designs capable of capturing both measurable effectiveness and practitioner experiences simultaneously. This study therefore addresses these gaps by examining forensic accounting

effectiveness specifically within Bindura's banking sector using an explanatory sequential mixed methods approach.

2.5 Chapter Summary

In this chapter, an extensive review of the literature on the topic of forensic accounting in relation to fraud detection and prevention has been conducted. Basic terms such as fraud, forensic accounting, and fraud management have been clearly explained with support from important theories, such as the Fraud Triangle Theory and Agency Theory, to provide insight into the causes of fraud and ways to mitigate the risks associated with it. Empirical studies concerning the use of tools and techniques in forensic accounting, factors influencing the use of forensic accounting, and effectiveness of forensic accounting practices across the globe, in Africa, and in Zimbabwe have also been covered in the chapter. Although there is substantial literature available that highlights the importance of forensic accounting in fraud management, certain gaps can still be identified, especially when it comes to conducting studies that investigate how forensic accounting practices have been employed and their effectiveness in managing frauds in smaller banking industries, such as Bindura.

CHAPTER III

RESEARCH METHODOLOGY

3.0 Introduction

The chapter presents the methodological framework adopted for conducting the present study on the effectiveness of forensic accounting tools in detecting and preventing fraud within banks operating in Bindura, Zimbabwe. The chapter outlines the research philosophy underpinning the study, the research design selected, the research approach adopted, the target population and sampling procedures employed, the data collection instruments utilised, and the data analysis techniques applied in order to address the study's objectives. The chapter further explains the measures taken to ensure the reliability, validity, and ethical integrity of the research process. The study is grounded in the pragmatist philosophical tradition, which informed the adoption of an

explanatory sequential mixed methods design integrating both deductive and inductive reasoning across two sequential phases of data collection and analysis. The selected methodology was determined by the nature of the research problem, the study's objectives, and the need to generate findings that are both statistically measurable and contextually meaningful within the specific banking environment of Bindura. The coherent alignment of the research philosophy, design, and approach ensures that the conclusions drawn are credible, transferable, and methodologically sound.

3.3 Research Approach

A research approach refers to the logical reasoning process that guides a study from theoretical grounding through data collection to analysis. Saunders et al. (2019) identify three primary research approaches: deductive, inductive, and abductive. Deductive research tests existing theoretical propositions against empirically derived evidence, making it appropriate for studies seeking to confirm or falsify established theory (Creswell & Creswell, 2018). Inductive research, by contrast, builds generalised theories from specific observations and is commonly associated with qualitative inquiry (Silverman, 2015). Abductive reasoning combines both approaches cyclically to construct explanations, making it suited for exploratory research (Bryman, 2016). Understanding these approaches is fundamental to research design, as the chosen reasoning logic must align coherently with the study's philosophical assumptions, methodological orientation, and data collection instruments to ensure the validity and credibility of findings.

This study adopted a mixed methods research approach, integrating both deductive and inductive reasoning across its two sequential phases in alignment with the Explanatory Sequential Mixed Methods Design. The quantitative first phase is governed by deductive reasoning, wherein the Fraud Triangle Theory (Cressey, 1953) and Agency Theory (Jensen & Meckling, 1976) provide the theoretical foundation for testable propositions regarding forensic accounting effectiveness, examined through structured questionnaires. The qualitative second phase is governed by inductive reasoning, allowing contextual themes regarding implementation challenges and institutional experiences to emerge organically from semi-structured interview responses. Tashakkori and Teddlie (2010) affirm that integrating both reasoning logics is a defining characteristic of robust mixed methods research, enabling comprehensive investigation of both measurable outcomes and contextual realities within a single coherent study.

The mixed methods research approach is further justified by the dual objectives of the present study, which simultaneously require statistical measurement of forensic accounting tool effectiveness and nuanced contextual explanation of implementation barriers within Bindura banks. A purely deductive approach would generate quantifiable findings but would fail to capture the operational realities shaping forensic accounting practice in this specific environment. Conversely, a purely inductive approach would produce rich narratives but would lack the generalisability necessary for sector-wide conclusions. Muponde (2018) and Mudzonga and Chigumira (2020) similarly adopted mixed reasoning frameworks in comparable Zimbabwean banking fraud studies, demonstrating its feasibility within this research context. The integration of deductive and inductive reasoning therefore strengthens the methodological coherence of this study, ensuring that both quantitative and qualitative components contribute meaningfully to answering the research questions.

3.1 Research Design and Justification

A research design refers to a structured framework that guides the systematic process of collecting, measuring, and analysing data in order to address research questions coherently and rigorously. Creswell and Creswell (2018) define research design as a comprehensive plan specifying the procedures required for gathering information necessary to resolve a research problem, while Kothari (2014) describes it as an overarching plan incorporating methodological procedures that ensure the reliability and validity of findings. This study adopts the Explanatory Sequential Mixed Methods Design, a specific variant of mixed methods research that proceeds in two distinct phases. In the first phase, quantitative data were collected and analysed through structured questionnaires administered to bank employees, auditors, and compliance officers in Bindura, providing a broad and measurable picture of forensic accounting tool utilisation and perceived effectiveness. In the second phase, qualitative data were collected through semi-structured interviews designed to explain, elaborate upon, and contextualise the quantitative results obtained in phase one. Creswell and Plano Clark (2018) affirm that this sequential structure is particularly valuable when initial quantitative findings require deeper interpretation that numerical data alone cannot adequately provide.

The Explanatory Sequential Design is justified by the nature of the research objectives, which simultaneously require quantifiable assessments of forensic accounting effectiveness and nuanced contextual explanations of implementation challenges within Bindura's banking environment. The design further aligns with the epistemological stance of pragmatism, which underpins mixed methods research by prioritising practical research outcomes over adherence to a single philosophical tradition (Tashakkori and Teddlie, 2010). Pragmatism holds that research methods should be selected based on their capacity to answer research questions most effectively, rather than on ideological commitment to either positivism or interpretivism (Creswell and Creswell, 2018). Muponde (2018) and Mudzonga and Chigumira (2020) similarly adopted mixed methods frameworks grounded in pragmatism in comparable Zimbabwean banking fraud studies, demonstrating the suitability and methodological validity of this design choice within the local research context.

3.4 Population and Sampling Procedures

3.4.1 Population

Population refers to the totality of individuals, institutions, or objects that share characteristics relevant to the research inquiry and from which study conclusions are drawn (Saunders et al., 2019; Kothari, 2014). In this study, the target population comprised staff members of commercial banks operating in Bindura who hold positions in accounting, auditing, internal control, and compliance departments. This population was deemed appropriate given that these individuals possess direct hands-on knowledge of forensic accounting techniques and their operational effectiveness in detecting and preventing fraud within their respective institutions. Bryman (2016) affirms that in banking research, employees and managers directly engaged in fraud management functions constitute the most credible source of relevant empirical data. The inclusion of both operational staff and managerial personnel enhances the comprehensiveness of the study by capturing

perspectives from individuals who both design and implement fraud prevention measures, an approach similarly adopted by Muponde (2018) in comparable Zimbabwean banking fraud research.

3.4.2 Sampling Procedures and Sample Sizes

A sample refers to a selection of a particular number of elements from a larger pool, who would take part in the study. As stated by Creswell and Creswell (2018), sampling allows for making research more efficient by limiting it to a smaller sample. In this case, a purposive sampling method will be used, which involves a non-probability approach where participants relevant and knowledgeable about the subject area will be included. According to Teddlie and Yu (2007), purposive sampling technique is suitable for situations whereby researchers intend to learn from people who have specialized knowledge. Similarly, Saunders et al. (2019) suggest that purposive sampling should be employed in applied business research since the aim is to develop a deeper understanding through interviews with selected key personnel. Purposive sampling is also applicable based on the fact that this research involves gaining insights from people who are actively involved in the process of internal control and detection of fraud in Bindura banks. This is consistent with the procedure adopted by Chikozho (2019), who chose finance managers and compliance officers from banks in Harare to analyze corporate governance. The fact that the total population of banking staff in Bindura is small means that it is appropriate to adopt purposive sampling to include only experienced respondents. About 40-50 people are expected to respond to this study's questionnaire from Bindura banks including ZB Bank, CBZ, Agribank, and First Capital Bank in Bindura.

Here is the sample constituency table:

Bank	**Department**	**Population (N)**	**Sample (n)**
ZB Bank	Auditing / Internal Control	8	4
	Accounting	6	3
	Compliance	5	3

CBZ Bank	Auditing / Internal Control	7	4
	Compliance	5	3
Agribank	Accounting	5	3
	Auditing / Internal Control	6	3
First Capital Bank	Compliance	6	3
Total		**48**	**26**

The total population of banking staff in Bindura was first divided across the four participating institutions: ZB Bank, CBZ Bank, Agribank, and First Capital Bank. Within each institution, the relevant staff categories were bank employees, auditors, compliance officers, and branch managers — the groups with direct knowledge of fraud detection and forensic accounting practices. Purposive sampling was then applied to each institution to select only those participants with specialised knowledge relevant to the research objectives. The four purposively selected sub-samples converged into a final sample of 40–50 respondents, who participated through structured questionnaires (quantitative phase) and semi-structured interviews (qualitative phase) in line with the Explanatory Sequential Mixed Methods Design.

3.5 Data Collection Methods

Data collection is an essential step in any empirical study, representing the critical intermediary process that connects theoretical assumptions with the actualities of practice. According to Saunders, Lewis, and Thornhill (2019), data collection approaches must be properly designed to systematically acquire valid, pertinent, and objective data that aligns with the research objectives. For this study, a multi-sourced data collection approach was adopted, incorporating both primary and secondary data sources. Primary data were obtained through structured questionnaires and semi-structured interviews administered to banking staff in Bindura with knowledge of forensic

accounting and fraud detection practices. Secondary data were sourced from institutional documents relevant to the subject matter. As advocated by Creswell and Creswell (2018) and Bryman (2016), combining primary and secondary data collection approaches enhances the reliability and validity of research outcomes, particularly within the domain of financial crimes.

3.5.1 Structured Questionnaire

The structured self-administered questionnaire served as the primary quantitative data collection instrument for this study and was administered to bank employees, auditors, compliance officers, and branch managers across the four participating institutions. The questionnaire consisted predominantly of closed-ended questions in the form of five-point Likert scale items, designed to quantitatively measure respondents' perceptions regarding the availability, usage, and effectiveness of forensic accounting tools within Bindura banks. A structured questionnaire was appropriate under the positivist paradigm because it enabled the systematic collection of empirical data while minimising interviewer bias and maximising comparability across respondents (Kothari, 2014; Bhasin, 2016). Muponde (2018) and Chikozho (2019) similarly employed structured questionnaires in their respective studies on fraud risk control and corporate governance in Zimbabwean financial institutions, confirming the instrument's suitability within this research context.

The structured questionnaire offered several merits in the context of this study. First, it allowed data to be collected from a relatively large number of respondents across four institutions simultaneously, making it time-efficient and cost-effective (Bryman, 2016). Second, the standardised format ensured uniformity in the data collected, thereby facilitating statistical comparison and analysis across respondents and institutions. Third, the self-administered nature of the questionnaire afforded respondents anonymity, which was particularly important given the sensitive nature of fraud-related disclosures within the banking sector (Kothari, 2014). However, the instrument also carried notable limitations. Closed-ended questions restricted respondents' ability to elaborate on their experiences, potentially resulting in superficial data that failed to capture the contextual complexities of forensic accounting implementation. Additionally, there existed a risk of respondents misinterpreting questions, providing socially desirable answers, or

submitting incomplete responses, all of which could compromise data quality (Saunders et al., 2019).

3.5.2 Semi-Structured Interviews

Semi-structured interviews constituted the qualitative data collection instrument and were conducted with purposively selected key informants, specifically senior auditors, compliance officers, and branch managers who possessed specialised knowledge of forensic accounting and fraud management within their respective institutions. This instrument was employed in the second phase of the Explanatory Sequential Mixed Methods Design to elaborate upon and contextualise the statistical findings generated from the questionnaires. Semi-structured interviews provided a flexible framework in which pre-determined questions guided the discussion while allowing respondents the freedom to expand upon their responses, introduce additional themes, and share experiential knowledge that could not be captured through closed-ended items (Creswell, 2014; Silverman, 2015). Mudzonga and Chigumira (2020) similarly relied on interview data to deepen their understanding of fraud control practices in Zimbabwean banking institutions, demonstrating the instrument's applicability within this research environment.

The semi-structured interview offered significant merits for this study. It enabled the researcher to probe deeper into respondents' experiences, generating rich, nuanced data that illuminated the practical realities of forensic accounting implementation in Bindura banks (Saunders et al., 2019). The conversational format also allowed for real-time clarification of ambiguous responses, thereby improving data accuracy and interpretive depth. Furthermore, interviews facilitated the exploration of sensitive issues surrounding fraud cases and institutional vulnerabilities in a manner that respondents might have been reluctant to address in writing. Nevertheless, the instrument was not without limitations. Interviews were time-consuming to conduct, transcribe, and analyse, which restricted the number of participants that could be engaged within the study's timeframe. There also existed potential for interviewer bias to influence the direction of questioning or the interpretation of responses, which the researcher mitigated through the use of a standardised interview guide and reflexive practice (Bryman, 2016).

3.5.3 Document Review

Document review served as the secondary data collection instrument and involved a systematic examination of institutional and regulatory documents relevant to forensic accounting and fraud management within the Zimbabwean banking sector. Documents consulted included Reserve Bank of Zimbabwe supervisory reports (2020), internal audit reports, annual financial statements from the participating banks, and institutional fraud risk management policy documents. The document review was directed at the researcher rather than participants, drawing on publicly available and institutionally produced materials to provide contextual grounding for the primary data. As noted by Teddlie and Tashakkori (2009), the use of secondary sources contributes to methodological triangulation, strengthening empirical inference by enabling the researcher to juxtapose respondents' perceptions against formal institutional practices and regulatory requirements. Mugariri (2018) similarly employed document review to identify systemic gaps in fraud control procedures among rural banks in Zimbabwe, affirming its analytical value within this research context.

The document review offered several merits within this study. It provided access to historical and institutional data that could not be obtained through primary instruments alone, enabling the researcher to situate current forensic accounting practices within a broader regulatory and organisational context (Bryman, 2016). Documents also represented unobtrusive data sources that were not susceptible to the response biases inherent in self-reported instruments, thereby enhancing the objectivity of the analysis. Furthermore, the triangulation of documentary evidence with questionnaire and interview data strengthened the overall validity of the study's conclusions. However, the instrument was limited by the restricted availability of confidential institutional documents, as some banks were reluctant to disclose internal audit reports or fraud case records due to confidentiality concerns (Saunders et al., 2019). Additionally, secondary documents were produced for institutional rather than research purposes, meaning they may not have addressed the specific dimensions of forensic accounting effectiveness that this study sought to investigate.

3.6 Data Analysis Techniques

Data analysis is a thought process that involves the transformation of unstructured information into knowledge that enables one to objectively analyze empirical trends using relevant theoretical concepts. As argued by Saunders, Lewis & Thornhill (2019), the choice of data analysis methods

should be consistent with the research philosophy, aims and approach. Given that the study follows a positivist research philosophy and quantitative descriptive approach, the data analysis process entails transforming numerical data into meaningful statistics. It should be noted that as highlighted by Creswell & Creswell (2018), quantitative analysis allows recognizing relationships, trends, and the significance of various variables; hence, it is essential when determining whether or not forensic accounting practices have been adopted and how effective they are in the Bindura banking sector. Thus, an appropriate methodology will enable arriving at results not based on hypotheses but rather on empirical data.

Primary data collected via questionnaires will be analyzed through descriptive and inferential statistical approaches, with the help of Statistical Package for the Social Sciences (SPSS) software. The use of descriptive statistics (frequencies, percentages, means, standard deviations) will allow getting a general understanding of the demographic factors of participants' characteristics and current attitudes towards forensic accounting tools (Bryman, 2016). Through this approach, it becomes possible to get a better picture of the investigated field with respect to the frequency of using forensic tools, their impact on detecting cases of fraud, etc. However, in order to analyze relations among particular variables (i.e., the association between the availability of forensic tools and a decrease in cases of fraud), one can employ inferential statistical analysis, including Chi-square test, and correlations analysis.

This multiple level analysis technique is proven to be effective by previous works done in the same setting in Zimbabwe through the employment of SPSS driven statistics, by Muponde (2018), and Chikozho (2019). Secondary data in the research project will go through content analysis for contextual analysis and regulations, to supplement the numerical results. Content analysis technique as recommended by Krippendorff (2013) and reinforced by Silverman (2015) refers to the process of analyzing information through the review of documents to uncover themes and patterns as well as regulatory requirements. For this research, content analysis of annual bank reports and fraud investigation reports from the Reserve Bank of Zimbabwe (2020) will be conducted to assess consistency between practice and regulation.

3.7 Data Collection Procedures

Data collection was conducted systematically across the four participating banking institutions in Bindura, namely ZB Bank, CBZ Bank, Agribank, and First Capital Bank, following the sequential phases of the Explanatory Sequential Mixed Methods Design. Prior to data collection, the researcher obtained formal written permission from each participating institution and secured ethical clearance from Bindura University of Science Education. In the quantitative phase, structured questionnaires were personally distributed to purposively selected respondents with a standardised covering letter assuring confidentiality, and respondents were afforded two weeks for completion. In the qualitative phase, semi-structured interviews were scheduled with key informants following quantitative data analysis, lasted approximately thirty to forty-five minutes, and were audio-recorded with participant consent before verbatim transcription. Document review was conducted concurrently through examination of regulatory reports and institutional policy documents relevant to forensic accounting and fraud management practice.

3.8 Validity and Reliability

Validity and reliability are fundamental criteria for evaluating the rigour and trustworthiness of research findings, and deliberate measures were taken throughout this study to uphold both standards. Validity refers to the extent to which an instrument accurately measures what it intends to measure, while reliability refers to the consistency of measurement across contexts (Saunders et al., 2019; Creswell and Creswell, 2018). Content validity of the questionnaire was ensured through alignment with the study's objectives and theoretical frameworks, peer review by the supervising academic, and pilot testing with five banking staff members outside the main sample. Reliability was assessed using Cronbach's Alpha coefficient through SPSS, with a threshold of 0.70 for internal consistency (Bryman, 2016). For qualitative data, credibility was enhanced through member checking and triangulation of interview, questionnaire, and documentary data sources to corroborate emerging themes and strengthen overall conclusion validity.

3.9 Ethical Considerations

3.9.1 Informed Consent

Consent in the current investigation shall be obtained through informing all participants about the nature and purpose of the research project together with potential risks and benefits that can be

associated with participation. Written consent shall be obtained where participants freely choose to take part without experiencing any kind of pressure.

3.9.2 Confidentiality and Privacy

Forensic accounting and fraud examination are delicate areas requiring confidentiality to be guaranteed. Personal identifiers will be excluded from research data. All data collected will be stored in a secure manner with unauthorized access prohibited. Any findings that shall be revealed will be presented in an aggregated manner thus not identifying any individual or organization involved.

3.9.3 Data Protection

Data protection measures will be taken to ensure that any data collected during the process complies with data protection legislation in Zimbabwe or elsewhere. This includes encryption of any electronic information and storage of physical data in secure locations. Information provided by respondents will only be used for the intended purpose and destroyed once the retention period expires

3.9.4 Avoidance of Harm

It is possible that participants could feel awkward talking about fraud-related matters, owing to concerns about their reputation or even fear of repercussions. Interviews and surveys in this regard will be performed carefully and confidentially to avoid any issues.

3.10 Chapter Summary

This chapter has outlined the research methodology adopted in the current study. The research methodology included aspects such as the research design and methodology, along with the sampling procedure and population used to make sure that the results obtained from the study are valid and reliable. Data collection techniques used in the study have been highlighted, along with the ways in which informed consent was obtained and the ethical issues taken into consideration during the research process. In addition, details of the analytical techniques applied in the research have been elaborated on, with an emphasis on both qualitative and quantitative analysis.

CHAPTER IV

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter presents, analyses, and discusses data collected from employees working in selected banks in Bindura, Zimbabwe. The primary aim is to examine how forensic accounting tools and techniques are applied as strategies for combating fraud in the banking sector. Data were collected using structured questionnaires administered to employees across the Auditing/Internal Control, Accounting, and Compliance departments, and supplemented by semi-structured interviews to

capture qualitative insights. The questionnaire gathered data on demographic profiles, awareness and usage of forensic accounting tools, tool effectiveness, implementation challenges, and suggested improvement strategies. Analysis and discussion are structured according to the four research objectives of the study.

4.1 Demographic Characteristics of Respondents

A total of 45 respondents participated in the study, drawn from compliance, internal audit, branch management, and general accounting/operations functions across banks in Bindura. The demographic profile ensured representation across gender, age, seniority, and experience levels.

Table 1**: Respondents' Demographic Characteristics (n=45)**

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	27	60.0
	Female	18	40.0
Age	25–34 years	22	48.9
	35–44 years	15	33.3
	45 years and above	8	17.8
Job Position	Compliance Officers	16	35.6
	Internal Auditors	13	28.9
	Branch Managers	10	22.2
	Other Staff (Accountants/Operations)	6	13.3
Work Experience	1–5 years	19	42.2
	6–10 years	14	31.1

Demographic Variable	Category	Frequency	Percentage (%)
	Above 10 years	12	26.7

Source: Field Data (2026)

As shown in Table 1, male respondents constituted 60.0% (n=27) and female respondents 40.0% (n=18) of the sample. The largest age cohort was 25–34 years at 48.9% (n=22), followed by 35–44 years at 33.3% (n=15), and those aged 45 and above at 17.8% (n=8). In terms of job position, compliance officers were the most represented at 35.6% (n=16), followed by internal auditors at 28.9% (n=13), branch managers at 22.2% (n=10), and other staff at 13.3% (n=6). Regarding work experience, 42.2% (n=19) had 1–5 years of experience, 31.1% (n=14) had 6–10 years, and 26.7% (n=12) had more than 10 years. The diversity in age, role, and experience ensured that the study captured both frontline operational perspectives and those of senior practitioners with deeper institutional knowledge.

4.2 Descriptive Statistics: Mean and Standard Deviation Analysis

Standard deviation analysis was used alongside mean scores to measure both the central tendency and dispersion of respondents' perceptions across four thematic areas: forensic accounting tool usage, tool effectiveness, adoption challenges, and improvement strategies.

Regarding forensic accounting tool effectiveness, forensic audit investigations (SD = 0.71) and digital tracking of transactions (SD = 0.76) showed low dispersion, reflecting strong consensus on their effectiveness. In contrast, Benford's Law analysis (SD = 1.12) and data mining and analytics software (SD = 1.05) showed higher variability, suggesting uneven awareness and technical proficiency across respondents.

Regarding perceptions of forensic accounting effectiveness, standard deviations ranged from 0.78 to 1.09. The statement that forensic accounting tools help in early detection of fraud (SD = 0.82) and the statement that forensic accounting improves transparency and accountability (SD = 0.78) showed high consensus. The statement on reduction of financial losses from fraud had a higher SD of 1.09, indicating that respondents are more aligned on detection than on prevention roles.

Adoption challenge responses showed moderate to high variability. Inadequate financial resources (SD = 0.88) and limited technological capacity (SD = 0.91) were relatively consistent across

respondents, indicating universal experience of these barriers. Resistance from staff or management (SD = 1.14) and limited awareness of forensic accounting benefits (SD = 1.18) had higher variability, reflecting differences in organisational culture.

Strategy ratings showed the most consensus, with standard deviations ranging from 0.70 to 0.95. Continuous staff training (SD = 0.72) and strengthening regulatory policies (SD = 0.80) received the highest levels of agreement.

Table 2: Mean and Standard Deviation of Key Variables

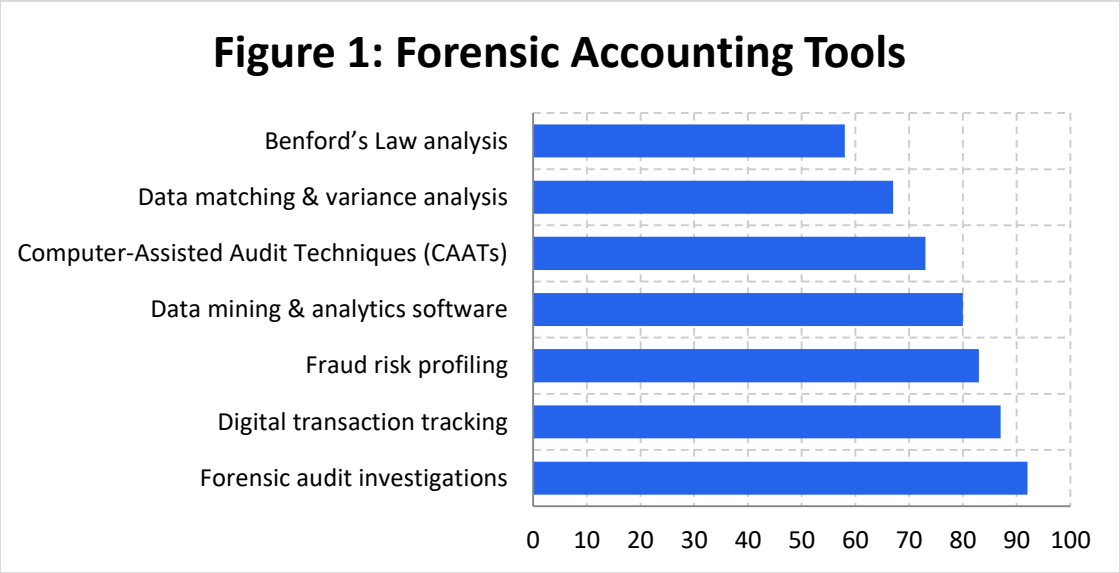
Variable / Item	Mean	Std. Deviation
EFFECTIVENESS OF FORENSIC ACCOUNTING TOOLS		
Forensic audit investigations	4.5	0.71
Data mining & analytics software	3.9	1.05
Benford's Law analysis	3.5	1.12
Digital tracking of transactions	4.4	0.76
Fraud risk profiling	4.2	0.84
Computer-Assisted Audit Techniques (CAATs)	4.0	0.88
Data matching & variance analysis	3.8	0.95
PERCEPTIONS ON FORENSIC ACCOUNTING EFFECTIVENESS		
Helps in early detection of fraud	4.3	0.82
Improves accuracy in identifying fraud	4.2	0.87
Strengthens internal control systems	4.1	0.85
Reduces financial losses caused by fraud	3.7	1.09
Enhances fraud-related decision-making	4.0	0.90

Variable / Item	Mean	Std. Deviation
Improves transparency and accountability	4.3	0.78
CHALLENGES AFFECTING ADOPTION		
Lack of trained forensic accountants	3.6	1.02
Inadequate financial resources	4.4	0.88
Limited technological capacity	4.2	0.91
Weak regulatory support	3.9	0.97
Resistance from staff or management	3.9	1.14
High training and implementation costs	3.5	1.06
Limited awareness of forensic accounting benefits	3.4	1.18
STRATEGIES TO IMPROVE EFFECTIVENESS AND ADOPTION		
Continuous staff training	4.6	0.72
Strengthening regulatory policies	4.4	0.80
Integration into risk management frameworks	4.2	0.85
Collaboration with external forensic specialists	4.2	0.88
Promote technology-supportive organisational culture	4.1	0.90
Investment in modern forensic accounting software	4.0	0.90
Allocation of sufficient budgets	3.9	0.95

Source: Field Data (2026)

4.3 Forensic Accounting Tools Used by Banks in Bindura

Figure 1: Forensic Accounting Tools Used by Banks in Bindura (n=45)



The study's first objective sought to identify the forensic accounting tools and techniques used by banks in Bindura. As shown in Figure 1, forensic audit investigations were the most widely used tool, cited by 92% (n=41) of respondents. Digital transaction tracking was the second most used at 87% (n=39), followed by fraud risk profiling at 83% (n=37) and data mining and analytics software at 80% (n=36). Computer-Assisted Audit Techniques (CAATs) were used by 73% (n=33) of respondents. Data matching and variance analysis were used by 67% (n=30) of respondents, while Benford's Law analysis was the least cited, used by only 58% (n=26) of respondents.

Table 3: Forensic Accounting Tools Used by Respondents (n=45)

Tool	Frequency	Percentage (%)
Forensic audit investigations	41	92.0
Digital transaction tracking	39	86.7
Fraud risk profiling	37	82.2
Data mining & analytics software	36	80.0
Computer-Assisted Audit Techniques (CAATs)	33	73.3

Tool	Frequency	Percentage (%)
Data matching & variance analysis	30	66.7
Benford's Law analysis	26	57.8

Source: Field Data (2026)

These findings confirm that banks in Bindura apply a multi-tool forensic accounting approach, combining traditional investigative auditing with technology-enabled instruments. The dominance of forensic audit investigations and digital tracking reflects both the accessibility of these tools and respondents' familiarity with them. The relatively lower uptake of Benford's Law analysis may reflect gaps in statistical training among practitioners in the region.

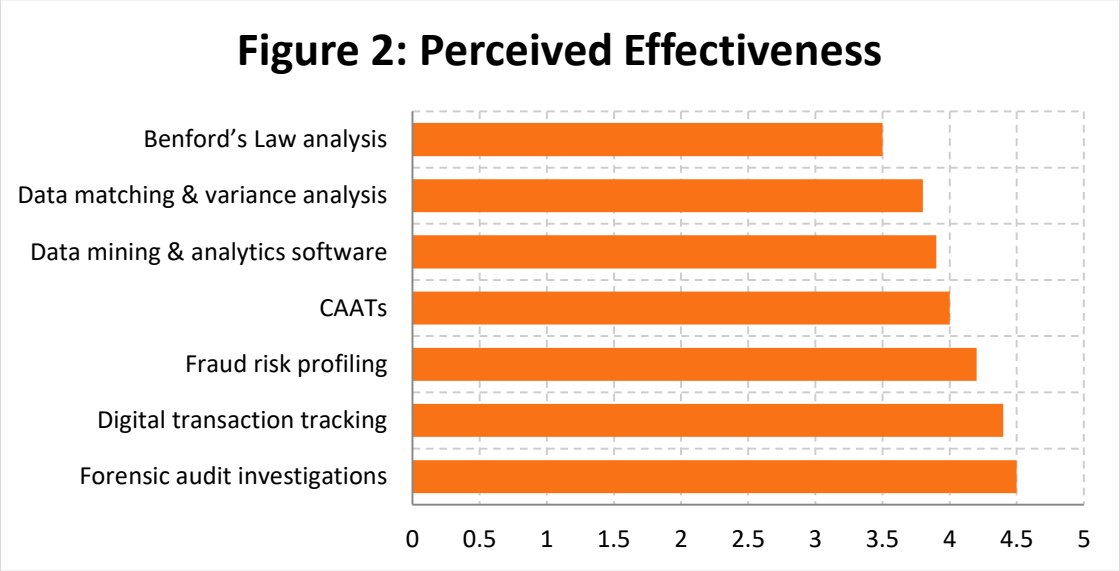
Interview responses reinforced and contextualised the quantitative data. Most participants confirmed that forensic auditing formed the bedrock of their anti-fraud practice, with digital tracking tools being increasingly integrated into daily operations. However, some interviewees noted that more advanced tools such as Benford's Law were used only when there was a specific trigger or suspicion, rather than as part of routine monitoring. One compliance officer explained:

> *"We rely heavily on forensic audits and our transaction monitoring systems because these are the tools we understand best and have been trained on. Things like Benford's Law, we know they exist, but honestly, very few of us have had training on how to apply them properly in our day-to-day work."*

This observation highlights that tool adoption in Bindura is shaped not only by availability but by the depth of practitioner knowledge, which has significant implications for training and capacity building.

4.4 Effectiveness of Forensic Accounting Tools in Detecting and Preventing Fraud

Figure 2: Perceived Effectiveness of Forensic Accounting Tools (Mean Ratings out of 5)



The second objective examined the effectiveness of forensic accounting tools used by banks in Bindura. Using a five-point Likert scale (1 = Not Effective at All to 5 = Very Effective), respondents rated forensic audit investigations as the most effective tool (Mean = 4.5, SD = 0.71), followed by digital transaction tracking (Mean = 4.4, SD = 0.76). These high mean scores with low standard deviations indicate strong consensus that these two tools are the most impactful for fraud detection.

Table 4: Perceived Effectiveness of Forensic Accounting Tools (n=45)

Tool	Mean	Std. Dev.	% Effective / Very Effective
Forensic audit investigations	4.5	0.71	92.0
Digital transaction tracking	4.4	0.76	87.0
Fraud risk profiling	4.2	0.84	83.0
CAATs	4.0	0.88	73.3

Tool	Mean	Std. Dev.	% Effective / Very Effective
Data mining & analytics software	3.9	1.05	68.9
Data matching & variance analysis	3.8	0.95	64.4
Benford's Law analysis	3.5	1.12	57.8

Source: Field Data (2026)

Regarding broader perceptions of forensic accounting effectiveness, 84% (n=38) of respondents agreed or strongly agreed that forensic accounting tools help in the early detection of fraud (Mean = 4.3, SD = 0.82). Similarly, 84% (n=38) agreed that these tools improve transparency and accountability (Mean = 4.3, SD = 0.78). Strengthening internal controls was affirmed by 80% (n=36) of respondents (Mean = 4.1, SD = 0.85). However, only 71% (n=32) agreed that forensic tools effectively reduce financial losses from fraud (Mean = 3.7, SD = 1.09), suggesting that respondents recognise the stronger detection role of these instruments compared to their prevention role.

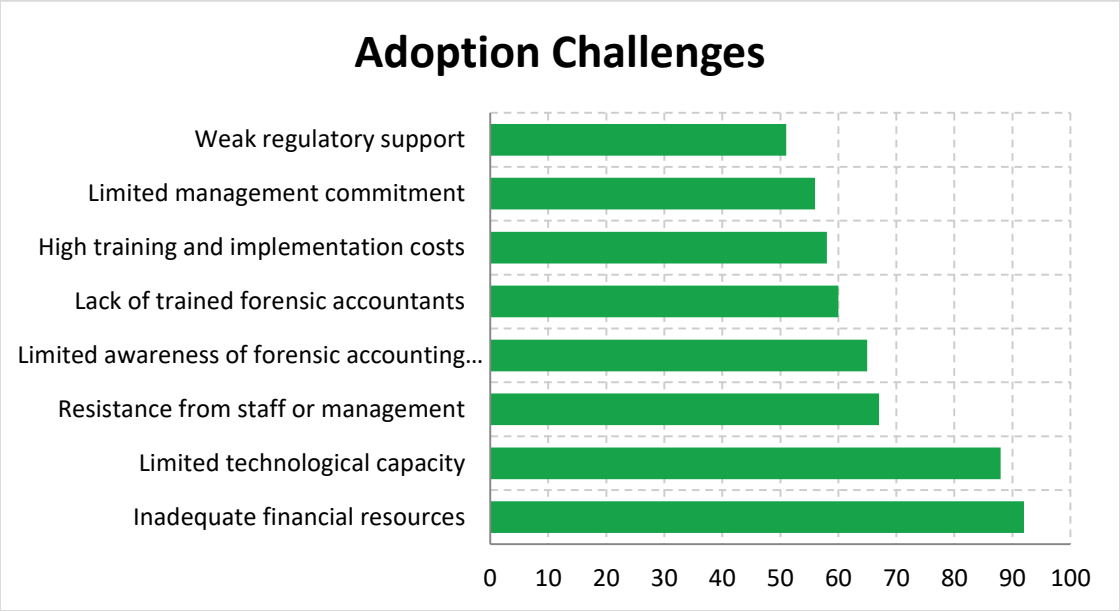
Interview respondents generally agreed that forensic tools had meaningfully improved fraud detection outcomes in their institutions but expressed reservations about whether detection alone translated into fraud prevention. Several noted that the effectiveness of tools was heavily contingent on staff competence and management commitment. One internal auditor stated:

> *"The digital tracking system has been a game changer, we can now flag suspicious transactions within hours rather than weeks. But the challenge is that when we raise alerts, we need management to act on them quickly, otherwise detecting fraud early does not prevent losses."*

This testimony underscores the importance of organisational responsiveness alongside technical tool effectiveness, a dimension not fully captured by quantitative ratings alone.

4.5 Challenges Encountered in the Implementation of Forensic Accounting

Figure 3: Challenges Affecting Adoption of Forensic Accounting Tools (n=45)



The third objective explored the challenges encountered by banks in Bindura in implementing forensic accounting. As shown in Figure 3 and Table 5, inadequate financial resources emerged as the most significant barrier, identified by 92% (n=41) of respondents (Mean = 4.4, SD = 0.88). Limited technological capacity was the second most cited challenge at 88% (n=40) of respondents (Mean = 4.2, SD = 0.91).

Table 5: Challenges Affecting Adoption of Forensic Accounting Tools (n=45)

Challenge	Freq.	%	Mean	Std. Dev.
Inadequate financial resources	41	92.0	4.4	0.88
Limited technological capacity	40	88.0	4.2	0.91

Challenge	Freq.	%	Mean	Std. Dev.
Resistance from staff or management	30	66.7	3.9	1.14
Limited awareness of forensic accounting benefits	29	64.4	3.4	1.18
Lack of trained forensic accountants	27	60.0	3.6	1.02
High training and implementation costs	26	57.8	3.5	1.06
Limited management commitment	25	55.6	3.7	0.97
Weak regulatory support	23	51.1	3.9	0.97

Source: Field Data (2026)

Resistance from staff or management was cited by 67% (n=30) of respondents, while limited awareness of the benefits of forensic accounting was cited by 65% (n=29). Lack of trained forensic accountants was identified by 60% (n=27) of respondents, high training and implementation costs by 58% (n=26), limited management commitment by 56% (n=25), and weak regulatory support by 51% (n=23). The combination of high mean scores and low standard deviations for financial and technological barriers indicates that these are universally experienced challenges across all sampled institutions, rather than being specific to individual banks.

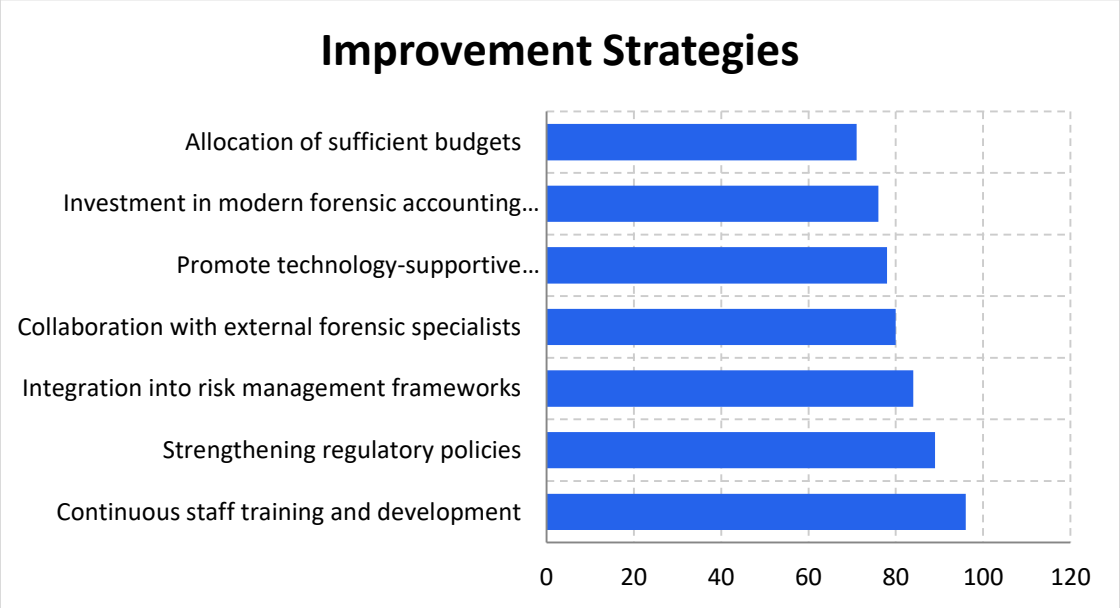
Interview participants consistently elaborated on the financial and skills barriers identified in the quantitative data. Several compliance officers noted that their banks could not afford the licensing fees for advanced forensic software platforms, and that the cost of specialist training was prohibitively high given the limited training budgets available to regional institutions. One branch manager observed:

"We want to do more with forensic accounting, but the reality is that the software alone costs more than our entire annual audit budget. You end up relying on spreadsheets and manual checks, which are better than nothing, but nowhere near adequate for the scale of electronic transactions we handle now."

Participants also commented on regulatory gaps, noting that the Reserve Bank of Zimbabwe had issued guidance on internal controls but had not mandated specific forensic accounting standards, leaving adoption largely at the discretion of individual institutions.

4.6 Strategies to Enhance the Effectiveness of Forensic Accounting

Figure 4: Strategies to Enhance Forensic Accounting Effectiveness (n=45)



The fourth objective examined strategies to improve the effectiveness of forensic accounting in detecting and preventing fraud in Bindura's banking sector. As shown in Figure 4 and Table 6, continuous staff training was the most widely endorsed strategy, cited by 95% (n=43) of respondents (Mean = 4.6, SD = 0.72). Strengthening of regulatory policies was the second most endorsed at 88% (n=40) of respondents (Mean = 4.4, SD = 0.80).

Table 6: Strategies to Enhance Adoption and Effectiveness of Forensic Accounting (n=45)

Strategy	Freq.	%	Mean	Std. Dev.
Continuous staff training and development	43	95.6	4.6	0.72
Strengthening regulatory policies	40	88.9	4.4	0.80
Integration into risk management frameworks	38	84.4	4.2	0.85
Collaboration with external forensic specialists	36	80.0	4.2	0.88
Promote technology-supportive organisational culture	35	77.8	4.1	0.90
Investment in modern forensic accounting software	34	75.6	4.0	0.90
Allocation of sufficient budgets	32	71.1	3.9	0.95

Source: Field Data (2026)

Integration of forensic tools into risk management frameworks was endorsed by 84% (n=38) of respondents (Mean = 4.2, SD = 0.85), while collaboration with external forensic specialists was endorsed by 80% (n=36) (Mean = 4.2, SD = 0.88). Promoting a technology-supportive organisational culture was endorsed by 78% (n=35), investing in modern forensic software by 76% (n=34), and adequate budget allocation by 71% (n=32). The low standard deviations across all strategy items indicate high consensus among respondents regarding the importance of each proposed intervention.

Interview participants strongly affirmed the primacy of training, with many emphasising that investment in tools without corresponding investment in human capacity would yield limited returns. Several respondents also called for the Reserve Bank of Zimbabwe to move beyond

guidance notes and introduce binding forensic accounting compliance standards for all licensed banks, regardless of size or location. One internal auditor articulated the broader systemic need as follows:

> *"Training is important, but it only works if there is a policy behind it. Right now, a small bank in Bindura is not required to have a forensic accounting unit. Until the Reserve Bank makes it mandatory and provides some support in terms of access to shared tools or resources, the smaller banks will always be left behind in this fight against fraud."*

This perspective reflects the institutional dimension of the challenge and the critical enabling role of regulatory frameworks in equalising forensic accounting capacity across different-sized institutions.

4.7 Discussion of Findings

The finding that forensic audit investigations and digital transaction tracking are the most widely adopted tools aligns with international evidence. Onamusi et al. (2024) found that advanced analytical tools including data mining and digital tracking significantly enhance fraud prevention capability in Nigerian deposit money banks. Similarly, Adegbayibi (2025) identified forensic analytics and forensic review as key tools that meaningfully improve fraud management capacity in banking institutions. The predominance of traditional forensic audits in Bindura is consistent with findings by Madzivire et al. (2020), who noted that forensic auditing remains the most institutionally embedded practice in Zimbabwe's financial sector, even where newer tools are available.

The lower usage of Benford's Law can be linked to the skills gap identified by Mavhiki and Kahiya (2018), who observed that most Zimbabwean bank auditors lack advanced forensic capabilities. This finding is also supported by the Fraud Triangle Theory (Cressey, 1953), which posits that weak detection capacity enlarges the opportunity dimension of fraud, when specialised tools are underutilised, fraudsters are more likely to find gaps in monitoring systems. The study therefore confirms that while Bindura banks have established a reasonable forensic accounting toolkit, the full range of available instruments remains underexploited due to knowledge and resource limitations.

The high effectiveness ratings for forensic audit investigations and digital tracking tools corroborate findings across several comparable studies. Hassan et al. (2023) found that forensic accounting tools, particularly when combined with complementary mechanisms such as generalised audit software and whistleblower systems, generate significant fraud deterrence outcomes in Indonesia. Abdulrahman (2022) confirmed that forensic accounting tools made a significantly positive contribution to fraud control in UAE commercial banks, particularly where CAATs were routinely used.

The moderate effectiveness rating for Benford's Law (Mean = 3.5) aligns with Hashem et al. (2024), who found that specialised forensic techniques delivered useful fraud detection outcomes but were constrained by resource limitations and training deficits in developing country contexts such as Syria. The disparity between detection effectiveness and prevention effectiveness noted among Bindura respondents echoes observations by Madzivire et al. (2020), who found that forensic auditing in Zimbabwe's accounting firms was stronger at identifying existing fraud than at preventing new occurrences.

From a theoretical standpoint, these findings are well explained by Agency Theory (Jensen and Meckling, 1976). Forensic accounting tools function as monitoring mechanisms that reduce the information asymmetry between bank management (agents) and shareholders and regulators (principals). The finding that tool effectiveness is moderated by management responsiveness is consistent with Agency Theory's premise that monitoring mechanisms are only effective when principals have the authority and willingness to enforce accountability. As Singleton and Singleton (2010) note, forensic accountants can identify and review transactions, but corrective action depends on institutional commitment at the governance level.

The prominence of financial and technological barriers in Bindura is consistent with findings from multiple developing economy contexts. AlAbbadi et al. (2021) identified insufficient technological infrastructure and the absence of accumulated forensic knowledge as major impediments to forensic accounting adoption in Jordan's banking sector. Anakwue (2024) similarly found that inadequate legislation, limited financing, and poor coordination among stakeholders are systemic barriers in Nigeria. Bhasin (2016) specifically noted that the financial cost of computerised auditing tools and AI-integrated fraud detection platforms disproportionately constrains banks in developing countries.

The finding that resistance from staff and management (SD = 1.14) had higher variability than financial barriers is consistent with Rezaee (2002), who observed that organisational resistance tends to be culturally determined and therefore less uniform than resource constraints. In Bindura, Nhamo (2019) similarly identified cases where banking staff resisted forensic audit processes, echoing this study's findings. The regulatory gap confirmed by respondents aligns with the observation of the Reserve Bank of Zimbabwe (2020) that existing regulations have not kept pace with the complexity of modern financial crimes, leaving forensic accounting adoption to the discretion of individual institutions.

From a Fraud Triangle Theory perspective (Cressey, 1953), these challenges are particularly concerning because resource and skills gaps directly enlarge the opportunity dimension of the fraud triangle. When banks lack both the tools and the trained personnel to deploy them effectively, they create spaces that fraudsters can exploit. Muponde (2018) made a similar observation, arguing that weak supervisory oversight in towns such as Bindura compounds the vulnerability created by resource limitations.

The overwhelming endorsement of continuous staff training aligns with Barac and Du Plessis (2014), who identified a serious shortage of trained forensic accountants in South Africa and recommended a strategic shift toward proactive forensic monitoring supported by dedicated university curricula and structured career pathways. Singleton and Singleton (2010) similarly assert that effective fraud detection depends fundamentally on having personnel who know how to identify it. The call for mandatory regulatory standards echoes Khaleduzzaman and Hera (2024), who found that government incentives and regulatory frameworks were the two most significant determinants of forensic accounting adoption in Bangladesh, emphasising that voluntary adoption in the absence of regulatory compulsion consistently leaves smaller and under-resourced institutions behind.

The endorsement of integration into risk management frameworks is supported by Johansson et al. (2020), who demonstrated that the integration of real-time transaction monitoring, predictive algorithms, and risk scoring into the broader risk management systems of Scandinavian banks significantly increased fraud detection efficiency. Rezaee and Wang (2019) further recommend extending forensic analytics from detection to prediction through cross-disciplinary collaboration

among forensic accountants, data scientists, and risk managers, an approach that mirrors the collaborative strategies endorsed by Bindura respondents.

From an Agency Theory perspective (Jensen and Meckling, 1976), the recommended strategies collectively function to strengthen the monitoring mechanisms available to principals. By improving staff competence, establishing clearer regulatory frameworks, and embedding forensic tools within risk management structures, banks reduce the information asymmetry that enables agents to engage in fraud undetected. As Bhasin (2016) suggests, building a forensic accounting culture, where transparency and accountability are organisationally embedded, is ultimately more sustainable than deploying individual tools without institutional backing.

4.7 Chapter Summary

This chapter presented, analysed, and discussed data from 45 respondents across compliance, internal audit, branch management, and accounting functions in Bindura banks, integrating quantitative and qualitative findings across four research objectives. Banks in Bindura predominantly use forensic audit investigations (92%), digital transaction tracking (87%), and fraud risk profiling (83%), with Benford's Law (58%) least adopted. Forensic audit investigations (Mean = 4.5) and digital transaction tracking (Mean = 4.4) were rated most effective, though perceived effectiveness in reducing financial losses was comparatively weaker. Inadequate financial resources (92%) and limited technological capacity (88%) were the dominant implementation challenges. Continuous staff training (95%), strengthened regulatory policies (88%), and integration into risk management frameworks (84%) were the most endorsed strategies. Overall, significant gaps in skills, resources, and regulatory support continue to limit forensic accounting's full fraud prevention potential in Bindura's banking sector.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter is a summary of what the research found, drawing conclusions from all the data collected, and providing practical recommendations to enhance the use of forensic accounting to detect and prevent fraud in Bindura's banking industry. This chapter revisits the purpose of conducting the research, links all the evidence collected to the theories, and emphasizes forensic accounting as a strategic tool to minimize fraud risk.

5.1 Summary

With regard to the first research question concerning the forensic accounting techniques utilised in Bindura Town banks, the study established that banks employed a diverse range of tools spanning both traditional and technology-driven approaches. Forensic audit investigations were the most widely used tool, reported by 92% of respondents, followed by digital transaction tracking at 87% and fraud risk profiling at 83%. Data mining and analytics software were utilised by 80% of respondents, while Computer-Assisted Audit Techniques (CAATs) were employed by approximately 75% of participants. Benford's Law analysis recorded the lowest adoption rate at 58%, suggesting limited technical proficiency in statistical fraud detection methods among banking staff in Bindura. These findings confirmed that while multiple forensic accounting tools were in use, advanced predictive and artificial intelligence-driven technologies remained largely absent from the forensic accounting practices of banks in the study area.

Regarding the second research question on the effectiveness of forensic accounting techniques in detecting and preventing fraud, the study found that forensic audit investigations and digital transaction tracking were rated most effective, each recording a mean score of 4.5 out of 5, with standard deviations of 0.71 and 0.76 respectively, indicating strong consensus among respondents. An overwhelming 84% of participants either agreed or strongly agreed that forensic accounting tools contributed to the early detection of fraud, while 92% rated forensic audits as essential in identifying suspicious financial patterns. However, the effectiveness of Benford's Law analysis and data matching recorded moderate mean scores of 3.5 and 3.8 respectively, reflecting knowledge gaps. Notably, the mean score for reducing financial losses caused by fraud was lower at 3.7 with a higher standard deviation of 1.09, indicating that while respondents recognised the detection capability of forensic tools, their preventive capacity remained underutilised across Bindura banks.

On the third research question concerning the challenges encountered in implementing forensic accounting, the study identified financial and technological constraints as the most pervasive barriers. Inadequate financial resources were cited by 92% of respondents as the leading challenge, recording a mean impact score of 4.4, while limited access to forensic technology and software was identified by 88% of participants with a mean of 4.2. Resistance from staff and management was noted by 67% of respondents, recording a mean of 3.9 and a relatively high standard deviation of 1.14, suggesting that this challenge varied considerably across institutions depending on

organisational culture. Additional challenges included limited awareness of forensic accounting benefits, identified by 65% of respondents with the highest variability recorded at a standard deviation of 1.18, alongside a lack of trained forensic accountants cited by 60% of participants. These findings collectively demonstrated that implementation challenges in Bindura banks were deeply embedded across financial, technological, and organisational dimensions simultaneously.

With respect to the fourth research question on strategies to improve the effectiveness of forensic accounting, the study found strong consensus among respondents regarding the priority interventions required. Continuous staff training and development emerged as the highest-rated strategy, with 95% of respondents identifying it as critical and a mean score of 4.6 with a standard deviation of 0.72, indicating near-unanimous agreement on its importance. Strengthening regulatory policies was identified by 88% of respondents with a mean of 4.4, while integration of forensic tools into risk management frameworks was supported by 85% of participants at a mean of 4.2. Collaboration with external forensic specialists was endorsed by 80% of respondents, and investment in modern forensic accounting software recorded a mean of 4.0. The consistently low standard deviations across all recommended strategies, ranging from 0.72 to 0.95, indicated broad institutional agreement on the need for a comprehensive, multi-pronged approach combining human capital development, regulatory strengthening, and technological investment to meaningfully improve forensic accounting effectiveness in Bindura's banking sector.

5.2 Conclusions

The study concluded that banks in Bindura employed a reasonable variety of forensic accounting tools, ranging from forensic audit investigations to digital transaction tracking and Computer-Assisted Audit Techniques, demonstrating a foundational awareness of forensic accounting as a fraud management strategy. However, the notably low adoption rate of advanced tools such as Benford's Law analysis at 58% and the virtual absence of artificial intelligence-driven predictive analytics revealed a significant technological gap between the forensic accounting practices of Bindura banks and international best practice standards. The findings confirmed that forensic accounting tool adoption in Bindura remained predominantly oriented towards traditional investigative approaches rather than proactive, technology-enabled fraud prevention. This pattern is consistent with the Fraud Triangle Theory, wherein the persistence of opportunity as a fraud

enabler can be directly attributed to the insufficient deployment of sophisticated detection mechanisms capable of identifying anomalies before fraudulent schemes materialise and cause financial harm to institutions and their customers.

The study further concluded that while forensic accounting tools demonstrated meaningful effectiveness in detecting fraud within Bindura banks, their preventive capacity remained considerably underdeveloped. The high mean effectiveness ratings recorded for forensic audit investigations and digital transaction tracking at 4.5 each confirmed that these tools were valued and performing well in their investigative roles. However, the comparatively lower mean score of 3.7 for reducing financial losses caused by fraud, accompanied by the highest standard deviation of 1.09 among all effectiveness measures, indicated that the application of forensic tools was largely reactive rather than preventive in orientation. This finding aligns with Agency Theory, which posits that information asymmetry between principals and agents creates conditions conducive to fraudulent conduct when monitoring mechanisms are insufficiently robust and forward-looking, suggesting that Bindura banks had not yet fully leveraged forensic accounting as a proactive governance and risk management instrument.

The study concluded that the implementation of forensic accounting in Bindura banks was severely constrained by an interlocking set of financial, technological, and organisational challenges that collectively undermined the sector's capacity to manage fraud effectively. The identification of inadequate financial resources by 92% of respondents as the primary barrier, alongside limited access to forensic technology by 88% of participants, confirmed that resource scarcity represented the most critical structural impediment to meaningful forensic accounting adoption in the region. Furthermore, the considerable variability in responses regarding staff resistance and limited awareness of forensic accounting benefits, reflected in standard deviations of 1.14 and 1.18 respectively, indicated that organisational culture and institutional commitment to forensic accounting differed substantially across the four participating banks. These findings demonstrated that the challenges confronting Bindura banks were not merely technical in nature but were deeply embedded in the broader institutional environment, requiring systemic rather than piecemeal interventions to achieve sustainable improvement.

The study ultimately concluded that the effective strengthening of forensic accounting practices in Bindura's banking sector required a comprehensive, coordinated strategy integrating human capital

development, regulatory reform, and technological investment simultaneously. The near-unanimous endorsement of continuous staff training as the highest-priority strategy, with a mean score of 4.6 and a standard deviation of 0.72, underscored the centrality of skilled personnel in translating forensic accounting tools from theoretical instruments into practically effective fraud management mechanisms. The strong support for regulatory strengthening at a mean of 4.4 further indicated that respondents recognised the limitations of voluntary adoption, affirming the necessity of mandatory compliance frameworks enforced by the Reserve Bank of Zimbabwe to drive sector-wide implementation. Taken together, the findings of this study reinforced the position that forensic accounting holds substantial potential as a fraud prevention and detection strategy within Bindura banks, but that this potential would only be fully realised through sustained institutional commitment, adequate resource allocation, and a deliberate cultural shift towards proactive rather than reactive fraud governance across the sector.□□□□

5.4 Recommendations

The use of the latest forensic accounting technologies is critical to consider. The banks should incorporate AI fraud detection technologies, data mining techniques, predictive analysis models, and transaction monitoring mechanisms. The banks should make strategic plans to finance this project together with the Reserve Bank of Zimbabwe. This would enable the banks to change the current reactive strategy of conducting audits to a proactive strategy to prevent fraud. Through this initiative, the banks would attain global best practices in preventing fraud. In other neighboring nations, the application of such strategies has enabled them to cut down their loses.

Professional training and development are critical for enhancing the skills of staff members. The training and development units of the banks in cooperation with ICAZ should organize professional development programs. This will make the employees gain the necessary skills in forensic accounting, making it easier for the banks to gain effectiveness in prevention and detection of frauds.

Regulatory measures need to be enhanced such that all the banks, especially the provincial ones, are made to establish good forensic accounting departments. The Reserve Bank of Zimbabwe

should make sure that the forensic accounting measures are incorporated in their daily activities by rewarding the banks, which abide by the measures, and making the banking institutions more accountable. Forensic accounting can therefore move from being simply compliance-oriented to becoming part and parcel of the day-to-day activities of banking institutions.

Cooperation needs to be encouraged among banking institutions, sharing of ideas, knowledge wherever possible. Conferences on forensic accounting, workshops, and fraud investigation teams would allow us to learn more regarding the developments in the field of fraud in banks and forensic accounting practices. This is evident in Southern Africa, where cooperation has been shown to increase fraud detections, minimize banking risks, and ensure a learning environment.

It is important to improve the monitoring role of banking institutions' board members and managers in forensic accounting. There is a need for a culture of accountability, which should be fostered through the full commitment of the management towards the strategic objectives, such that forensic accounting becomes a real driver of fraud detection and prevention.

Last but not least, there is a need for forensic accounting to become an integral part of the organizational risk management strategy. This will happen through harmonizing forensic accounting techniques with the everyday controls, internal auditing, as well as compliance checks. Through doing so, there will be improved coordination, more advanced real-time monitoring, and a more advanced fraud management strategy. Ultimately, there will be higher chances of gaining more from fraud detection as well as prevention.

5.5 Limitations

The study took place in Bindura, and thus, its applicability to other financial institutions, especially those located in urban areas, may be relatively restricted. Notwithstanding the limitations, it is important to mention that the chances of having self-response biases are relatively low, considering the adoption of questionnaire research and, to some extent, purposive sampling strategies. Moreover, owing to the time and resource constraints, the sample size was relatively small; yet, it is important to mention that the respondents were key operational staff who had first-hand knowledge.

5.6 Suggestions for Future Research

Future research should involve a wider range of banks both in cities and villages and should adopt a longitudinal approach to understand the trend. Further, more advanced technology such as the blockchain and artificial intelligence needs to be considered for fraud detection. Conducting comparative analysis between Southern African countries would help in identifying best practices followed in each country. Qualitative analysis may address some of the behavioral and cultural aspects involved in the adoption of forensic accounting.

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APPENDICES

APPENDIX A: CONSENT FORM

Bindura University of Science Education

Faculty of Commerce

Department of Financial Intelligence and Security Studies

Date: _____

Dear Participant

RE: REQUEST FOR CONSENT TO PARTICIPATE IN AN ACADEMIC INTERVIEW

I am Darlington Shoko, a Financial Intelligence student at Bindura University of Science Education (BUSE). I am currently conducting an academic study titled "The Effectiveness of Forensic Accounting Tools in Detecting and Preventing Fraud in Banks Operating in Bindura Town." This research is being carried out in partial fulfilment of the requirements for my degree programme and has been authorised by my institution as well as your organisation.

I kindly request your consent to participate in an interview for this study. The interview aims to gather professional insights based on your experience in the banking sector, particularly on the use, effectiveness, challenges, and improvement of forensic accounting tools in fraud detection and prevention.

Your participation in this study is entirely voluntary. You are free to decline to answer any question or to withdraw from the interview at any stage without any penalty or consequence. All information provided will be treated with strict confidentiality and will be used solely for academic purposes. Neither your name nor the name of your organisation will appear in the final research report.

The interview is expected to take approximately _____ minutes and will be conducted at a time and place convenient to you.

If you agree to participate, please indicate your consent by signing below.

Thank you for your time and cooperation.

Yours faithfully,

Darlington Shoko

Financial Intelligence Student

Bindura University of Science Education

CONSENT

I confirm that I have read and understood the information provided above and voluntarily agree to participate in this interview.

Participant's Name: _____

Signature: _____

Date: _____

APPENDIX B: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION

This section seeks to obtain background information of respondents. The information provided will be used strictly for academic purposes. Kindly tick (✓) the appropriate option.

1. Gender:

   ☐ Male ☐ Female

2. Age Group:

   ☐ 20–25 years ☐ 26–30 years ☐ 31–40 years

   ☐ 41–45 years ☐ 45 years and above

3. Department:

   ☐ Accounting ☐ Auditing / Internal Controls ☐ Compliance

4. Years of Experience in the Banking Sector:

   ☐ Below 2 years ☐ 2–5 years

   ☐ 6–10 years ☐ Above 10 years

5. Highest Academic Qualification:

6. ☐ Diploma ☐ Degree ☐ Master's ☐ Professional Certificate

SECTION B: AWARENESS OF FORENSIC ACCOUNTING TOOLS

This section seeks to assess respondents' awareness, familiarity, and exposure to forensic accounting tools and techniques used in the bank. Kindly tick (✓) the option that best represents your response.

7. Level of Familiarity with Forensic Accounting Tools or Techniques

   How familiar are you with forensic accounting tools or techniques used to detect, prevent or investigate financial fraud within the banking sector?

   ☐ Very familiar ☐ Somewhat familiar

   ☐ Not very familiar ☐ Not familiar at all

8. Forensic Accounting Tools and Techniques Used in the Bank

   Which of the following forensic accounting tools and techniques are utilized in your bank? (Tick all that apply)

   ☐ Forensic audit investigations

   ☐ Data mining and analytics software

   ☐ Benford's Law analysis for detecting anomalies

☐ Digital tracking and monitoring of transactions

☐ Fraud risk profiling and assessment tools

☐ Computer-Assisted Audit Techniques (CAATs)

☐ Data matching and variance analys

☐ Others (please specify): _____

SECTION B1: EFFECTIVENESS OF FORENSIC ACCOUNTING TOOLS AND TECHNIQUES

This section seeks to assess respondents' perceptions of the effectiveness of various forensic accounting tools and techniques in detecting, preventing, and investigating fraud within the banking sector. Kindly indicate the extent to which you consider each tool or technique to be effective by ticking (✓) the appropriate option.

1 = Not effective at all. 2 = Slightly effective. 3 = Moderately effective. 4 = Effective

5 = Very effective

Forensic Tool / Technique	1	2	3	4	5
Forensic audit investigations					
Data mining & analytics software					
Benford's Law analysis					
Digital tracking of transactions					
Fraud risk profiling					
Computer-Assisted Audit Techniques (CAATs)					
Data matching & variance analysis					

SECTION C: EFFECTIVENESS OF FORENSIC ACCOUNTING TOOLS

The following statements are intended to assess the effectiveness of forensic accounting tools and techniques in enhancing fraud detection, prevention, and control within the banking sector. Please indicate the extent to which you agree with each statement based on your experience or knowledge by ticking (✓) the appropriate option.

1 = Strongly disagree. 2 = Disagree. 3 = Neutral. 4 = Agree. 5 = Strongly agree

Effectiveness Statement	1	2	3	4	5
Forensic accounting tools help in early detection of fraud.					
8. Forensic accounting techniques improve accuracy in identifying fraudulent activities.					
9. Forensic accounting techniques strengthen internal control systems within the bank.					
10. The use of forensic accounting tools reduces financial losses caused by fraud.					
11. Forensic accounting investigations enhance decision-making in fraud-related cases.					
12. Forensic accounting practices improve transparency and accountability within the bank.					

SECTION D: CHALLENGES IN IMPLEMENTATION FORENSIC ACCOUNTING TOOLS

(Tick all that apply)

Below are some of the challenges that may undermine adoption of forensic accounting tools in banks. Please select all challenges you think undermine adopton of forensic accounting tools in your bank.(Select all that apply)

☐ Lack of trained forensic accountants

☐ Inadequate financial resources

☐ Limited forensic technology/software

☐ Weak regulatory support

☐ Resistance from staff or management

☐ Insufficient management commitment

☐ High implementation or training costs

☐ Limited awareness of benefits of forensic accounting

D2. LIKERT SCALE FOR CHALLENGES

Rate the extent to which each challenge affects adoption:

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

Challenge Statement					
13. Lack of trained forensic accountants limits adoption.					
14. Inadequate financial resources hinder implementation of forensic tools.					
15. Limited technological capacity affects implementation.					
16. Weak regulatory support discourages adoption of forensic tools.					
17. Staff or management resistance reduces adoption.					
18. High training and implementation costs delay adoption.					
19. Limited awareness of forensic accounting benefits slows adoption.					

SECTION E: STRATEGIES TO ENHANCE EFFECTIVENESS AND ADOPTION OF FORENSIC ACCOUNTING TOOLS

This section seeks to identify strategies that respondents believe can enhance the effectiveness and adoption of forensic accounting tools and techniques within the banking sector. Kindly tick (✓) all the strategies that you think would help achieve this.

☐ Banks should invest in modern forensic accounting software.

☐ Continuous staff training in forensic accounting should be prioritised.

☐ Regulatory bodies should strengthen policies and guidelines supporting the use of forensic accounting.

☐ Banks should integrate forensic accounting tools and techniques into their risk management frameworks.

☐ Collaboration with external forensic accounting specialists should be enhanced.

☐ Banks should promote an organisational culture that supports the adoption of new technologies.

☐ Banks should allocate sufficient budgets for forensic accounting tools and related training.

☐ Others (please specify): _____

APPENDIX C: INTERVIEW GUIDE

Consent Statement

Thank you for agreeing to take part in this interview. My name is Darlington Shoko, and I am a Financial Intelligence student at Bindura University of Science Education (BUSE). I am conducting an academic study on the effectiveness of forensic accounting tools in detecting and preventing fraud in banks operating in Bindura Town.

The purpose of this interview is to gather insights based on your professional knowledge and experience in the banking sector. Your participation in this study is entirely voluntary. You are free to decline to answer any question or to withdraw from the interview at any stage without any consequences.

All information provided during this interview will be treated with strict confidentiality and will be used solely for academic purposes. The names of participants and their respective banks will not be disclosed in the final report. Your responses will be anonymised and handled in accordance with ethical research standards.

By participating in this interview, you indicate your informed consent to take part in the study.

MAIN INTERVIEW QUESTION

1. What forensic accounting tools or techniques are currently used in your bank to detect or investigate fraud?
2. How are these forensic accounting tools integrated into your bank's daily operations?
3. How effective are the forensic accounting tools used in your bank in detecting fraudulent activities?
4. Can you describe a situation where forensic accounting tools helped in identifying or preventing fraud?
5. What major challenges does your bank face in implementing forensic accounting tools or systems?
6. How do these challenges affect the effectiveness of forensic accounting in combating fraud?
7. What strategies do you think can improve the effectiveness of forensic accounting tools in banks?
8. What measures should banks or regulators take to encourage wider adoption of forensic accounting in the banking sector?