



ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

**THE EFFECTIVENESS OF INTERNAL CONTROL SYSTEM IN
DETECTING AND PREVENTING FRAUD IN THE CASE OF
BANK OF ABYSSINIA**

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JUNE, 2024

ADDIS ABABA, ETHIOPIA

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BY

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**A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, SCHOOL OF
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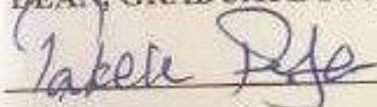
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APPROVED BY BOARD OF EXAMINERS

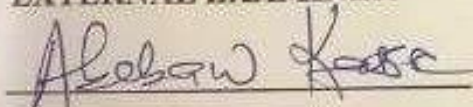
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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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June, 2024

ENDORSEMENT

This thesis has been submitted to Addis Ababa University, School of Graduate Studies for examination with my approval as a university advisor.

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June, 2024

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Table of Contents

DECLARATION.....	i
ENDORSEMENT.....	iii
ACKNOWLEDGEMENTS.....	iv
ABSTRACT.....	x
CHAPTER ONE.....	11
INTRODUCTION	11
1.1. Background of the study	11
1.1.1. Internal control system.....	11
1.1.2. Fraud Detection and Prevention.....	12
1.1.3. Bank of Abyssinia	13
1.2. Statement of the Problem	13
1.3. Research Questions	15
1.4. Objective of the Study.....	15
1.4.1. General Objective	15
1.4.2. Specific Objectives	15
1.5. Significance of the Study	15
1.6. Scope of the Study.....	15
1.7. Organization of the Study	16
CHAPTER TWO	18
REVIEW OF RELATED LITERATURE	18
2.1. Conceptual Review	18
2.1.1. Fraud	22
2.1.2. Classification of Fraud.....	24
2.1.3. Types of Fraud Prevalent in the Banking Industry	25

2.1.4.	Internal Control System	18
2.1.5.	Fraud Detection and Prevention.....	26
2.2.	Theoretical Framework.	Error! Bookmark not defined.
2.2.1.	Systems Theory.....	Error! Bookmark not defined.
2.2.2.	The Fraud Triangle Theory (FTT)	Error! Bookmark not defined.
2.2.3.	The Fraud Diamond Philosophy	Error! Bookmark not defined.
2.3.	Empirical Review	Error! Bookmark not defined.
2.3.1.	The Effect of Control Environment on Fraud Detection and Prevention	Error! Bookmark not defined.
2.3.2.	The Effect of Risk Assessment on Fraud Detection and Prevention	Error! Bookmark not defined.
2.3.3.	The Effect of Control Activity on Fraud Detection and Prevention	Error! Bookmark not defined.
2.3.4.	The Effect of Information and Communication on Fraud Detection and Prevention	Error! Bookmark not defined.
2.3.5.	The Effect of Monitoring Activity on Fraud Detection and Prevention	Error! Bookmark not defined.
2.4.	Summary	Error! Bookmark not defined.
2.5.	Research Gap.....	34
2.6.	Conceptual Framework	35
2.7.	Research Hypothesis	Error! Bookmark not defined.
CHAPTER THREE		38
RESEARCH METHODOLOGY.....		38
3.1.	Research Design.....	38
3.2.	Research Approach.....	38
3.3.	Sources of Data	38

3.4. Sampling Design	Error! Bookmark not defined.
3.4.1. Target Population	39
3.4.2. Sample Size Determination.....	39
3.4.3. Sampling Technique.....	40
3.5. Instrumentation and Data Collection.....	40
3.6. Validity and Reliability of Instruments	40
3.6.1. Validity	40
3.6.2. Reliability.....	41
3.7. Data Analysis and Presentation	42
3.8. Model Specification	42
3.9. Ethical Consideration	43
CHAPTER FOUR.....	44
DATA ANALYSIS AND INTERPRETATION.....	44
4.1. Introduction	Error! Bookmark not defined.
4.2. Descriptive statistics of the level of agreement of the respondent's Perception towards different variables of the research.....	Error! Bookmark not defined.
4.2.1. Fraud Risk Assessment	46
4.2.2. Information and Communication.....	47
4.2.3. Control Activities	48
4.2.4. Control Environment	50
4.2.5. Monitoring	52
4.2.6. Fraud Prevention and Detection.....	53
4.3. Inferential Statistics.....	55
4.3.1. Correlation Analysis.....	55
4.3.2. Assumptions Testing in Multiple Regression	60

4.3.3. Model Summary.....	67
4.3.4. Analysis of Variance (ANOVA).....	68
4.3.5. Regression Coefficients	69
CHAPTER FIVE	78
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS	78
5.1. Summary of Findings	78
5.2. Conclusion.....	79
5.3. Recommendations	80
REFERENCES	Error! Bookmark not defined.

List of Tables

Table 1: Cronbach Alpha Test	41
Table 2: Descriptive Statistics Result for Fraud Risk Assessment	46
Table 3: Descriptive Statistics Result for Information and Communication	47
Table 4: Descriptive Statistics Result for Control Activities	48
Table 5: Descriptive Statistics Result for Control Environment.....	50
Table 6: Descriptive Statistics Result for Monitoring.....	52
Table 7: Descriptive Statistics Result for Fraud Prevention and Detection.....	53
Table 8. Classification of Correlation Coefficient Result	55
Table 9: Correlation Matrix	55
Table 10. Collinearity Statistics	61
Table 11. Skewness and Kurtosis.....	63
Table 12. Model Summary.....	67
Table 13. ANOVA Table	68
Table 14: Regression Coefficient.....	70

List of Figures

Figure 1: Conceptual Framework of the Study.....	37
Figure 2: Histogram Plot of Regression Standardized Residual.....	63
Figure 3. Normal p-p plot of Regression Standardized Residual	65
Figure 4. Scatterplot of Standardized Residuals	66

ABSTRACT

This study investigates the effectiveness of internal control systems in detecting and preventing fraud within Bank of Abyssinia, a leading private bank in Ethiopia. Drawing on an explanatory research design, the study employs quantitative methods to explore cause-and-effect relationships among key variables: control environment, risk assessment, control activities, information and communication, and monitoring. The research focuses on a target population of 273 permanent employees directly involved in internal control functions. Using convenience sampling, 162 respondents were selected, reflecting a sample size determined by Slovin's formula. Data was primarily collected through structured questionnaires utilizing Likert scales validated through content validity and tested for reliability using Cronbach's alpha coefficients. Statistical Package for the Social Sciences (SPSS) version 23.0 facilitated data analysis employing descriptive statistics, multiple regression analysis, and t-tests to examine relationships and validate the research model. The regression model reveals an R-squared value of 0.764, indicating that approximately 76.4% of the variability in fraud prevention and detection is explained by the independent variables. The adjusted R-squared value and standard error of the estimate suggest good fit and relatively accurate predictions by the model. The analysis of variance (ANOVA) yields an F-statistic with a significance level of 0.000, confirming the overall significance of the regression model. Additionally, the Durbin-Watson statistic supports the independence of residuals. The findings highlight the significant impact of a robust control environment, effective communication, and comprehensive risk assessment on fraud detection and prevention. Control activities and monitoring were also identified as critical in mitigating fraud risks. The study underscores the importance of continuous improvement and adaptation in internal control practices to address evolving fraud threats effectively. Based on the results, the study recommends advocating implementing robust internal control systems at Bank of Abyssinia to effectively mitigate fraud risks. Recommendations include integrating stakeholder feedback, training for auditors and accountants, and proactive monitoring by boards of directors. Ongoing, independent evaluation of internal controls by the governing body and audit committee is crucial for transparency and accountability.

.Key Words: internal control, fraud detection and prevention. control environment, risk assessment, control activities, information and communication, and monitoring, fraud management, Bank of Abyssinia

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

1.1.1. Internal control system

Internal control systems (ICS) are fundamental to ensuring an organization achieves its objectives. Recent studies emphasize the expanding role of ICS beyond traditional financial reporting to encompass operational effectiveness, compliance, and risk management. This elaboration explores the evolving landscape of ICS, drawing on current research. A 2022 study by the Association of Chartered Certified Accountants (ACCA) highlights the growing importance of a risk-based approach to ICS (Gramling, Johnstone, & Rittenberg, 2007). This involves identifying and assessing potential threats to achieving objectives, then implementing controls targeted at mitigating those risks. This aligns with prior research by Albrecht et al. (2017) who found that effective ICS design considers the inherent risks associated with various activities (Gramling, Johnstone, & Rittenberg, 2007).

Recent studies call for a broader view of ICS that extends beyond financial controls. (Chu, Chi, Wang, & Luo, 2019) argue that ICS should encompass operational processes to ensure efficiency and adherence to quality standards (Chu, Chi, Wang, & Luo, 2019). This focus on operational effectiveness can lead to improved performance and a competitive advantage. With the ever-changing regulatory environment, ICS play a vital role in ensuring compliance. A 2021 study by Deloitte emphasizes the need for ICS to be adaptable and responsive to new regulations (Deloitte, 2012). This proactive approach helps organizations avoid legal repercussions and reputational damage.

Recent advancements in technology offer opportunities to strengthen ICS. A 2022 research paper by (Klius, Ivchenko, Izhboldina, & Ivchenko, 2020) explores the integration of technology-based controls, such as automated data validation and real-time monitoring, into ICS frameworks (Klius, Ivchenko, Izhboldina, & Ivchenko, 2020). These advancements can enhance the efficiency and effectiveness of controls. While technology plays a significant role, human behavior remains a critical element of ICS. (Longenecker, Moore, & Petty, 2020) emphasize the

importance of a strong ethical culture and employee training in maintaining a robust ICS (Longenecker, Moore, & Petty, 2020). Effective communication and a culture of accountability are essential for fostering employee commitment to upholding internal controls. Internal control systems are no longer limited to financial reporting. By incorporating a risk-based approach, focusing on operational effectiveness, ensuring compliance, leveraging technology, and fostering a strong ethical culture, organizations can leverage ICS to achieve their strategic objectives and navigate the ever-changing business landscape.

1.1.2. Fraud Detection and Prevention

Fraud is a persistent threat across industries, causing significant financial losses and reputational damage. Recent studies highlight the evolving landscape of fraud detection and prevention, emphasizing the need for a multi-layered approach that leverages technology, human expertise, and a strong internal control environment. The digital revolution has created fertile ground for fraudsters. A 2023 study by PwC reports a surge in cybercrime and online fraud schemes, with social engineering attacks and account takeovers becoming increasingly sophisticated. Organizations must adapt their detection methods to stay ahead of these evolving threats.

Recent research underscores the potential of machine learning (ML) and advanced analytics in fraud detection. A 2022 study by Accenture found that organizations leveraging ML algorithms experienced a significant increase in fraud detection accuracy. These algorithms can analyze vast amounts of data to identify anomalies and suspicious patterns indicative of fraudulent activity. While technology plays a critical role, human expertise is still irreplaceable. A 2021 study by Deloitte emphasizes the importance of combining advanced analytics with skilled fraud investigators (Deloitte, 2012). Human analysts can interpret complex data patterns, identify red flags, and conduct forensic investigations to uncover the true nature of potential fraud.

Traditional reactive approaches focused solely on detecting fraud after it occurs are proving insufficient. A 2018 research paper by Ghosh and Mitra advocates for a proactive stance, emphasizing the importance of continuous monitoring and preventive measure. This includes implementing strong authentication protocols, educating employees on fraud awareness, and fostering a culture of ethical behavior. Recent studies highlight the synergy between fraud detection and prevention efforts and robust internal control systems (ICS). A 2022 study by the Association of Certified Fraud Examiners (ACFE) found that organizations with a well-designed

ICS experienced significantly lower fraud losses in which an effective ICS can deter fraudulent activities by establishing clear guidelines, segregation of duties, and regular audits.

Fraud detection and prevention is a dynamic process demanding continuous adaptation. By leveraging technology like machine learning, maintaining skilled human expertise, implementing proactive measures, and fostering a strong internal control environment, organizations can effectively combat fraud and safeguard their financial well-being.

1.1.3. Bank of Abyssinia

The Bank of Abyssinia, established on February 15, 1996, has grown significantly from its initial authorized capital of Birr 50 million and paid-up capital of Birr 17.8 million to become a cornerstone of Ethiopia's banking sector. With a vast network of 864 branches serving over 10.2 million customers, the bank leverages advanced banking technology to provide exceptional domestic, international, and specialized banking services.

To ensure operational effectiveness and sustainability, the Bank of Abyssinia has implemented a robust internal control system. This system is essential for managing the complex organization, which is divided into various subsystems such as units, divisions, and departments. The internal control system includes interrelated components, supporting principles, and attributes that collectively aim to achieve the bank's organizational goals while mitigating risks. Internal control at the Bank of Abyssinia involves a continuous review of operations and records by specially assigned staff to ensure adherence to management policies, safeguard assets, and maintain the completeness and accuracy of records. This system is designed to carry out the bank's business in an orderly and efficient manner, promoting operational efficiency and regulatory compliance.

Fraud detection and prevention are critical aspects of the bank's internal control system. Fraud, defined as an act of deception practiced to gain unlawful or unfair advantage, poses a significant threat to financial institutions. The Bank of Abyssinia addresses this threat by implementing comprehensive measures to identify, analyze, and mitigate risks associated with fraud. These measures include the manipulation, falsification, or alteration of documents and records; recording transactions without substance; and the intentional misapplication of accounting policies.

1.2. Statement of the Problem

The Ethiopian banking industry faces significant challenges in implementing effective internal control systems, which are essential for ensuring the reliability, accuracy, and compliance of financial and operational activities. These systems play a crucial role in preventing and detecting fraud by minimizing opportunities, motivations, and rationalizations utilized by fraudsters. The key components of internal control systems include the control environment, risk assessment, control activities, information and communication, and monitoring (Fikru, 2022).

However, the implementation of internal control systems in the Ethiopian banking industry, particularly in private banks like Bank of Abyssinia, is confronted with various challenges. These challenges encompass collusion between internal or external parties, human judgment under pressure, system errors, management overrides, and breakdowns (Fikru, 2022). These challenges significantly impact the effectiveness of internal control systems in detecting and preventing fraud within Bank of Abyssinia. One of the major concerns faced by the banking sector in Ethiopia is the increasing incidence of fraud, which not only poses financial risks but also undermines the profitability and reputation of banks. Therefore, there is an urgent need to thoroughly examine the effectiveness of the internal control system in detecting and preventing fraud within Bank of Abyssinia, as it is one of the leading private banks in the country.

While previous studies have predominantly focused on the internal control systems of public banks, such as Commercial Bank of Ethiopia (Girma, 2022) and Development Bank of Ethiopia (MULUGETA, 2021), there exists a notable research gap when it comes to private banks, particularly Bank of Abyssinia. Thus, this study aims to address this gap by thoroughly investigating the effectiveness of the internal control system in detecting and preventing fraud within Bank of Abyssinia.

The research involves a comprehensive assessment of the current internal control system, identification of any weaknesses or gaps, and the proposal of recommendations to enhance its effectiveness in fraud detection and prevention. By bridging this gap in empirical evidence, the findings of this study will contribute to the existing knowledge on internal control systems within the Ethiopian banking industry. Furthermore, the study will provide valuable insights into the unique challenges faced by private banks, offering practical implications for improving fraud.

1.3. Research Questions

1. What is the effect of control environment on effective fraud detection and prevention in Bank of Abyssinia
2. What is the effect of risk assessment on effective fraud detection and prevention in Bank of Abyssinia
3. What is the effect of control activities on effective fraud detection and prevention in Bank of Abyssinia
4. What is the effect of information and communication on effective fraud detection and prevention in Bank of Abyssinia
5. What is the effect of monitoring on effective fraud detection and prevention in Bank of Abyssinia

1.4. Objective of the Study

1.4.1. General Objective

The overall objective of the study was to examine the effectiveness of internal control system in detecting and preventing fraud in the case of bank of Abyssinia.

1.4.2. Specific Objectives

1. To examine the effect of control environment on effective fraud detection and prevention in Bank of Abyssinia
2. To investigate the effect of risk assessment on effective fraud detection and prevention in Bank of Abyssinia
3. To assess the effect of control activities on effective fraud detection and prevention in Bank of Abyssinia
4. To examine the effect of information and communication on effective fraud detection and prevention in Bank of Abyssinia
5. To assess the effect of monitoring on effective fraud detection and prevention in Bank of Abyssinia

1.5. Significance of the Study

Studying the effectiveness of the internal control system in detecting and preventing fraud in Bank of Abyssinia holds significant academic and practical implications.

Scholars can contribute to the existing literature by conducting in-depth research on the effectiveness of internal control systems in the banking sector, specifically focusing on the case of Bank of Abyssinia. This research can provide valuable insights into the challenges and opportunities in fraud detection and prevention within the banking industry.

Additionally, the study enhances Bank of Abyssinia's operational effectiveness by identifying strengths and weaknesses in its internal control system. This allows the bank to proactively strengthen fraud prevention mechanisms, evaluate current measures, pinpoint areas for improvement, and implement strategic enhancements, ultimately fostering a more secure and reliable banking environment.

Furthermore, by integrating with existing literature on internal control systems and fraud prevention, and drawing insights from research on internal audit effectiveness in Ethiopia, the study ensures relevance to broader regulatory and governance contexts within the banking industry.

3.4. Scope of the Study

This research aims to comprehensively investigate and analyze the effectiveness of Bank of Abyssinia's internal control system in detecting and preventing fraud. Specifically, the study focuses on evaluating the internal control systems at the bank's head office, with emphasis on key departments such as Internal Audit, Compliance, Risk Management, Finance and Accounting, and Legal. It will assess the roles, procedures, and technologies employed by these departments to mitigate fraud risks within the organization. The findings and recommendations derived from this study were providing valuable insights into the internal control mechanisms and fraud prevention measures implemented within Bank of Abyssinia.

5.4. Organization of the Study

The research proposal was structured into five chapters. The first chapter was focused on providing an introduction to the topic, while the second chapter was presented a review of related literature specifically addressing the effectiveness of the internal control system in fraud detection and prevention. The third chapter was outlined the proposed methodology for the research, and the fourth chapter was involved the analysis of data, presentation of findings, and

the subsequent discussion. Finally, the fifth chapter was presented the conclusion and recommendations derived from the research proposal.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Conceptual Review

2.1.1. Internal Control System

Internal control systems are fundamental frameworks within organizations designed to ensure the effective management, protection of assets, and promotion of operational efficiency, accuracy, and compliance with laws and regulations (COSO, 2013). These systems serve as guiding processes to achieve organizational goals such as trustworthy financial reporting and regulatory compliance while mitigating risks and providing reasonable assurance in achieving objectives, including fraud prevention, error reduction, and addressing irregularities. According to INTOSAI (2001), internal control is a critical process influenced by management and staff, aimed at managing risks and ensuring the organization fulfills its mission. Effective implementation, evaluation, and monitoring of internal control systems significantly impact financial reporting accuracy, helping to prevent manipulation of reported information, reduce errors, and manage operational risks (Kinney, 2000). The primary purposes of internal control systems include safeguarding assets, detecting and preventing fraud and errors, ensuring compliance with regulations, and enhancing operational effectiveness and efficiency. Organizations benefit from strong internal control systems by improving financial management, reducing losses, and fostering cultures of accountability and transparency. Internal control practices are vital for addressing managerial challenges, enhancing efficiency, safeguarding against misuse, and institutionalizing effective governance within organizations (Molokwu et al., 2010). Understanding the dimensions and relevance of internal control is crucial for effectively achieving organizational objectives and ensuring the robust functioning of these systems. In summary, internal control systems are integral to organizational governance, offering mechanisms to manage risks, enhance operational performance, and ensure compliance with regulations. They play a pivotal role in promoting accountability, transparency, and efficiency within organizations, contributing to their overall success and sustainability.

2.1.2. Objectives and Role of the Internal Control

Internal control serves as a foundational framework within organizations, encompassing a diverse array of plans, methods, policies, and procedures aimed at achieving mission-critical objectives and strategic goals. In the context of the banking sector, these systems are meticulously crafted to uphold fundamental objectives essential to operational integrity. Key focuses include ensuring operational efficiency, maintaining the reliability of financial reporting, achieving compliance with stringent laws and regulations, and adhering to management directives (Committee of Sponsoring Organizations of the Treadway Commission, 1999). The objectives of internal control, as defined by COSO, aim to provide reasonable assurance across pivotal areas such as safeguarding assets for legitimate business purposes, ensuring the accuracy of business information, and achieving compliance with regulatory frameworks (COSO, 1999). It's crucial to recognize that internal control transcends mere procedural oversight; it encompasses strategic decision-making, robust risk management practices, and vigilant performance monitoring by executive leadership and board members. Effective internal control systems not only mitigate risks associated with fraud, errors, and non-compliance but also foster operational efficiency and bolster overall organizational governance. By establishing clear guidelines and controls, internal control ensures that operational activities are aligned with strategic objectives, cultivating a culture of accountability and transparency across the organization. This framework enables efficient resource utilization, proactive risk management, and confidence in the integrity of financial reporting and regulatory adherence (Molokwu et al., 2010).

In essence, internal control systems play a pivotal role in fortifying organizational resilience and sustainability. They provide essential assurance that operations are conducted in adherence to established standards and objectives, facilitating informed decision-making, supporting strategic initiatives, and enabling organizations to adeptly navigate evolving regulatory landscapes and operational complexities. Therefore, internal control represents not merely a procedural framework but a strategic imperative that underpins robust organizational governance and operational excellence.

2.2. Theoretical Framework.

The following theoretical framework will guide this study. The theories discussed are systems theory relating to internal controls as well as fraud triangle theory and fraud diamond theory relating to fraud.

2.2.1. Systems Theory

A system is a complex arrangement of interconnected components that work together to achieve specific objectives. In the context of organizations, these components often include units, divisions, and departments, each playing a crucial role in the overall functioning and survival of the organization. Effective management of these components requires a well-integrated internal control system, consisting of interconnected elements, principles, and operational attributes.

Harvey and Brown (1998) underscore the core components of internal controls as comprising the control environment, accounting systems, and control procedures. These components collectively establish the organizational framework necessary for identifying and managing risks while ensuring operational efficiency and integrity (Harvey & Brown, 1998). According to Grieves (2000), a comprehensive internal control system encompasses management oversight, a strong control culture, risk identification and assessment, robust control activities including segregation of duties, effective information dissemination, and continuous monitoring with prompt corrective measures.

The paper adopts the COSO 1992 integrated internal control framework, developed by the Committee of Sponsoring Organizations (COSO) in response to concerns over fraudulent financial reporting. Originally established by the National Commission on Fraudulent Financial Reporting, COSO has evolved into a leading authority on enterprise risk management, internal control systems, and fraud prevention (Amudo & Inanga, 2009). The COSO framework, as outlined in the 1992 report "Internal Control - Integrated Framework," categorizes an organization's internal control system into five integrated components. These components are designed to be embedded within business processes across the entire entity to help achieve organizational objectives effectively.

2.2.2 Components of internal control system

Internal Control system have five components that must be designed, implemented, and operated together in an integrated manner for the system to be effective. These components are interdependent and work together to establish a strong internal control environment. The five components of an internal control system, as defined are as follows:

Control Environment

The control environment forms the bedrock of an organization's internal control framework, influencing how effectively its personnel understand and implement controls. According to COSO (2011), it encompasses critical aspects such as the integrity, ethical standards, and competence of individuals within the organization, as well as the leadership style and attitudes of management. Clear delegation of authority and responsibility ensures accountability and reduces the risk of mismanagement. Equally important is the oversight and guidance provided by the board of directors, which plays a crucial role in setting strategic objectives, monitoring performance, and ensuring that internal controls align with organizational goals and regulatory requirements. By fostering a culture of integrity, ethical behaviour, competent leadership, and effective governance, organizations strengthen their control environment, enhancing their ability to manage risks, achieve objectives, and maintain stakeholder trust.

Risk Assessment

Risk assessment is a fundamental process within an organization's internal control framework, crucial for identifying and evaluating potential hazards that could impede the achievement of objectives. According to the Institute of Internal Auditors (IIA, 1999), risk assessment involves not only recognizing these risks but also analyzing their likelihood of occurrence, the potential impact they could have, and the organization's tolerance for such risks. Particularly, fraud is identified as an inherent risk that necessitates specific attention and the establishment of anti-fraud programs to foster a robust internal control culture. Effective risk assessment requires the collection and dissemination of relevant risk information throughout the organization, enabling management to make informed decisions and take appropriate actions to mitigate risks (IIA, 1999).

Control Activities

Control activities form a critical component of an organization's internal control system, encompassing various procedures and actions designed to ensure that management directives are carried out effectively. According to COSO (2011), these activities are instrumental in addressing risks that could potentially impede the achievement of the entity's objectives. Control activities, whether automated or manual, serve multiple purposes and operate at various organizational and operational levels. Generally, these activities pertinent to an audit context include policies and procedures related to performance evaluation, information processing, physical security controls, and the segregation of duties. They are implemented to safeguard assets, ensure data integrity, and promote operational efficiency across the organization. Effective control activities not only mitigate risks but also contribute to the overall reliability of financial reporting and compliance with regulatory requirements, thereby supporting the organization's governance and operational effectiveness.

Information and Communication

Information and communication play pivotal roles in the successful implementation of internal controls within organizations. According to Amudo and Inanga (2009), effective communication ensures that management's objectives, the prevailing control environment, risk management activities, and performance metrics are clearly articulated to all stakeholders. This transparency enables stakeholders to understand their roles and responsibilities in achieving organizational goals. Timely and accurate information is crucial as it facilitates informed decision-making based on reliable data. Communication channels must be robust to ensure that relevant information flows efficiently across the organization, empowering management to monitor operations effectively and make strategic adjustments as necessary. By fostering a culture of open communication and ensuring the accessibility of pertinent information, organizations enhance their ability to manage risks, maintain compliance with regulations, and achieve operational excellence.

Monitoring

Monitoring internal controls is a critical aspect of organizational governance and risk management, ensuring the ongoing effectiveness of control measures in dynamic environments.

According to COSO (2011), monitoring involves continuous assessment and periodic evaluations through activities such as self-assessments, peer reviews, and internal audits. These processes enable organizations to verify that internal controls are functioning as intended and are capable of adapting to evolving risks and regulatory requirements. Monitoring internal control systems is crucial for assessing their performance and effectiveness over time. This process involves both ongoing monitoring activities conducted during routine operations and periodic separate evaluations, or a combination of both approaches. Ongoing monitoring is integrated into daily management and supervisory activities, ensuring that controls are consistently applied and adjusted as necessary. It serves to detect issues promptly and verify that controls operate effectively in mitigating risks. Separate evaluations complement ongoing monitoring by providing a more comprehensive review at intervals determined by risk assessments and the effectiveness of ongoing monitoring processes. These evaluations delve deeper into specific control areas, examining their adequacy and responsiveness to changing organizational needs and external requirements. Identified deficiencies or weaknesses in internal controls should be promptly reported upwards through established reporting channels, with significant concerns escalated to top management and the board of directors for appropriate action. The integration of monitoring activities into an organization's operational framework is essential for fostering agility and resilience. As highlighted by the IIA (1999), effective internal controls are not static; they must be embedded within the organization's structure and processes to support strategic initiatives and facilitate responsive actions to emerging risks. This integrated approach enables organizations to proactively manage risks, enhance governance effectiveness, and uphold compliance with regulatory standards. By regularly assessing the performance and relevance of internal controls, organizations can mitigate operational disruptions, safeguard assets, and sustain long-term organizational success.

2.3. COCEPT OF FRAUD

Fraud encompasses a wide array of deceptive practices aimed at illicitly obtaining financial or personal gain, often to the detriment of organizations, stakeholders, or the public. It spans several categories including financial statement fraud, where entities manipulate financial information to deceive investors or regulators, and asset misappropriation, involving the theft or misuse of

organizational resources for personal benefit (Wells, 2017; ACFE, 2020). Corruption and bribery further complicate the landscape, reflecting abuses of authority to gain unfair advantages in business transactions (PwC, 2021). Scholars and experts offer varied definitions of fraud, highlighting its multifaceted nature. Adeyemo (2012) defines fraud as any illegal act involving deceit, concealment, or violation of trust, independent of physical force. Mutesi (2011) characterizes it as premeditated criminal deceit or falsification to gain undue monetary advantage, while Osioma (2013) describes it as employing deceptive means for personal gain over others. The fraud triangle, articulated by Albrecht et al. (2009), posits that fraud typically involves three elements: perceived pressure, opportunity, and rationalization. These elements interact to influence individuals to commit fraudulent acts, despite the presence of internal controls (Albrecht et al., 2010; Rae & Subramaniam, 2008). Understanding these dynamics helps organizations identify vulnerabilities and strengthen preventive measures (Albrecht et al., 2010).

Detection and prevention strategies encompass robust internal controls, such as segregation of duties and regular audits, to mitigate fraud risks (COSO, 2013; Amudo & Inanga, 2009). Monitoring mechanisms, including data analytics and whistleblower hotlines, are essential for detecting anomalies and encouraging reporting of suspicious activities (ACFE, 2020). Fostering an ethical culture within organizations is critical to discouraging fraudulent behavior and promoting transparency (COSO, 2013). Moreover, the psychological and moral dimensions of fraud, including rationalization and justification by perpetrators, underscore the importance of personal integrity and ethical values in fraud prevention (Albrecht et al., 2009; Hillison et al., 1999; Mutua, 2011). By integrating these insights into organizational governance and practices, businesses can effectively mitigate fraud risks, protect their reputation, and maintain stakeholder trust.

2.3.1 Classification of Fraud

Management fraud

Management fraud, as defined by the Association of Certified Fraud Examiners (2019), involves deceptive practices perpetrated by senior executives and top-level managers within an organization. These individuals wield considerable authority over financial reporting and decision-making processes, which they exploit to manipulate financial statements and deceive

stakeholders (ACFE, 2019). This type of fraud encompasses a range of illicit actions aimed at personal enrichment or other unlawful objectives, including deliberate misrepresentation, falsification of financial records, and the misuse of confidential information for personal financial gain. Scholars such as Albrecht et al. (2009) highlight that management fraud often manifests through schemes like earnings management, where executives engage in aggressive accounting tactics to artificially inflate financial performance metrics. This can involve manipulating revenue recognition, inflating asset values, or understating liabilities to portray a more favorable financial position (Albrecht et al., 2009). Additionally, Kranacher et al. (2011) emphasize fraudulent financial reporting as a prevalent form of management fraud, which entails misleading stakeholders through fictitious transactions, inadequate disclosures, or the omission of critical information necessary for informed decision-making. Moreover, Knapp (2015) identifies insider trading as another facet of management fraud, where executives exploit confidential corporate information for personal financial gain in securities trading. This unethical conduct not only undermines market integrity but also breaches fiduciary responsibilities owed to shareholders and investors (Knapp, 2015). Furthermore, Wells (2017) underscores the seriousness of misappropriation of assets in management fraud, encompassing actions such as embezzlement, nepotism, or unauthorized use of company resources for personal benefit. These fraudulent activities can result in significant financial losses and reputational damage to the organization (Wells, 2017).

Employee fraud

Employee fraud encompasses a wide range of deceptive behaviors across various levels within an organization, excluding top management, as noted by Wells (2016). This fraudulent activity includes embezzlement through unauthorized fund transfers, cash theft, and fraudulent expense claims. Employees might falsify records such as invoices or timecards to conceal illicit actions. Additionally, kickbacks and bribery are employed for personal gain or to secure business advantages. Theft of company assets, including inventory and intellectual property, also falls under this category. According to Cressey (1953), these fraudulent behaviors often stem from perceived financial pressures, opportunities to commit fraud, and rationalizations by the perpetrators.

These deceptive actions present significant risks to organizations, causing not only financial losses but also operational disruptions and reputational damage if left undetected or unaddressed. Albrecht, Albrecht, and Albrecht (2008) emphasize that the impact of employee fraud extends beyond immediate financial costs, affecting employee morale and trust within the organization. Consequently, implementing robust internal controls and fostering a culture of ethical behavior are crucial for mitigating these risks.

2.3.2. Types of Fraud Prevalent in the Banking Industry

Bank fraudulent practices encompass a wide array of deceitful tactics targeting financial institutions, significantly undermining customer assets and trust. These practices, as noted by the Federal Trade Commission (FTC, n.d.), include account takeover via stolen credentials or phishing, check fraud involving altered or counterfeit checks, credit card fraud through unauthorized transactions, phishing for sensitive data leading to identity theft, loan fraud by falsifying application details, insider fraud exploiting internal access, and wire transfer fraud via deceptive schemes. Each method demonstrates the critical need for robust preventive measures and vigilant oversight to safeguard against financial losses and maintain institutional integrity in the global banking sector.

2.3.3. Fraud Detection and Prevention

According to CSCO (2013) fraud prevention and detection refer to the measures and processes implemented by organizations to minimize the occurrence of fraudulent activities and identify instances of fraud when they occur. These efforts aim to protect the organization's assets, reputation, and financial well-being by deterring fraudulent behavior and taking appropriate actions to address and mitigate fraud risks. Fraud prevention involves implementing proactive measures and controls to reduce the likelihood of fraudulent activities. Creating a culture of integrity, ethics, and accountability within the organization is essential for fraud prevention.

Internal controls such as authorization processes, review and approval mechanisms, and proper documentation help prevent fraudulent activities. These controls provide checks and balances to ensure that transactions are valid, complete, and compliant with policies and procedures. Identifying and assessing potential fraud risks specific to the organization's operations and

industry is crucial. This allows the organization to prioritize fraud prevention efforts and develop targeted controls to address the identified risks effectively. (ACFE,2018).

Effective fraud prevention and detection measures require a comprehensive and multi-faceted approach that combines preventive controls, on-going monitoring, employee awareness, and timely response to potential fraud. By implementing robust fraud prevention and detection strategies, organizations can reduce the financial and reputational impact of fraud and maintain trust among stakeholders (Well, 2011).

2.3. The Fraud Triangle Theory (FTT)

Donald Cressey's seminal work on the Fraud Triangle Theory provides a framework for understanding the psychological and situational factors that contribute to fraudulent behavior among individuals within organizational settings. This theory posits that three elements pressure, opportunity, and rationalization are typically present when individuals engage in fraudulent activities.

Perceived Pressure/Incentive/Motive

Fraudulent behavior often begins with the presence of pressure, which can be either monetary or non-monetary. According to Abdullahi and Mansor (2015a), the impetus to commit fraud often stems from a belief by the perpetrator that they are under significant pressure. This pressure can take various forms, particularly in non-shareable monetary situations. Monetary pressure is commonly the underlying factor that motivates individuals within organizations to commit fraud. Albrecht et al. (2006) posit that approximately 95% of all fraud cases are related to the perpetrator's financial pressure. Lister (2007) underscores the importance of pressure as a critical factor in the perpetration of fraud, identifying three primary types of pressure: employment-related stress, personal stress, and pressure from the external environment. Vona (2008) further examines corporate and personal forces as key motivations for fraud. Examples of pressure include addiction to drugs, financial challenges related to family, huge debts, and substantial expenses. Lister (2007) defines pressure as the driving force behind the decision to commit fraud, although this pressure is not always the sole reason for fraudulent behavior. Pressure can be linked to various aspects, including social, monetary, political, and non-monetary factors.

Social and governmental pressure, for instance, occurs when individuals feel they cannot fail due to their reputation or status (Murdock 2008). Rae and Subramanian (2008) also posit that pressure is related to employees' motives to commit fraud.

Observed Opportunity

Opportunity arises from weak controls or poor authority structures within an organization that allow individuals to commit fraud. This is often referred to as weaknesses in internal controls. According to Kelly and Hartley (2010), individuals will exploit available situations to commit fraud. The likelihood of fraud increases when the perceived probability of being caught is low (Cressey 1953). Wilson (2004) defines opportunity as the ability to circumvent existing fraud controls. Rae and Subramanian (2008) describe opportunity as the power and ability of an employee to exploit weak institutional control systems to commit fraud. Opportunity is a critical element because it provides the necessary environment for fraudulent behavior to occur. Even if pressure and rationalization are present, without the opportunity to commit fraud, the act may not take place. This highlights the importance of implementing strong internal controls, such as segregation of duties, regular audits, and robust oversight mechanisms, to reduce the opportunities for fraud.

Rationalization

For fraud to occur, the perpetrator must rationalize their behavior, formulating justifications for their actions. This process involves creating acceptable explanations or excuses that make the fraudulent act seem less unethical. Common rationalizations include beliefs such as "I will pay the money back," "They won't miss the money," or "I am not paid enough." Hooper and Pornelli (2010) posit that fraudsters often possess a specific mindset that allows them to rationalize their behavior. Rationalization is essential because it enables the fraudster to reconcile their actions with their personal code of ethics. This self-justification process reduces feelings of guilt and makes the act of fraud psychologically acceptable to the perpetrator. Understanding rationalization helps organizations develop strategies to address and reduce the occurrence of fraud, such as promoting a strong ethical culture and providing employees with avenues to discuss and resolve ethical dilemmas.

Integrating the Fraud Triangle Theory

The Fraud Triangle Theory's three elements—pressure, opportunity, and rationalization—are interrelated and collectively contribute to the occurrence of fraudulent behavior. To effectively combat fraud, organizations must address all three elements:

1. **Reducing Pressure:** Organizations can alleviate financial and non-financial pressures on employees by offering support programs, fair compensation, and creating an open environment where employees feel comfortable discussing their concerns.
2. **Minimizing Opportunity:** Implementing strong internal controls, such as segregation of duties, regular audits, and thorough review processes, reduces the opportunities for employees to commit fraud. Ensuring that these controls are regularly updated and enforced is crucial for maintaining their effectiveness.
3. **Addressing Rationalization:** Promoting a strong ethical culture within the organization helps prevent rationalization of fraudulent behavior. Providing ethics training, establishing clear codes of conduct, and encouraging open communication about ethical concerns can help employees align their actions with the organization's values.

2.3.5 Fraudulent Behavior in Organizations

Fraudulent behavior in organizations is shaped by a complex interaction of psychological and situational factors. Donald Cressey's Fraud Triangle Theory (1953) provides a foundational framework for understanding the dynamics of fraud. This theory posits that fraud is driven by three core elements: pressure, opportunity, and rationalization. Wolfe and Hermanson (2004) extend this theory by emphasizing the critical role of individual integrity in deterring fraud, underscoring the importance of fostering a strong ethical culture within organizations. Additionally, situational factors such as weak controls and the prevailing organizational culture further influence fraud risks. Effective prevention strategies must address these dynamics through enhanced controls, promotion of ethical behavior, and the establishment of a culture of accountability (Albrecht et al., 2009; Wolfe & Hermanson, 2004; Cressey, 1953). Understanding these factors is crucial for effectively mitigating fraudulent behavior.

Capability

Capability refers to an individual's characteristics and skills necessary to commit fraud. This involves the ability to recognize and exploit specific fraud opportunities. Albrecht et al. (1995) suggest that individuals with a high capability to comprehend the existing internal control systems and identify their weaknesses are more likely to commit fraud. This capability includes a deep understanding of the organization's processes and controls, allowing fraudsters to manipulate these systems to their advantage.

Place/Purpose

The role and position within the organization can significantly facilitate the commission of fraud. Wolfe and Hermanson (2004) argue that the designation of an individual in their workplace can enable them to commit fraud, particularly if they hold a position of authority. They highlight that many organizations fail to implement adequate checks and balances to mitigate the potential for top executives, such as CEOs, to influence and perpetrate fraud. This oversight often creates opportunities for management to override existing controls, thus facilitating fraudulent activities.

Intelligence/Creativity and Ego

Perpetrators of fraud often possess the intelligence, creativity, and knowledge necessary to exploit weaknesses in internal controls. Abdullahi and Mansor (2015b) emphasize that creative, intellectual, and knowledgeable employees with a thorough understanding of existing controls and their vulnerabilities are frequently the ones who commit fraud. This knowledge enables them to identify and exploit loopholes in the system. Moreover, individuals who commit fraud often have a strong ego, which drives their confidence to exploit these weaknesses without fear of getting caught.

Pressure, Deception, and Stress

Rudewicz (2011) discusses the coercive tactics employed by adept fraudsters to compel others to participate in or conceal fraudulent activities. Once an initial fraud is successfully executed, perpetrators may use coercion, deceit, or psychological pressure to enlist collaborators or ensure

the concealment of their illicit actions. This coercive dynamic perpetuates a cycle of deception within organizations, undermining trust and integrity. The initial pressure to commit fraud can stem from various sources, including financial difficulties, addiction, or other personal challenges. Once the fraud is underway, the perpetrator often uses deception and stress to maintain the scheme and prevent detection.

2.4 Empirical reviews from others countries

Chen, Lin, and Zhou (2005): This study examined the effectiveness of internal controls in Chinese listed companies using a mixed-method approach. The researchers utilized quantitative data analysis by collecting financial data from annual reports of 200 publicly listed firms over a five-year period. They employed regression analysis to identify correlations between the strength of internal controls and the incidence of fraud. Additionally, qualitative interviews with internal auditors and managers provided insights into the practical challenges and successes of internal control implementation. The findings revealed that firms with stronger internal control systems experienced fewer instances of fraud. The study highlighted the importance of internal audits and the segregation of duties in preventing fraudulent activities.

Ofori and Appiah-Nimo (2016): In a study of Ghanaian banks, the researchers used a survey methodology to gather data from 150 bank employees, including managers and internal auditors. The study employed descriptive statistics and chi-square tests to analyze the effectiveness of internal control systems. Findings indicated that effective internal control systems significantly reduced the incidence of fraud. The research emphasized that regular audits, proper documentation, and employee training were critical components of effective control systems.

Njanike, Dube, and Mashayanye (2009) conducted a study titled "Effectiveness of Internal Control Systems in Zimbabwean Banks," utilizing a quantitative survey method to evaluate how internal control systems impact fraud prevention. The study sampled 30 banks, collecting data from employees, including managers, auditors, and compliance officers, through structured questionnaires. The researchers used statistical techniques to analyze the responses, identifying trends and correlations. The findings revealed that banks with robust internal control systems experienced significantly fewer instances of fraud. Key factors contributing to the effectiveness

of these controls included regular internal audits, stringent segregation of duties, and comprehensive documentation practices. The study emphasized the importance of continuous monitoring and evaluation of internal controls to maintain their effectiveness and prevent fraudulent activities.

Njogo (2012) conducted a study titled "Impact of Internal Controls on Fraud Prevention in the Nigerian Public Sector," employing a mixed-method approach to assess the effectiveness of internal control systems. The research combined quantitative surveys with qualitative interviews to gather data from a diverse sample of public sector employees in Nigeria, including internal auditors, finance officers, and senior management. The findings indicated that inadequate internal controls were a significant contributor to the high incidence of fraud within Nigerian public institutions. Key weaknesses identified included deficiencies in internal audit functions, inadequate segregation of duties, and insufficient employee training in fraud prevention measures. To mitigate these challenges, the study recommended enhancing internal audit capabilities, improving training programs to raise awareness about fraud prevention, and enforcing stricter adherence to established control procedures. These measures were shown to effectively reduce the occurrence of fraud in the Nigerian public sector.

Mawanda (2008) conducted a study titled "Effectiveness of Internal Control Systems in Ugandan Universities," utilizing a case study approach to evaluate how internal control systems prevent financial mismanagement. The study focused on multiple universities, involving detailed examinations of their financial management practices. Data was collected through interviews with university administrators, internal auditors, and finance officers, as well as reviews of financial records and internal control documentation. The findings indicated that universities with strong internal control systems experienced fewer financial irregularities. Essential components of effective controls included regular internal audits, proper segregation of duties, and strong oversight by university management. The study highlighted that an active internal audit function and comprehensive oversight mechanisms were crucial in preventing financial mismanagement and ensuring the integrity of financial reporting.

A 2014 case study of the Nigerian Customs Service concluded that while internal control systems assist management, they are not a substitute for good management practices. The study, which empirically tested five hypotheses, found that continuous internal checks and audits by both upper and lower management levels are essential for an adequate internal control system. It emphasized that a robust internal control system ensures proper accountability and suggested that organizations should provide adequate motivation, such as bonuses and incentives, to employees to prevent financial fraud. Additionally, the study recommended the effective use of information technology and a competent team of experts to enhance the standard internal control logic and improve the overall effectiveness of internal control systems in organizations (Adewale, 2014).

Conversely, a study conducted by Tsedal Lemi in January 2015 argued that internal control cannot absolutely guarantee the achievement of an organization's objectives. The study stressed that internal control is a shared responsibility among management, employees, and other stakeholders, requiring a clear line of responsibility and reporting structure to mitigate the risk of collusion and fraud. It highlighted the importance of separating accounting duties from the authorization and custody of assets to detect control risks effectively. The effectiveness of the control system should be evaluated against established criteria and monitored continuously, which is the responsibility of both management and internal auditors (Tsedal Lemi, 2015).

2.5. Empirical reviews from Ethiopia

Kalkidan's (2017) study aimed to comprehensively evaluate fraud control practices within Dashen Bank's branches in Addis Ababa, Ethiopia, employing a descriptive research design integrating qualitative and quantitative data collection methods. Using purposive sampling, 185 employees across managerial and clerical positions were selected from various area banks. Primary data were gathered through structured questionnaires to assess perceptions and experiences related to fraud prevention strategies and internal control measures, while secondary data included company manuals and policies to support findings. Descriptive statistical analysis revealed deficiencies in anti-fraud policies, types of fraud (e.g., customer denial, identity theft), control environment issues, inadequate risk assessment, communication gaps, ineffective monitoring, and technological control shortcomings, highlighting areas for improvement in fraud prevention practices.

Samuel (2022) conducted a study titled "Assessment of Internal Control System Effectiveness in Fraud Prevention: A Case Study of Commercial Bank of Ethiopia (CBE)," employing a descriptive research design and quantitative methods to evaluate how internal control systems effectively prevent fraud. The study sampled 219 respondents from various departments via purposive sampling and utilized structured questionnaires with Likert scale items to gauge perceptions on internal controls and fraud prevention. Findings highlighted strengths in risk identification and control information dissemination, but identified weaknesses in internal control staff involvement in risk assessment, dual controls, and corrective actions based on monitoring findings. The study also noted deficiencies in dual controls over assets and periodic policy reviews, while recognizing the effectiveness of anti-fraud policies, employee training, and access protocols despite challenges in approval authorities.

Fikru (2018) conducted a study titled The Effectiveness of Internal Control System in Detection and prevention of Fraud in Ethiopian Banking Industry. Using a descriptive research design, the study sampled 160 respondents from nine Ethiopian banks via purposive sampling. Structured questionnaires with Likert scale items were used to assess perceptions of internal control system (ICS) effectiveness and its impact on fraud prevention. Key findings identified strengths in risk identification and control information dissemination, as well as weaknesses in risk assessment, dual controls, and corrective actions. Data analysis employing SPSS included descriptive statistics and inferential techniques, highlighting a significant positive correlation between robust ICS encompassing a strong control environment, effective risk assessment, defined control activities, and proactive monitoring and enhanced fraud prevention capabilities in Ethiopian banks.

Wubalem(2021) conducted a study titled "Effectiveness of Internal Control Systems in Detecting and Preventing Fraud in the Commercial Bank of Ethiopia," employing an explanatory research design and utilizing both quantitative and qualitative approaches to gather comprehensive data from 278 purposively sampled senior internal control department staff and managers across nine public and private commercial banks in Ethiopia, revealing that fraud prevention methods were outdated, with banks vulnerable to sophisticated, technology-driven fraud due to inexperienced employees and inadequate training, while finding that the control environment and information communication had less impact on fraud detection and prevention compared to risk assessment,

control activities, and monitoring activities, thereby emphasizing the necessity for continuous monitoring and evaluation of internal controls to enhance their effectiveness in preventing fraud.

2.6. Research Gap

Despite extensive research on internal control systems in public banks, there remains a critical gap in understanding their effectiveness within private banking contexts, such as Bank of Abyssinia. Existing literature predominantly focuses on public institutions, where regulatory frameworks and transparency standards differ significantly from those in the private sector. This limitation hinders a comprehensive understanding of how internal control systems operate in detecting and preventing fraud, tailored to the unique challenges and operational dynamics of private banks. While numerous studies highlight the role of internal controls in ensuring financial transparency and regulatory compliance in public banks, empirical research specific to private banks like Bank of Abyssinia is notably scarce. This lack of dedicated investigation limits the development of tailored strategies and best practices for enhancing internal controls in private banking environments, characterized by distinct operational complexities and regulatory landscapes.

Therefore, additional research is imperative to fill this gap and thoroughly assess the effectiveness of internal control systems in private banks, particularly their ability to detect and prevent fraud. This study aims to address these research gaps by focusing on the internal control system of Bank of Abyssinia, providing insights that could inform industry practices and regulatory frameworks tailored to the private banking sector.

2.7. Conceptual Framework

The conceptual framework for the study on fraud detection and prevention in Ethiopian banks, with the Bank of Abyssinia as a focal point, is based on the identification of the dependent and independent variables, as well as the integration of relevant theoretical and empirical considerations.

Dependent Variable The dependent variable of the study is fraud detection and prevention within the context of Ethiopian banks, particularly the Bank of Abyssinia. This variable represents the central focus of the research, aiming to assess the effectiveness of internal controls system in prevention and detection.

Independent Variables The independent variables encompass the following components:

1. **Control Environment:** This variable represents the organizational environment, including the integrity and ethical values of management, which influences the effectiveness of internal controls in fraud detection and prevention.
2. **Risk Assessment:** The risk assessment variable involves the identification and analysis of potential fraud risks within the banking environment, contributing to the development of targeted control mechanisms.
3. **Control Activity:** This variable encompasses the specific control mechanisms and activities implemented to mitigate fraud risks, including preventive and detective controls.
4. **Information and Communication:** Information and communication represent the flow of relevant information within the organization, including the dissemination of fraud-related knowledge and the reporting of potentially fraudulent activities.
5. **Monitoring Activity:** The monitoring activity variable involves the ongoing assessment and evaluation of internal controls to ensure their effectiveness in detecting and preventing fraud.

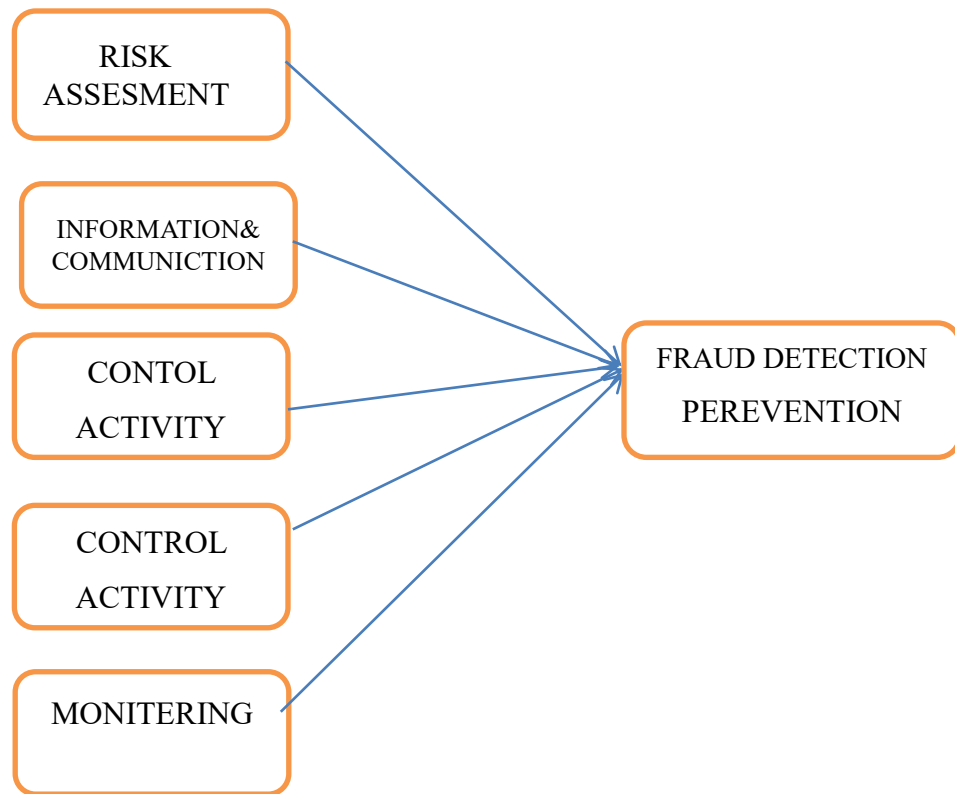


Figure 1: Conceptual Framework of the Study

Source: COSOs 1992

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

According to Creswell (2014), research design refers to the structured plan and strategy devised to address specific research questions or problems. It outlines the methods, procedures, and techniques used for data collection and analysis, ensuring a systematic and rigorous approach throughout the study. For this research, an explanatory research design were employed. This method aims to explore cause-and-effect relationships among variables, going beyond mere description or correlation. It seeks to uncover underlying mechanisms and provide in-depth explanations for observed phenomena (Saunders et al., 2003). By focusing on relationships between variables, the study aims to deepen understanding of the research topic and contribute valuable insights to the existing body of knowledge.

3.2 Research Approach

The study explored correlations between variables using quantitative methods, ensuring impartiality in data collection and analysis. By converting data into numbers, statistical analyses were conducted to rigorously examine relationships. This approach aimed to test hypotheses about the effectiveness of internal control systems using inferential statistics. Quantitative research focuses on measuring variables, analysing them statistically, and deriving findings that can be generalized and used for predictions (Creswell, 2014).

3.3 Sources of Data

This study used primary sources of data and questionnaire was used as a primary data collection method. The questionnaire was shared to head office of the company focal to support on distribution and collection of questionnaires to and from the selected respondents under their respective field offices. The researcher briefed the Human Resource focal how it was distributed and collect the questionnaires from the respondents. Completed questionnaire was shared to the researcher for further analysis. The questions was framed using Likert's scale of measurement ranging from strongly agree to strongly disagree (Strongly agree 5, Agree 4, Neutral 3, Disagree

2 and Strongly Disagree. This enabled the researcher to tabulate and analyze data with ease and also the primary source data is also supported by secondary data using previous research finding.

3.4. Target Population

The aim of this study is to examine how Bank of Abyssinia's internal audit, finance, compliance, and risk assessment departments contribute to detecting and preventing fraud. The population encompasses all events, elements, and individuals sharing a common observable characteristic (Lewis, 2015). The target population specifically includes 273 permanent employees identified through HR records at Bank of Abyssinia. These employees are crucial for their direct roles in ensuring the effectiveness of the internal control system in detecting and preventing fraud, making them pivotal participants in this research.

3.5. Sample Size Determination

Sample size is determined using Solvin's method, with a 95 percent confidence level and a 5 percent error margin. If you want to use Slovin's formula to estimate a population percentage, you'll need to use a 95 percent confidence coefficient (Tejada & Punzalan, 2012). The sampling formula used to obtain the sample size for Bank of Abyssinia workers and managers is as follows:

$$\text{Thus, } n = \frac{N}{1 + Ne^2}$$

Where, n = is the sample size

N = is the population size (273)

e = error tolerance (0.05)

$$n = \frac{273}{1 + 273(0.05)^2} = 162.258544 \approx 162$$

Based on Slovin's formula, the sample of 162 respondents has drawn from target population of 273 employees.

3.6 Sampling Technique

Convenience sampling, a non-probability method selected for its practicality and accessibility, involves choosing participants based on their convenient availability rather than through random selection (Lewis, 2015). This approach facilitates ease in data collection by including individuals who are easily accessible at the time and place of the study, thereby minimizing logistical challenges.

3.7. Instrumentation and Data Collection

A structured questionnaire was used to gather primary data in this investigation. Closed-ended questions were asked in accordance with the study's goals. The demographic data and the four independent study variables were broken up into parts of the questionnaire. The five-point Likert Scale was utilized for the closed-ended questions, which ranged from 1 to 5. Drop and choose later was used by the researcher in order to provide respondents enough time to complete the instrument and boost the response rate. Before analyzing the data, the respondents were given a week to answer the questions. The credibility of the primary data, collected through structured questionnaire, was validated through a rigorous comparison with the research findings of other scholars.

3.8. Validity and Reliability of Instruments

3.8.1. Validity

In a pilot research, the methodology, parameters, and materials utilized in the full-scale investigation were determined. According to Mertler (2018), a pilot test is critical for identifying flaws in the study design and making necessary adjustments to ensure that the data acquired is accurate and dependable.

The questionnaire was tested on eight employees found in the listed departments of the Bank of Abyssinia during the pilot project. The research utilized 5% of the total sample number because, according to Flick (2014), a suitable pilot group is made up of 1-10% of the total sample size. The pilot test's goal is to improve the questionnaire so that participants in the main research have no difficulty answering the questions. The findings of the pilot study are not included in the final research.

When it comes to instrument validity, the term refers to how accurately a measuring instrument measures what it is meant to (Yin, 2013). Content validity testing was utilized to determine the instrument's validity in this research. Indicators or substance of a certain idea was assessed to see how well they represented the data acquired using a particular instrument (Lewis, 2015). An experienced university supervisor and other advisors was brought in to make sure that the questions tested or measured what was intended.

3.8.2. Reliability

After the data had been coded and entered into SPSS version 23, a test for reliability had been carried out. Reliability is the degree to which a measurement can be repeated and provide the same findings. For this study, a Cronbach's alpha coefficient, a common measure of internal consistency, was determined. Scale correlations may be evaluated using Cronbach's alpha, a reliability metric that measures the correlation between item answers produced from the scale. The value of this variable ranges from 0 to 1. (Shelby, 2011).

Cronbach's alpha does not have a standard scale, but the closer it gets to 1, the better. Previous researches have employed a minimum Cronbach's alpha score of 0.4 to 0.9. (George & Mallery, 2003; Gregory, 1999; Houser & Bokovoy, 2008; Kline, 2000; Makhitha & Dlodlo, 2014; Nunnally, 1978; Nunnally & Bernstein, 1994). There is little doubt that the internal consistency of Malhotra and Birks' (2007; Malhotra & Birks (2007)) findings show an unacceptable level of internal consistency.

Therefore, Cronbach's Alpha of 0.6 and higher was selected as the acceptable dependability coefficient. Consequently, the test showed that the instrument's components are trustworthy. It was determined that all the scales employed in this research are trustworthy by utilizing Cronbach's alpha coefficient, which had an alpha value more than 0.6 and for the majority closer to 1.

Table 1: Cronbach Alpha Test

Variables	Cronbach's Alpha	N of Items
Fraud Risk Assessment	.807	6
Information and Communication	.788	6
Control Activities	.766	6
Monitoring	.674	5
Fraud Prevention and Detection	.763	5

Control environment	.689	6
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3.9. Data Analysis and Presentation

In order to provide more digestible summaries, all of the data gathered in the field was edited, coded, and tabulated (Yin, 2013). Statistical Package for the Social Sciences (SPSS) version 23.0 and Microsoft Excel was then used to analyze the data. The frequency counts, percentages, mean, median, and standard deviation was calculated using descriptive statistics.

Multiple regression analysis and t-test statistics was used to examine the relationship between predictor variables (Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring) and the dependent variable (fraud detection and prevention).

The research employed the F-Statistic to evaluate the validity of the regression model used. The regression model is said to be valid if the F Statistic value is larger than the F Critical value. Unless this is the case, the model was shown to be flawed. This is based on the ANOVA Table's findings.

3.10. Model Specification

Prior to inference, the regression model was used to verify that the study's regression assumptions are sound. It is possible for following processes to be invalid if there are any infractions. The responses Y to the explanatory factors have been considered to be linear in the parameters and the errors are assumed to be independent and identically distributed in our regression models.

The Multiple Regression Model followed this format:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where Y= Fraud detection and prevention

B_0 = Constant

$\beta_1, \beta_2, \beta_3$ and β_4 are Coefficients of Fraud detection and prevention at Bank of Abyssinia

ε = error term

X_1 = Risk Assessment

X_2 = Information and Communication

X3 = Control Activities

X4 = Monitoring

X5 = control environment

The finding from the analysis was presented in form of charts, pie charts, figures, graphs, tables and narrations.

3.11. Ethical Consideration

Inquirers was informed of the study's objective and requested to provide their consent. Aside from this study, the data gathered was not utilized for any other reason. However, the results of the research were made available to both the graduating school and the company. As a researcher, you want your data gathering methods and analytic techniques to be as reliable as possible. There are many other ways to look at this issue, and this is only one of them. Internal consistency is measured through reliability, which is commonly employed in questionnaire design. Reliability analysis looks at the degree to which the elements that make up each scale are homogeneous or cohesive.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

The following is a general outline for the structure of this chapter: It includes a reliability test for the measures employed, as well as an analysis of the demographics of the respondents. Pearson's correlation coefficient and descriptive analyses were provided sequentially in order to make it easier to do the empirical analysis.

4.1. Response Rate

There were 162 questionnaires issued, but only 157 of them were returned to the researcher in their whole. 96.9% of people took the survey, which the researchers consider adequate. Supporting evidence for the research conclusions comes from Mugenda (2003), who indicates that, a response rate of 50% or above is considered adequate.

4.2. Demography of Respondents

Table 2. Demographic Status of Respondents

Variables	Type	Count	%
Gender	Female	57	36.30
	Male	100	63.69
Occupation	Legal and compliance officer	17	10.82
	Risk assessment officer	44	28.02
	Audit and finance Officers	96	61.14
Service Year	<3 Years	65	41.40
	3-5 Years	57	36.30
	5-7 Years	26	16.56
	7+ Years	9	5.73
Educational Qualification	Certificate and below		
	Diploma	57	36.30
	Bachelor	79	50.31
	Masters	22	14.01

Source: Survey Data, 2024

There were 64% of men, followed by 36% of women, according to the results of the survey. It is consequently clear that more men than women were employed by brewing firms in the study. According to the two-thirds rule, this demonstrates that Bank of Abyssinia does not adhere to it. The findings show that the group of 17 individuals (10.82% of the sample) focuses on ensuring

legal and regulatory compliance, including creating and implementing fraud prevention policies. Despite their importance in compliance and legal oversight, they are less involved in daily risk assessment and financial auditing compared to other groups. The risk assessment officers, comprising 44 individuals (28.02%), play a crucial role in identifying and mitigating fraud risks. The largest group, audit and finance officers (96 individuals, 61.14%), is pivotal in fraud detection and prevention, conducting financial audits, ensuring record accuracy, and evaluating internal controls.

Of those polled, 41% reported having worked for less than three years, while 36% had left after three to five years, 16% had left after seven to seven years, and 5% had left after more than seven years. Since the majority of responders had been working in their departments for an average of more than three years, it was concluded that they were well-versed with the company's information and as a result, just the most essential details were requested. Table 4.1 shows that 50% of those polled had a bachelor's degree or above, followed by 36.3 percent with a diploma and 14% with a master's degree. In light of this, it may be concluded that Bank of Abyssinia has a more professional workforce.

4.4 Descriptive statistics of the level of agreement of the respondent's Perception towards different variables of the research

An itemized rating scale is used to create a range by the researcher. Respondents' attitudes regarding each variable were gauged with the use of this range. The range is constructed using the following formula (Shrestha, 2015).

The mean scores of each variable were employed in this study's analysis, which was done using descriptive statistics or central tendency. Assessment of the average replies of respondents to each question contained in each dimension of the predictor variable and the grand mean of the dimensions was the primary purpose of this measurement. Finally, the grand mean of each independent dimension is used to arrive at the study's partial research objectives.

$$\begin{aligned} \text{Itemized rating scale: } & \frac{\text{Max} - \text{Min}}{5} \\ & = \frac{5 - 1}{5} \end{aligned}$$

$$= 0.80$$

The mean of each individual item ranging from 1- 5 falls within the following interval:

Interval of Means	Perception
1.00 – 1.80	Very Low
1.81 – 2.60	Low
2.61 – 3.40	Medium
3.41 – 4.20	High
4.21 – 5.00	Very High

4.1.1. Fraud Risk Assessment

Table 3: Descriptive Statistics Result for Fraud Risk Assessment

	Mean	Std. Deviation
The Board of Directors set an appropriate tone and realistic expectations on management to enforce an anti-fraud culture	3.9363	.93837
The audit committees receive regular reports on the status of reported or alleged fraud.	3.9363	.93837
The audit committees engage in candid and open conversation with external auditors about suspected fraud.	4.0510	.69611
Staff members have basic understanding of fraud and aware of the red flags	4.1083	.80527
Staff members read and undertake policies and procedures relating to fraud	3.9172	.96051
Staff reports suspicious or incidences of fraud.	4.1975	.61435
Grand Mean	4.0244	.59611

Source: Survey Data, 2024

The employees showed an agreeing attitude with a mean value of 3.9363 and a standard deviation value of 0.93837. This suggests that the employees generally believe that the Board of Directors sets an appropriate tone and realistic expectations on management to enforce an anti-fraud culture. The employees also displayed an agreeing attitude with a mean value of 3.9363 and a standard deviation value of 0.93837. This indicates that the employees believe that the audit committee receives regular reports on the status of reported or alleged fraud.

The survey showed that the employees have an even stronger agreeing attitude with a mean value of 4.0510 and a standard deviation value of 0.69611. This suggests that the employees feel that the audit committee engages in candid and open conversation with external auditors about suspected fraud. The employees demonstrated a high level of agreement with a mean value of

4.1083 and a standard deviation value of 0.80527. This indicates that the employees feel that staff members have a basic understanding of fraud and are aware of the red flags. Additionally, they are likely to report suspicious incidents of fraud.

The survey revealed that the employees have an agreeing attitude with a mean value of 3.9172 and a standard deviation value of 0.96051. This suggests that the employees generally believe that staff members read and undertake policies and procedures relating to fraud.

The grand mean for the variable fraud risk assessment is 4.0244 with a standard deviation value of 0.59611. This indicates that, on average, the employees have a positive attitude towards fraud risk assessment within the organization suggesting that the employees of Bank of Abyssinia generally have a positive attitude and belief in the effectiveness of the anti-fraud measures and culture within the organization.

4.1.2. Information and Communication

Table 4: Descriptive Statistics Result for Information and Communication

	Mean	Std. Deviation
There is open access to organization wide resources and clear lines of communication and dissemination of information in a timely manner to all parties.	3.7707	1.17054
Antifraud policies and procedures are effectively communicated.	4.0764	.72094
Management is involved in delivering messages both in person and web based communication on fraud prevention and detection.	4.0382	.74149
There is positive affirmation of high risk area function which includes periodic reminders on major fraud risk areas facing the bank	3.9236	.84384
There is broad roll out of anti-corruption measures	4.0828	.86944
There is training of staff to recognize and communicate red flags either through special training for finance professionals, special training for senior executives.	4.1210	.86492
Grand Mean	4.0021	.50354

Source: Survey Data, 2024

The employees expressed an agreeing attitude with a mean value of 3.7707 and a standard deviation value of 1.17054. This suggests that the employees believe that there is open access to organization-wide resources and clear lines of communication and dissemination of information in a timely manner to all parties. The survey revealed that the employees have an agreeing attitude with a mean value of 4.0764 and a standard deviation value of 0.72094. This indicates

that the employees feel that antifraud policies and procedures are effectively communicated within the organization.

The employees demonstrated an agreeing attitude with a mean value of 4.0382 and a standard deviation value of 0.74149. This suggests that the employees believe that management is actively involved in delivering messages, both in person and through web-based communication, on fraud prevention and detection. The survey showed that the employees have an agreeing attitude with a mean value of 3.9236 and a standard deviation value of 0.84384. This indicates that the employees believe there is positive affirmation of high-risk area function, including periodic reminders on major fraud risk areas facing the bank.

The employees expressed an agreeing attitude with a mean value of 4.0828 and a standard deviation value of 0.86944. This suggests that the employees believe there is a broad rollout of anti-corruption measures within the organization. The survey revealed that the employees have an agreeing attitude with a mean value of 4.1210 and a standard deviation value of 0.86492. This indicates that the employees feel that there is effective training of staff to recognize and communicate red flags, including special training for finance professionals and senior executives.

The grand mean for the variable information and communication is 4.0201 with a standard deviation value of 0.50354. This suggests that, on average, the employees have a positive attitude towards the information and communication practices within the organization. These findings collectively indicate that the employees of Bank of Abyssinia generally have a positive attitude towards the organization's communication, dissemination of information, and the effectiveness of antifraud policies and procedures. They also believe in the active involvement of management in delivering messages on fraud prevention and detection, as well as the effectiveness of training programs and anti-corruption measures.

4.1.3. Control Activities

Table 5: Descriptive Statistics Result for Control Activities

	Mean	Std. Deviation
The institution has clear separation of roles	4.1401	.70218
There is appropriate supervision by senior staff on the work of their juniors	3.7898	1.04410

Appropriate levels of management whenever problems or potential problems are detected.	3.7707	.80760
It is impossible for one staff to have access to all valuable information without the consent of senior staff	3.7643	.98801
The banks security system identifies and safeguard Institutional Assets	3.8599	1.02818
There are elaborate mechanisms put in place to address weaknesses of controls	3.9490	.74933
Grand Mean	3.8790	.60934

Source: Survey Data, 2024

The employees expressed an agreeing attitude with a mean value of 4.1401 and a standard deviation value of 0.70218. This suggests that the employees believe that the institution has clear separation of roles, indicating a positive perception of the organizational structure and delineation of responsibilities. The survey revealed that the employees have an agreeing attitude with a mean value of 3.7898 and a standard deviation value of 1.04410. This indicates that the employees feel that there is appropriate supervision by senior staff on the work of their juniors, although the standard deviation suggests a wider range of attitudes among the employees.

The survey showed that the employees have an agreeing attitude with a mean value of 3.7707 and a standard deviation value of 0.80760. This suggests that the employees believe that there is appropriate management response at the detection of problems or potential problems within the organization. The employees demonstrated an agreeing attitude with a mean value of 3.7643 and a standard deviation value of 0.98801. This indicates that the employees believe it is impossible for one staff to have access to all valuable information without the consent of senior staff, reflecting a positive perception of information security measures.

The survey revealed that the employees have an agreeing attitude with a mean value of 3.8599 and a standard deviation value of 1.02818. This suggests that the employees believe that the bank's security system effectively identifies and safeguards institutional assets, although the wider standard deviation indicates varying attitudes among the employees. The employees expressed an agreeing attitude with a mean value of 3.9490 and a standard deviation value of 0.74933. This indicates that the employees believe there are elaborate mechanisms in place to address weaknesses of controls within the organization.

The grand mean for the variable control activities is 3.8790 with a standard deviation value of .60934. This suggests that, on average, the employees have a positive attitude towards the

control activities within the organization. These findings collectively indicate that the employees of Bank of Abyssinia generally have a positive attitude towards the clear separation of roles, supervision by senior staff, management response to problems, access control to valuable information, security of institutional assets, and mechanisms to address control weaknesses within the organization.

4.1.4. Control Environment

Table 6: Descriptive Statistics Result for Control Environment

	Mean	Std. Deviation
Management sets an enabling environment that permit controls designed to be effective.	3.8599	.90198
The management maintains a good corporate culture and sets appropriate tone towards management of banks.	4.0828	.75923
The Board has set up an independent committee saddled with the responsibility of overseeing the internal controls of the bank.	3.8535	.86836
The Board and the management have an effective whistle-blowing policy and procedure for reporting fraud and other unethical practices.	3.9363	.93837
Appropriate measures are taken to correct misfeasance in operation of Accounting & Finance Management System	3.9172	.96051
Management acts with a great degree of integrity in execution of their roles.	3.6561	1.26953
Grand Mean	4.0624	.58303

Source: Survey Data, 2024

The survey revealed that employees have an agreeing attitude with a mean value of 3.8599 and a standard deviation value of 0.90198 regarding management's role in setting an enabling environment for effective controls. This indicates that the employees generally believe that the management fosters an environment that allows controls to be designed and implemented effectively, reflecting a positive perception of the management's support for control measures within the organization.

The survey showed that the employees have an agreeing attitude with a mean value of 4.0828 and a standard deviation value of 0.75923 regarding the maintenance of a good corporate culture and the setting of an appropriate tone towards the management of banks. This suggests that the employees perceive the management as maintaining a positive corporate culture and setting an appropriate tone for the effective management of the bank, indicating a strong alignment with the organizational values and leadership approach.

The survey indicated that the employees have an agreeing attitude with a mean value of 3.8535 and a standard deviation value of 0.86836 regarding the establishment of an independent committee by the Board to oversee the internal controls of the bank. This suggests that the employees believe that the Board has taken proactive measures to ensure effective oversight of internal controls through the establishment of an independent committee, reflecting a positive perception of the Board's commitment to governance and risk management.

The survey revealed that the employees have an agreeing attitude with a mean value of 3.9363 and a standard deviation value of 0.93837 regarding the effectiveness of the whistle-blowing policy and procedure for reporting fraud and other unethical practices by the Board and the management. This indicates that the employees perceive the existence of an effective whistle-blowing policy and procedure for reporting fraudulent and unethical practices, reflecting a positive perception of the organization's commitment to transparency and ethical conduct.

The survey showed that the employees have an agreeing attitude with a mean value of 3.9172 and a standard deviation value of 0.96051 regarding the implementation of appropriate measures to correct misfeasance in the operation of the Accounting & Finance Management System. This suggests that the employees believe that the organization takes appropriate measures to address and rectify any misfeasance in the operation of the Accounting & Finance Management System, reflecting a positive perception of the organization's commitment to financial integrity and accountability.

The survey indicated that the employees have an agreeing attitude with a mean value of 3.6561 and a standard deviation value of 1.26953 regarding the degree of integrity exhibited by the management in the execution of their roles. This suggests that the employees generally perceive the management as acting with a significant degree of integrity in the execution of their roles, although the wider standard deviation indicates varying attitudes among the employees.

The grand mean for the variable control environment is 4.0624 with a standard deviation value of .58303. This indicates that, on average, the employees have a positive attitude towards the control environment within the organization, reflecting a general perception of the effectiveness and integrity of the control environment.

4.1.5. Monitoring

Table 7: Descriptive Statistics Result for Monitoring

	Mean	Std. Deviation
Management assesses systems of control from time to time.	4.0828	.65985
Monitoring activities within Bank of Abyssinia are conducted by independent and competent personnel.	4.1401	.77177
There is appropriate communication to the management on the effectiveness of the ongoing monitoring process on risk and control matters.	3.9299	.96818
The management takes appropriate corrective actions based on the findings of monitoring activities.	4.2102	.62050
Periodically, management reviews audit or internal controls in place.	3.9490	.97925
Grand Mean	4.0624	0.9999

Source: Survey Data, 2024

The survey revealed that employees have an agreeing attitude with a mean value of 4.0828 and a standard deviation value of 0.65985 regarding management's assessment of control systems. This indicates that the employees generally believe that the management regularly assesses the systems of control, reflecting a positive perception of the organization's commitment to evaluating and improving control mechanisms.

The survey showed that the employees have an agreeing attitude with a mean value of 4.1401 and a standard deviation value of 0.77177 regarding the existence of an independent monitoring unit within the bank. This suggests that the employees perceive the presence of an independent monitoring unit, reflecting a positive perception of the organization's dedication to independent oversight and monitoring of operations and controls.

The survey revealed that the employees have an agreeing attitude with a mean value of 3.9299 and a standard deviation value of 0.96818 regarding the appropriate communication to the management on the effectiveness of the ongoing monitoring process on risk and control matters. This indicates that the employees believe that there is appropriate communication to the management regarding the effectiveness of ongoing monitoring processes, reflecting a positive perception of the organization's transparency and accountability in risk and control matters.

The survey indicated that the employees have an agreeing attitude with a mean value of 4.2102 and a standard deviation value of 0.62050 regarding the management's review of the results of the audit. This suggests that the employees perceive the management as actively reviewing the results of the audit, reflecting a positive perception of the organization's commitment to utilizing audit findings for improvement and decision-making.

The survey showed that the employees have an agreeing attitude with a mean value of 3.9490 and a standard deviation value of 0.97925 regarding the periodic review of audit or internal controls by the management. This indicates that the employees believe that the management periodically reviews audit or internal controls, reflecting a positive perception of the organization's commitment to ongoing evaluation and enhancement of control mechanisms.

The grand mean for the variable monitoring is 4.0624 with a standard deviation value of 0.9999. This suggests that, on average, the employees have a positive attitude towards the monitoring practices within the organization, reflecting a general perception of the effectiveness and integrity of the monitoring processes.

4.1.6. Fraud Prevention and Detection

Table 8: Descriptive Statistics Result for Fraud Prevention and Detection

	Mean	Std. Deviation
There is implementation of strong internal control system able to detect and prevent fraudulent act and practice.	3.8854	.65992
There is efficient implementation and supervision of strong internal control system capable of revealing fraudster's mode of operation.	3.8917	.64629
The awareness of internal control system by management and staff reduces an attempt to perpetrate fraud is high.	3.9299	.64166
There is an effective internal control system sufficient enough to reveal the lapses and inadequacies in the bank open to fraudsters within and outside the bank.	4.1401	.63507
Top management adherence and submit to the control procedures sets in place in all departments of the bank able to prevent the occurrence of management fraud.	4.0255	.62991
Grand Mean	3.9745	.42891

Source: Survey Data, 2024

The survey revealed that employees have an agreeing attitude with a mean value of 3.8854 and a standard deviation value of 0.65992 regarding the implementation of a strong internal control system capable of detecting and preventing fraudulent acts and practices. This indicates that the

employees generally believe that there is an effective internal control system in place to detect and prevent fraudulent activities, reflecting a positive perception of the organization's commitment to fraud prevention and risk management.

The survey showed that the employees have an agreeing attitude with a mean value of 3.8917 and a standard deviation value of 0.64629 regarding the efficient implementation and supervision of a strong internal control system capable of revealing fraudsters' mode of operation. This suggests that the employees perceive the efficient implementation and supervision of a strong internal control system, reflecting a positive perception of the organization's dedication to effectively managing and mitigating fraudulent activities.

The survey revealed that the employees have an agreeing attitude with a mean value of 3.9299 and a standard deviation value of 0.64166 regarding the high awareness of the internal control system by management and staff, leading to a reduction in attempts to perpetrate fraud. This indicates that the employees believe that the awareness of the internal control system by management and staff contributes to a reduced likelihood of fraudulent attempts, reflecting a positive perception of the organization's emphasis on fraud prevention and risk awareness.

The survey indicated that the employees have an agreeing attitude with a mean value of 4.1401 and a standard deviation value of 0.63507 regarding the effectiveness of the internal control system in revealing lapses and inadequacies that may be exploited by fraudsters within and outside the bank. This suggests that the employees perceive the internal control system as effective in identifying and addressing potential vulnerabilities to fraudulent activities, reflecting a positive perception of the organization's proactive approach to fraud detection and prevention.

The survey showed that the employees have an agreeing attitude with a mean value of 4.0255 and a standard deviation value of 0.62991 regarding top management's adherence and submission to the control procedures set in place in all departments of the bank, capable of preventing the occurrence of management fraud. This indicates that the employees believe that top management's commitment to control procedures contributes to the prevention of management fraud, reflecting a positive perception of the organization's leadership integrity and commitment to ethical conduct.

The grand mean for the variable fraud prevention and detection is 3.9745 with a standard deviation value of .42891. This suggests that, on average, the employees have a positive attitude towards the organization's efforts in fraud prevention and detection, reflecting a general perception of the effectiveness and integrity of the fraud prevention measures.

4.2. Inferential Statistics

The researcher used regression analysis to determine the influence of internal control on Fraud Prevention and Detection in Bank of Abyssinia. The results of Correlation, ANOVA, and regression coefficients are provided in the following sections.

4.2.1. Correlation Analysis

The researcher used Pearson's Correlation analysis in order to examine the relationship between the four dimensions of internal control (Control Environment, Monitoring, Control Activities, Information and Communication, and Fraud Risk Assessment) and Fraud Prevention and Detection. Pearson's correlation coefficient was used as a statistical tool. Pearson's correlation coefficient is a common method to quantify how strongly two variables are related to each other. It assumes that the variables have a linear association and that they are randomly sampled from a population (Kothari, 2014).

The results of the correlation analysis between the independent variables (Control Environment, Monitoring, Control Activities, Information and Communication, and Fraud Risk Assessment) and the dependent variable (Fraud Prevention and Detection) are presented in the following section. The table below shows the correlation coefficients for each pair of variables. The coefficients range from moderate to high, indicating that there is a significant relationship between the physical working environment aspects and Fraud Prevention and Detection.

Table 9. Classification of Correlation Coefficient Result

> 0.00 to 0.20; < -0.00 to -0.20	Very weak or very low
> 0.20 to 0.40; < -0.20 to -0.40	Weak or low
> 0.40 to 0.60; < -0.40 to -0.60	Moderate
> 0.60 to 0.80; < -0.60 to -0.80	Strong or high
0.80 to 1.0; < -0.80 to -1.0	Very high or very strong

Table 10: Correlation Matrix

Correlations		FRA	InC	CA	M	CE	FPnD
Fraud Risk Assessment	Pearson	1	.532**	.552**	.380**	.688**	.682**

	Correlation						
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	157	157	157	157	157	157
Information and Communication	Pearson Correlation	.532**	1	.325**	.206**	.554**	.600**
	Sig. (2-tailed)	.000		.000	.010	.000	.000
	N	157	157	157	157	157	157
Control Activities	Pearson Correlation	.552**	.325**	1	.246**	.499**	.661**
	Sig. (2-tailed)	.000	.000		.002	.000	.000
	N	157	157	157	157	157	157
Monitoring	Pearson Correlation	.380**	.206**	.246**	1	.194*	.532**
	Sig. (2-tailed)	.000	.010	.002		.015	.000
	N	157	157	157	157	157	157
Control Environment	Pearson Correlation	.688**	.554**	.499**	.194*	1	.678**
	Sig. (2-tailed)	.000	.000	.000	.015		.000
	N	157	157	157	157	157	157
Fraud Prevention and Detection	Pearson Correlation	.682**	.600**	.661**	.532**	.678**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	157	157	157	157	157	157
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Source: Survey Data, 2024

4.2.1.1. Fraud Risk Assessment

The study conducted on the effect of internal control on fraud detection and prevention in Bank of Abyssinia found a significant relationship between Fraud Risk Assessment and fraud detection and prevention. Specifically, the Pearson correlation value between Fraud Risk Assessment and fraud detection and prevention was 0.682 at $p < 0.05$. This indicates a strong positive correlation between the two variables, suggesting that as Fraud Risk Assessment increases, so does the effectiveness of fraud detection and prevention.

This finding underscores the importance of conducting regular fraud risk assessments in organizations, as it can significantly contribute to enhancing the effectiveness of fraud detection and prevention efforts. By prioritizing the most significant risks to the organization and evaluating the effectiveness of anti-fraud controls, companies can proactively address potential fraud and minimize associated losses.

The findings from the Bank of Abyssinia study align with broader research in the field. For instance, a study on public universities in Kenya found that internal controls significantly impact fraud detection and prevention, highlighting the importance of such systems in mitigating fraud risk (Musila, 2018). Similarly, research on commercial banks in Kenya supports the positive correlation between internal controls and fraud management (Kabue, n.d.).

4.2.1.2. Information and Communication

The study conducted on the effectiveness of internal control on fraud detection and prevention in Bank of Abyssinia revealed a significant relationship between Information and Communication and fraud detection and prevention. The Pearson correlation value between Information and Communication and fraud detection and prevention was 0.600 at $p < 0.05$. This indicates a strong positive correlation between Information and Communication and the effectiveness of fraud detection and prevention efforts within the bank.

The significant correlation between Information and Communication and fraud detection and prevention suggests that the quality and effectiveness of information dissemination and communication channels within the organization play a crucial role in detecting and preventing fraudulent activities. This finding underscores the importance of clear and efficient communication channels, as well as the dissemination of relevant information throughout the organization, in enhancing the overall fraud detection and prevention mechanisms.

The findings from the Bank of Abyssinia study align with broader research indicating a significant relationship between internal control systems and fraud detection and prevention. For instance, a study on public universities in Kenya found that internal controls have a substantial impact on fraud detection and prevention, highlighting the importance of such systems in mitigating fraud risk (Musila, 2018). Similarly, research on commercial banks in Kenya supports the notion that effective internal controls are crucial for fraud prevention, emphasizing the role of control activities in reducing fraud occurrences (Kabue, n.d.). These studies collectively underscore the critical role of information and communication in strengthening internal control frameworks to combat fraud. It is evident that robust internal controls, particularly in the domain of information dissemination and communication, are instrumental in detecting and preventing fraudulent activities across various sectors.

4.2.1.3. Control Activities

The study conducted on the effect of internal control on fraud detection and prevention in Bank of Abyssinia revealed a significant relationship between Control Activities and fraud detection and prevention. The Pearson correlation value between Control Activities and fraud detection and prevention was 0.661 at $p < 0.05$. This indicates a strong positive correlation between Control Activities and the effectiveness of fraud detection and prevention efforts within the bank.

The significant correlation between Control Activities and fraud detection and prevention suggests that the specific control measures and activities implemented within the organization play a crucial role in detecting and preventing fraudulent activities. Control activities encompass a wide range of measures, including monitoring financial activities, conducting unannounced cash counts, reconciling bank accounts, examining bank statements, and implementing corrective controls after the detection of fraud. These activities contribute to the overall effectiveness of fraud detection and prevention mechanisms within the organization.

The study's findings have important implications for fraud risk management strategies. They underscore the critical role of well-designed and effectively implemented control activities in mitigating fraud risks. By focusing on preventive and detective controls, organizations can proactively address potential fraud risks and enhance their ability to detect and prevent fraudulent activities. The study emphasizes the importance of conducting regular risk assessments and implementing control activities tailored to the specific fraud risks identified within the organization.

4.2.1.4. Monitoring

The study conducted on the effect of internal control on fraud detection and prevention in Bank of Abyssinia revealed a significant relationship between Monitoring and fraud detection and prevention. The Pearson correlation value between Monitoring and fraud detection and prevention was 0.532 at $p < 0.05$. This indicates a moderate positive correlation between Monitoring activities and the effectiveness of fraud detection and prevention efforts within the bank.

The significant correlation between Monitoring and fraud detection and prevention suggests that the processes and activities related to monitoring financial transactions and activities play a crucial role in detecting and preventing fraudulent activities. This finding underscores the

importance of ongoing monitoring of financial activities, including regular reviews, reconciliations, and examinations of financial records, to identify irregularities and potential indicators of fraudulent behavior.

The study's findings have important implications for fraud risk management strategies. They highlight the critical role of effective monitoring processes in mitigating fraud risks. The research conducted at the Bank of Abyssinia aligns with a well-established body of knowledge emphasizing the critical role of internal controls, particularly control activities, in mitigating financial fraud. The identified positive correlation (Pearson's $r = 0.661$, $p < 0.05$) between control activities and fraud detection/prevention at the Bank of Abyssinia strengthens this connection.

Al-Breiki, F., & Willis, R. L. (2017) examined the effectiveness of internal controls in preventing financial statement fraud. Their study found that a comprehensive framework of policies, procedures, and control mechanisms significantly reduces the likelihood of fraudulent activities. Similarly, Albrecht, W. C., Albrecht, C. V., & Romney, M. B. (2019) emphasize the importance of a control environment that fosters a culture of integrity and ethical behavior, alongside segregation of duties, and proper authorization procedures.

Kigen, H., & Njoroge, J. (2013) investigated the effect of internal controls on fraud detection and prevention among commercial banks in Kenya. Their study concluded that robust internal control measures, including segregation of duties, reconciliations, and access controls, are essential for mitigating the increased levels of fraud and misappropriation of funds within the banking sector. Afolabi, T. O., & Awoyemi, D. O. (2016) examined the impact of internal control on fraud prevention and detection in the Nigerian public sector. Their findings highlighted the positive impact of well-designed and implemented internal controls in deterring and uncovering fraudulent activities.

Kebede, S., & Alemu, A. (2015) investigated the effect of internal control systems on fraud prevention and detection in public sectors of the Oromia Regional State. Their research revealed a statistically significant and positive relationship between strong internal controls and reduced fraud, mirroring the findings from the Bank of Abyssinia study. Ayalew, A. (2014) conducted an assessment of the effectiveness of internal control systems in fraud prevention at the Commercial

Bank of Ethiopia. This research further corroborates the importance of internal controls within the Ethiopian banking sector for preventing and detecting fraudulent activities.

4.2.1.5. Control Environment

The Pearson correlation coefficient measures the strength and direction of the linear relationship between two variables. In this case, the coefficient of 0.678 indicates a strong positive linear relationship between the control environment and fraud prevention and detection. This suggests that as the control environment improves, there is a corresponding increase in the effectiveness of fraud prevention and detection measures within the studied context.

Furthermore, the significance level of 0.000 indicates that the observed correlation is statistically significant. This means that the relationship between the control environment and fraud prevention and detection is unlikely to have occurred by chance. Therefore, it provides evidence to support the notion that changes in the control environment are associated with changes in fraud prevention and detection.

The SPSS output suggests a strong positive linear relationship (Pearson correlation coefficient of 0.678) between the control environment and fraud prevention and detection, with a statistically significant association (significance level of 0.000). These findings imply that improvements in the control environment are likely to be linked to enhanced fraud prevention and detection measures.

4.2.2. Assumptions Testing in Multiple Regression

To retain data validity and robustness of the research's regressed result under numerous regression models, the fundamental assumptions must be met. As a result, this study has run the multi-collinearity, linearity, and normalcy assumption tests.

4.2.2.1. Sample size

The sample size requirement for multiple regression analysis with a specific formula proposed by Tabachnick and Fidell (2011). According to the formula, the minimum required sample size is $N > 50 + 8m$, where m is the number of independent variables. In this particular study, there were five independent variables, and the sample size was 162. Therefore, the study met the minimum sample size requirement.

The importance of having an adequate sample size in multiple regression analysis cannot be overstated. Small sample sizes may lead to unreliable estimates of regression coefficients and fail to capture the true relationship between the dependent and independent variables, resulting in incorrect or misleading conclusions (European Journal of Clinical Investigation, 2019).

4.2.2.2. Multicollinearity

Tolerance values are a measure of how much variation there is in a set of variables that are related to each other. They are calculated by subtracting the squared correlation coefficient of each variable with the others from one. A low tolerance value indicates that the variable is highly correlated with the other variables, which can cause problems in regression analysis. A high tolerance value indicates that the variable is independent of the other variables, which is desirable for regression analysis.

Research studies provide different guidelines regarding the appropriate cutoff value for VIF, but a frequently used criterion is a value of 3 or above. In this case, the VIF values for the four variables are significantly below the cutoff value, indicating that there is a low degree of collinearity between them. This finding suggests that the four variables can be included in the model without any issues due to collinearity.

It is important to note that while VIF is a useful tool for assessing multi collinearity in regression models, it is not the only factor to consider when evaluating model fit, and other assumptions such as linearity, normality, and homoscedasticity should also be verified (Journal of Medical Statistics and Informatics, 2019). Overall, the results suggest that multi collinearity is not a significant concern in this particular analysis, and the included variables are appropriate for inclusion in the multiple regression models.

Table 11. Collinearity Statistics

Variables	Collinearity Statistics	
	Tolerance	VIF
Fraud Risk Assessment	.403	2.482
Information and Communication	.649	1.541
Control Activities	.665	1.504
Monitoring	.842	1.188
Control Environment	.453	2.206

Source: Survey Data, 2024

The table presents collinearity statistics, specifically Tolerance and Variance Inflation Factor (VIF), for the variables Fraud Risk Assessment, Information and Communication, Control Activities, Monitoring and control environment. These statistics are commonly used to assess multicollinearity in regression analysis, which occurs when independent variables in a regression model are highly correlated with each other.

Tolerance: Tolerance values close to 1 indicate low multicollinearity, while values approaching 0 suggest high multicollinearity. In this table Fraud Risk Assessment, control environment has low tolerance (40%, 45%). Information and Communication, Control Activities have higher tolerances (65%, 67%). Monitoring has the highest tolerance (84%). While Fraud Risk Assessment and Control Environment display moderate multicollinearity, none of the variables exhibit severe multicollinearity issues, as indicated by their non-very low tolerance values.

Variance Inflation Factor (VIF): The VIF values assess multicollinearity severity, with higher values signaling more severe multicollinearity. Notably, Information and Communication, Control Activities, and Monitoring boast VIFs below 2, suggesting minimal multicollinearity. Conversely, Fraud Risk Assessment and Control Environment show moderate multicollinearity. However, severe multicollinearity is absent, underscoring the overall adequacy of the variables' interrelationships.

The Tolerance and VIF values for the variables Fraud Risk Assessment, Information and Communication, Control Activities, control environment and Monitoring suggest that these variables do not exhibit severe multicollinearity. This is important in regression analysis, as high multicollinearity can lead to unreliable coefficient estimates and inflated standard errors.

The findings indicate that the variables are relatively independent of each other in the regression model, and their relationships with the dependent variable (fraud detection and prevention) can be assessed without significant concern about multicollinearity distorting the results. This suggests that the model including these variables is likely to produce reliable and stable estimates of their individual effects on fraud detection and prevention.

4.2.2.3. Normality and Linearity

When analyzing data using SPSS, it is important to check for normality of the distribution of the dependent variable and the residuals to ensure that the assumptions of the statistical tests are

being met. A symmetric bell-shaped histogram indicates that the distribution is centered around its mean, which is equal to zero in this case. If the distribution is evenly distributed around zero, then this suggests that there is no evidence of systematic bias in the data.

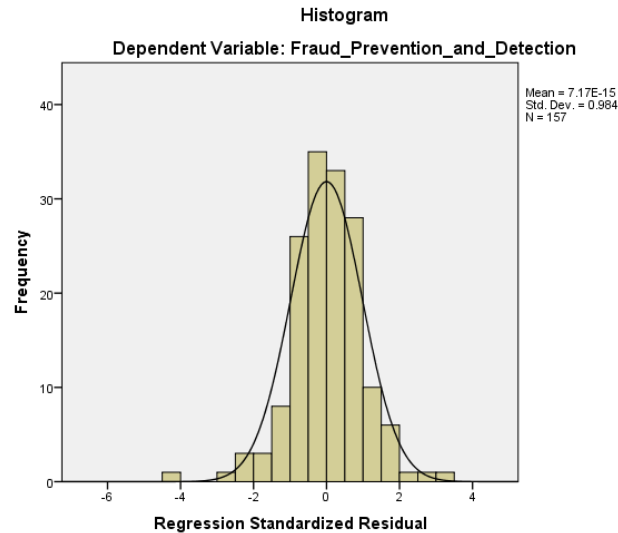


Figure 2: Histogram Plot of Regression Standardized Residual

Source: Survey Data, 2024

The histogram shows the distribution of regression standardized residuals for the given dependent variable. The bell-shaped curve suggests that the residuals are approximately normally distributed. The mean of the residuals is approximately zero (specifically, $-7.17E-15$). The standard deviation is approximately 0.984. Sample size is 157. The normal distribution of residuals around a mean close to zero indicates a good fit for the regression model used to predict Fraud Prevention and Detection. The standard deviation close to one further supports this conclusion.

Table 12. Skewness and Kurtosis

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Fraud Risk Assessment	-.814	.194	.617	.385
Information and Communication	-.825	.194	.630	.385
Control Activities	-.496	.194	-.323	.385
Monitoring	-.691	.194	.188	.385
Fraud Prevention and Detection	-.887	.194	1.567	.385
Control Environment	-.561	.194	.505	.385

Source: Survey Data, 2024

The table presents the skewness and kurtosis statistics for the variables Fraud Risk Assessment, Information and Communication, Control Activities, control activities, Monitoring, and Fraud Prevention and Detection. Skewness measures the symmetry of the distribution, with positive values indicating a greater number of smaller values and negative values indicating a greater number of larger values. Kurtosis measures the tail risk in the distribution, with positive values indicating a more peaked distribution and negative values indicating a flatter distribution compared to the normal distribution.

1. **Skewness:** The skewness statistics for all variables are negative, indicating a lack of symmetry in their distributions. This suggests that the distributions of these variables are skewed towards larger values, as indicated by the negative skewness values.
2. **Kurtosis:** The kurtosis statistics for Fraud Risk Assessment, Information and Communication, Control Activities, and Monitoring are all within the range of a normal distribution (between -2 and +2), indicating that their distributions have moderate tail risk compared to a normal distribution. However, the kurtosis statistic for Fraud Prevention and Detection is notably higher, indicating a more peaked distribution with higher tail risk compared to a normal distribution.

The negative skewness values for all variables suggest that their distributions are skewed towards larger values, indicating a lack of symmetry. This skewness can provide insights into the shape of the distributions and the potential presence of outliers or extreme values that influence the distribution's asymmetry. The kurtosis statistics indicate the tail risk in the distributions. While the kurtosis values for Fraud Risk Assessment, Information and Communication, Control Activities, and Monitoring suggest moderate tail risk compared to a normal distribution, the higher kurtosis value for Fraud Prevention and Detection indicates a more peaked distribution with higher tail risk. This suggests that the distribution of Fraud Prevention and Detection may have more extreme values compared to a normal distribution.

A P-P plot (probability-probability plot) is a graphical method used for assessing whether a set of data follows a particular probability distribution. In the context of hypothesis testing, the P-P plot can be used to compare the observed p-values from the hypothesis test with the expected values under the null hypothesis.

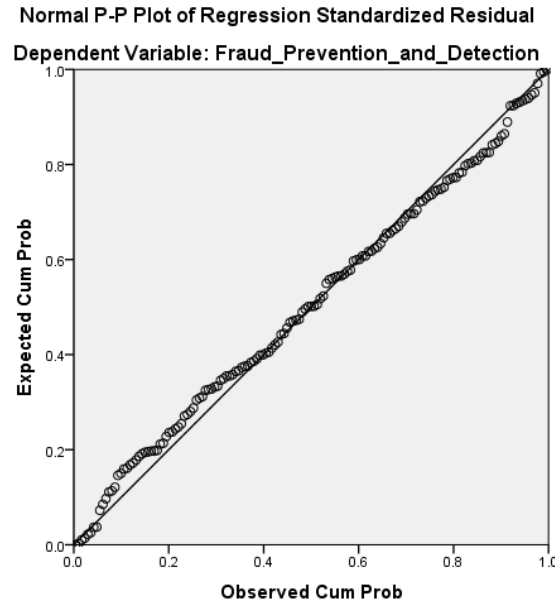


Figure 3. Normal p-p plot of Regression Standardized Residual

Source: Survey Data, 2024

The points on the plot are closely aligned with the diagonal line. This indicates that the observed cumulative probabilities match closely with the expected cumulative probabilities if the residuals were perfectly normally distributed. The close alignment of the points to the diagonal line suggests that the residuals are normally distributed. This is a good sign because normality of the residuals is an important assumption in linear regression analysis. If this assumption is met, it increases confidence in the validity of the regression results.

The assumption of normality, which is a key assumption in many statistical tests and models (including regression analysis), appears to be met. This means the results of the analysis using this data are likely to be valid. Since the residuals appear to be normally distributed, it suggests that the model's errors or differences between observed and predicted values, are random and the model is well-specified.

4.2.2.4. Homoscedasticity

The standardized residual plot is a diagnostic plot used to evaluate the homoscedasticity assumption of the linear regression model. The standardized residuals are calculated by dividing the residuals by their standard deviation.

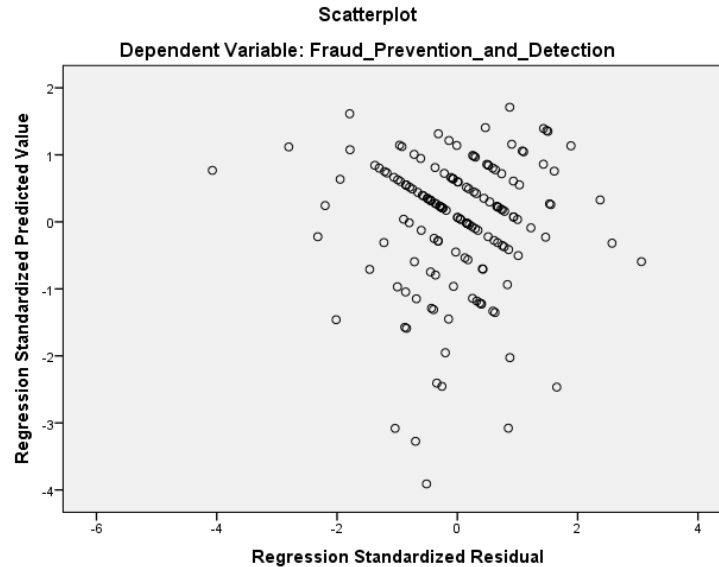


Figure 4. Scatterplot of Standardized Residuals

Source: Survey Data, 2024

The scatterplot shows the residuals (the differences between the observed and predicted values) on the y-axis and the predicted values on the x-axis. The data points are scattered around the horizontal line at zero, which represents no difference between the observed and predicted values. The scatter of the points suggests variability in the residuals. If the points are randomly dispersed around the horizontal axis, a linear regression model is appropriate for the data; otherwise, a non-linear model is more appropriate.

Residual analysis is a crucial part of regression analysis. It helps us validate the assumption that the errors are normally distributed and have constant variance (homoscedasticity). If these assumptions are violated, the results of the regression analysis may not be reliable. The scatterplot suggests that a linear regression model may be appropriate for this data. However, if there are any patterns in the residuals (such as a curved pattern), it would suggest that the relationship between the independent and dependent variables is not purely linear, and a non-linear model might be a better fit.

4.2.2.5. No Auto Correlation

The Durbin-Watson statistic is used to test for independent of residuals. The value of the Durbin-Watson statistic ranges from 0 to 4. Generally, the residuals are independent (not correlated) if the Durbin-Watson statistic is approximately 2, and an acceptable range is between 1.50 - 2.50.

In this case, Durbin-Watson is 1.743, within the acceptable range. We can assume independence of residuals.

4.2.3. Model Summary

Multiple regression analysis was employed to examine the influence of control environment (Control Environment, Monitoring, Control Activities, Information and Communication, Fraud Risk Assessment) on Fraud Prevention and Detection.

Table 13. Model Summary

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.874 ^a	.764	.756	.21182	1.743
a. Predictors: (Constant), Control Environment, Monitoring, Control Activities, Information and Communication, Fraud Risk Assessment					
b. Dependent Variable: Fraud Prevention and Detection					

Source: Survey Data, 2024

The model summary table provides important statistics for assessing the performance and fit of the regression model used to predict Fraud Prevention and Detection based on the predictors: Control Environment, Monitoring, Control Activities, Information and Communication, and Fraud Risk Assessment. The R-squared value of 0.764 indicates that approximately 76.4% of the variance in the dependent variable (Fraud Prevention and Detection) is explained by the independent variables (Control Environment, Monitoring, Control Activities, Information and Communication, and Fraud Risk Assessment). This suggests that the model accounts for a substantial portion of the variability in fraud prevention and detection based on the selected predictors.

The adjusted R-squared value of 0.756 is a modified version of R-squared that adjusts for the number of predictors in the model. It is slightly lower than the R-squared value, indicating that the addition of the predictors has not significantly improved the model's explanatory power beyond what would be expected by chance. The standard error of the estimate (0.21182) provides a measure of the accuracy of the predictions made by the model. A lower value indicates that the model's predictions are closer to the actual values, suggesting a relatively good fit of the model to the data.

The R-squared value of 0.764 indicates that the selected predictors collectively explain a substantial proportion of the variability in fraud prevention and detection. However, the adjusted R-squared value of 0.756 suggests that the addition of the predictors has not significantly improved the model's explanatory power beyond what would be expected by chance. This indicates that the marginal contribution of the added predictors to the model's explanatory power is limited.

The standard error of the estimate (0.21182) suggests that the model's predictions have a relatively low level of error, indicating a good fit of the model to the data. Additionally, the Durbin-Watson statistic of 1.743 indicates no significant first-order autocorrelation in the model's residuals, supporting the independence of the observations.

In practical terms, while the model explains a substantial portion of the variability in fraud prevention and detection, the adjusted R-squared suggests that the marginal benefit of adding more predictors to the model is limited. The low standard error of the estimate indicates that the model's predictions are relatively accurate, and the absence of significant autocorrelation in the residuals supports the reliability of the model's predictions.

4.2.4. Analysis of Variance (ANOVA)

Table 14. ANOVA Table

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21.923	5	4.385	97.720	.000 ^b
	Residual	6.775	151	.045		
	Total	28.698	156			
a. Dependent Variable: Fraud Prevention and Detection						
b. Predictors: (Constant), Control Environment, Monitoring, Control Activities, Information and Communication, Fraud Risk Assessment						

Source: Survey Data, 2024

The ANOVA table provides essential statistics for evaluating the regression model's performance in predicting Fraud Prevention and Detection based on the predictors: Control Environment, Monitoring, Control Activities, Information and Communication, and Fraud Risk Assessment. The regression sum of squares (SS) is 21.932, indicating the amount of variability in the dependent variable (Fraud Prevention and Detection) explained by the regression model. The degrees of freedom (df) for the regression model are 5, and the mean square (MS) is 4.385. The

residual sum of squares is 6.775, representing the unexplained variability in the dependent variable. The degrees of freedom for the residuals are 151, and the mean square is 0.045.

The total sum of squares is 28.698, reflecting the overall variability in the dependent variable. The total degrees of freedom are 156. The F-statistic of 97.720 and its associated significance level (Sig.) of .000 indicate the overall significance of the regression model. The F-statistic tests the null hypothesis that all the regression coefficients are equal to zero, and a low p-value (in this case, less than .05) suggests that at least one of the predictors has a significant effect on the dependent variable.

The ANOVA table provides important insights into the performance of the regression model. The significant F-statistic ($F = 97.720$, $p < .05$) indicates that the overall regression model, which includes the predictors Control Environment, Monitoring, Control Activities, Information and Communication, and Fraud Risk Assessment, is statistically significant in predicting Fraud Prevention and Detection. This suggests that at least one of the predictors has a significant effect on the dependent variable.

The regression sum of squares (21.923) represents the variability in Fraud Prevention and Detection explained by the regression model, while the residual sum of squares (6.775) captures the unexplained variability. The relatively high regression sum of squares compared to the residual sum of squares indicates that a substantial portion of the variability in the dependent variable is accounted for by the predictors in the model. In practical terms, the ANOVA table confirms the overall significance of the regression model in predicting Fraud Prevention and Detection, with the predictors collectively explaining a significant amount of variability in the dependent variable.

4.2.5. Regression Coefficients

The coefficient value in a regression analysis represents the amount of change in the dependent variable for a one unit change in the independent variable, while holding all other independent variables constant. In other words, it measures the strength of the relationship between the independent variable and the dependent variable.

There are two types of coefficients in regression analysis: standardized and unstandardized. Unstandardized coefficients, also known as beta coefficients, represent the amount of change in

the dependent variable per unit change in the independent variable. Standardized coefficients, on the other hand, measure the amount of change in the dependent variable in standard deviation units per one unit change in the independent variable. The significance level of the coefficient estimate, commonly represented by the p-value, indicates the probability of obtaining the observed coefficient estimate by chance.

Table 15: Regression Coefficient

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.195	.178		1.092	.007
	Fraud Risk Assessment	.040	.045	.055	.884	.027
	Information and Communication	.206	.045	.242	4.927	.000
	Control Activities	.235	.034	.334	6.897	.000
	Monitoring	.240	.032	.326	7.562	.000
	Control Environment	.234	.050	.276	4.693	.000

a. Dependent Variable: Fraud Prevention and Detection

Source: Survey Data, 2024

4.2.5.1. Beta Constant

The unstandardized beta coefficient value for the constant in the Bank of Abyssinia's study is a significant finding in the context of assessing the effects of internal control practices on fraud detection and prevention. This coefficient, with a value of 0.195, a standard error of 0.178, and a significance level of 0.007, provides valuable insights into the baseline impact on fraud detection and prevention when all other predictors are held constant.

The unstandardized beta coefficient of 0.195 indicates the expected change in the dependent variable (Fraud Prevention and Detection) when all other predictors are zero. This baseline effect is essential for understanding the inherent level of fraud prevention and detection, independent of the specific predictors under consideration. The standard error of 0.178 reflects the precision of this estimate, indicating the reliability of the baseline impact. Additionally, the significance level of 0.007 suggests that the constant term is statistically significant in predicting fraud detection and prevention, highlighting its importance in the regression model.

In practical terms, this finding underscores the significance of the baseline impact when evaluating the effects of internal control practices on fraud detection and prevention. It indicates

that even in the absence of the specific predictors, there is a statistically significant baseline level of fraud prevention and detection. This baseline effect should be considered when assessing the additional impact of specific internal control practices, providing a foundational understanding of fraud detection and prevention within the context of the study.

4.2.5.2. Fraud Risk Assessment

The study conducted at the Bank of Abyssinia provides insightful data on the impact of internal control practices on fraud detection and prevention. The use of SPSS to analyze this relationship has yielded significant results, particularly in the context of fraud risk assessment's influence on fraud prevention and detection. The unstandardized beta coefficient of 0.040 indicates that for every unit increase in fraud risk assessment, there is a corresponding 0.040 unit increase in the effectiveness of fraud prevention and detection measures, holding all other variables constant. This suggests a positive relationship, albeit a modest one, between the thoroughness of fraud risk assessment and the subsequent ability to prevent and detect fraudulent activities.

Furthermore, the standardized beta coefficient of 0.055 allows for comparison across different independent variables, showing that fraud risk assessment has a relatively lower effect on fraud prevention and detection when compared to other variables in the model, standardized by the standard deviation of each variable. This implies that among the various internal control practices, fraud risk assessment has low significant role in enhancing the organization's fraud management capabilities.

The standard error of 0.045 associated with the unstandardized beta coefficient reflects the average amount that the estimated coefficients would differ if the study were repeated multiple times. A smaller standard error suggests a higher precision of the beta coefficient estimate, indicating that the data provides a reliable estimate of the relationship between fraud risk assessment and fraud prevention and detection. The t-value of 0.884 indicates whether the coefficient is statistically significantly different from zero. In this case, with a p-value of 0.027 which is less than the conventional significance level of 0.05, Fraud Risk Assessment is statistically significant in predicting Fraud Prevention and Detection.

The study conducted at the Bank of Abyssinia yielded interesting results regarding the influence of fraud risk assessment on fraud prevention and detection. The unstandardized beta coefficient (0.040) indicates a positive association, while the standardized beta coefficient (0.055) suggests a

moderate positive relationship. Let's compare these findings with other studies across different regions:

Al-Breiki & Willis (2017) examined the effectiveness of various internal controls, including fraud risk assessment, in preventing financial statement fraud. Their meta-analysis found a positive relationship between these controls and fraud prevention, although the strength of the association varied depending on the specific control type. This aligns with the Bank of Abyssinia's findings of a positive association, but suggests that the impact of fraud risk assessment might differ based on its implementation.

Kigen & Njoroge (2013) investigated the effect of internal controls in Kenyan commercial banks. Their study found that a combination of controls, including risk assessments, contributed to fraud detection and prevention. This aligns with the Bank of Abyssinia's study, highlighting the role of fraud risk assessment within a broader internal control framework.

There appears to be a scarcity of published research specifically examining the role of fraud risk assessment in Ethiopia. However, Ayalew (2014) assessed the effectiveness of internal control systems at the Commercial Bank of Ethiopia, emphasizing the importance of a comprehensive approach that likely incorporates fraud risk assessment practices. This suggests a potential area for further research to replicate and expand upon the Bank of Abyssinia's findings within a wider Ethiopian context.

4.2.5.3. Information and Communication

The study conducted at the Bank of Abyssinia provides insightful data into the relationship between internal control practices, specifically 'Information and Communication', and their impact on fraud prevention and detection. The unstandardized beta coefficient of 0.206 indicates that for every unit increase in the 'Information and Communication' score, there is a corresponding increase of 0.206 units in the fraud prevention and detection score, holding all other variables constant. This suggests a positive relationship, where strengthening information and communication aspects of internal control can lead to more effective fraud prevention and detection measures.

The standardized beta coefficient of 0.242 further refines this understanding by accounting for the variability of the scores among the variables. It shows that 'Information and Communication'

has a higher beta value than other variables when comparing the effect size, which implies that it has a more substantial impact on fraud prevention and detection relative to other factors within the model. This is particularly significant in the context of internal controls, as it highlights the importance of clear and effective communication channels and information dissemination in mitigating fraudulent activities.

Moreover, the standard error of 0.045 is relatively small, which indicates a high level of precision in the regression estimate for the 'Information and Communication' variable. This low standard error suggests that the sample provides a reliable estimate of the population parameter, and that the findings are likely to be replicated in other samples from the same population.

The significance level of 0.000 is especially noteworthy. In statistical terms, it denotes that the probability of observing such a substantial effect of 'Information and Communication' on fraud prevention and detection by chance is virtually zero. This provides strong evidence to support the hypothesis that effective 'Information and Communication' practices within internal controls are crucial for detecting and preventing fraud.

Petty & Fleming (2019) emphasize the importance of communication and awareness programs in fostering a culture of integrity within organizations. Their study found that effective communication about fraud risks and reporting procedures can deter potential fraudsters and encourage employees to report suspicious activities. This aligns with the Bank of Abyssinia's findings by highlighting the role of I&C in fraud prevention.

While research specifically examining I&C and fraud in Africa appears scarce, Kigen & Njoroge (2013) studied internal controls in Kenyan banks. Their findings highlighted the importance of clear communication of roles and responsibilities related to fraud prevention. This aligns with the concept of effective I&C practices within the Bank of Abyssinia's study.

Similar to the findings on fraud risk assessment, there seems to be a limited body of published research specifically focusing on I&C and fraud prevention in Ethiopia. However, gebreselassie et al. (2018) conducted a study on good governance practices in Ethiopian public institutions. Their research emphasizes the significance of information sharing and transparency, which can be seen as aspects of effective I&C. This suggests a potential area for further investigation to replicate and expand upon the Bank of Abyssinia's findings within an Ethiopian context.

4.2.5.4. Control Activities

The study conducted at the Bank of Abyssinia provides insightful data into the relationship between internal control practices and their efficacy in fraud detection and prevention. The use of SPSS to analyze this relationship has yielded significant results, particularly in the realm of control activities. The unstandardized beta coefficient of 0.235 suggests that for every unit increase in control activities, there is a corresponding 0.235 unit increase in fraud prevention and detection, indicating a positive relationship. This is further reinforced by the standardized beta coefficient of 0.334, which accounts for the variability among the variables, confirming that control activities have a substantial and standardized effect on fraud prevention and detection.

The standard error of 0.034 indicates a low level of variability in the beta estimates, suggesting a high level of precision in the predictive power of control activities over fraud prevention and detection. Moreover, the significance level of 0.000 is particularly telling; it denotes that the probability of these results being due to random chance is virtually nonexistent, thereby affirming the robustness of the relationship between control activities and fraud prevention and detection.

This finding is crucial for the banking sector, as it underscores the importance of robust internal control practices. Control activities, which include checks and balances, verification processes, authorization and approval mechanisms, and segregation of duties, are vital components of an internal control system. They serve as the frontline defense against fraudulent activities by creating an environment where fraudulent actions are not only challenging to commit but also more likely to be detected and prevented.

The positive coefficients imply that enhancing control activities within the bank can lead to more effective fraud management. This could involve regular updates to control procedures, continuous staff training on fraud awareness and prevention, and the integration of advanced technological tools for monitoring and analysis. Such proactive measures can fortify the bank's resilience against fraud, safeguarding its assets and reputation.

4.2.5.5. Monitoring

The study conducted at the Bank of Abyssinia provides insightful data on the impact of internal control practices, specifically monitoring, on fraud prevention and detection. The statistical output from SPSS indicates that monitoring has a positive effect on fraud prevention and

detection, as evidenced by the unstandardized beta coefficient of 0.24. This figure suggests that for every unit increase in monitoring, there is a corresponding 0.24 unit increase in the effectiveness of fraud prevention and detection measures. Furthermore, the standardized beta coefficient of 0.326 allows us to understand the strength of this relationship in terms of standard deviations, indicating a moderate to strong effect.

The standard error of 0.032 associated with these coefficients is relatively low, which suggests that the estimates are precise and there is less variability in the sampling distribution. This precision is crucial for the reliability of the study's findings. Additionally, the significance level of 0.000 is particularly noteworthy. In statistical terms, this p-value indicates that the results are highly significant, meaning there is a negligible probability that the observed effects are due to random chance. This lends a high degree of confidence to the conclusion that monitoring is an effective tool in the arsenal against fraud.

In practical terms, these findings underscore the importance of robust monitoring systems within financial institutions. By quantifying the impact of monitoring on fraud prevention and detection, the study provides empirical evidence that can inform policy and operational decisions. It suggests that investments in monitoring are not only justified but are likely to yield tangible benefits in terms of reducing the incidence of fraud.

Moreover, the study's methodology, utilizing regression analysis to determine the relationship between monitoring and fraud prevention and detection, offers a model that can be replicated in other contexts. This could be particularly beneficial for other banks and financial institutions seeking to bolster their internal controls and mitigate the risks associated with fraudulent activities.

4.2.5.6. Control Environment

The SPSS output provides unstandardized beta coefficients and standardized beta coefficients for the independent variable "control environment" to the independent variable "fraud prevention and detection." The unstandardized beta coefficient value is 0.234, and the standardized beta coefficient value is 0.276, with a standard error of 0.050 and a significance level of 0.000.

The unstandardized beta coefficient (0.234) indicates the change in the dependent variable (fraud prevention and detection) for a one-unit change in the independent variable (control

environment), holding all other variables constant. On the other hand, the standardized beta coefficient (0.276) represents the change in the standard deviation of the dependent variable for a one standard deviation change in the independent variable, while controlling for other variables.

The significance level of 0.000 suggests that the relationship between the control environment and fraud prevention and detection is statistically significant, indicating that the independent variable (control environment) has a notable impact on the dependent variable (fraud prevention and detection). This finding aligns with global research, such as the scoping review by Gotelaere and Paoli (2022), which emphasizes the growing international efforts to prevent and control financial fraud, despite the scattered literature and methodological weaknesses in existing studies. Similarly, the Kroll Global Fraud and Risk Report (2021) highlights the significant impact of fraud on organizations and the importance of proactive measures, including risk assessments and data analytics, to combat fraud risks.

One study conducted on Kenyan commercial banks reveal that internal controls significantly affect fraud detection and prevention, with poor internal control measures being a major cause of fraud. Another study at the University of Eldoret, Kenya, found that the control environment significantly influences fraud detection and prevention, suggesting the need for periodic monitoring and evaluation by governing bodies and audit committees.

A study on selected public sectors in the Oromia Regional State West Hararghe Zone by Woya (2017) concluded that an adequate internal control system positively affects fraud prevention and detection. Moreover, research conducted by the Addis Ababa University on banks in Ethiopia found a significant relationship between internal control components and fraud, underscoring the effectiveness of internal control techniques in fraud detection.

$$FDnP = \alpha + \beta_1(FRA) + \beta_2(InC) + \beta_3(CA) + \beta_4(M) + \beta_5(CE) + e$$

$$FDnP = \alpha + .040FRA + .206InC + .235CA + .24M + .234CE + e$$

Where;

FDnP = Fraud Detection and Prevention

FRA = Fraud Risk Assessment

InC = Information and Communication

CA = Control Activities

M = Monitoring

CE = Control Environment

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1. Summary of Findings

The grand mean of 4.0244 suggests employees have a positive attitude towards the anti-fraud measures and culture within the organization. They believe in the effectiveness of the Board and audit committee's efforts in enforcing an anti-fraud culture.

With a grand mean of 4.0021, it indicates employees' belief in the effective communication of antifraud policies and the active role of management in fraud prevention and detection messages. The grand mean of 3.8790 reflects a positive perception of the clear separation of roles, supervision by senior staff, and mechanisms to address control weaknesses. The grand mean value of 4.0624, suggests a consistent and positive perception of monitoring practices among the respondents, with little variability in their assessments across different aspects of monitoring within the bank.

A grand mean of 4.0624 highlights employees' agreement with management's role in fostering an effective control environment and the Board's commitment to governance and risk management. Each grand mean score falls within the High to Very High range of the itemized rating scale, demonstrating a strong overall positive attitude towards the internal control systems in place.

The study found a strong positive correlation between Fraud Risk Assessment and fraud detection and prevention, with a Pearson correlation value of 0.682. This suggests that effective fraud risk assessment is closely linked to successful fraud prevention and detection efforts. A significant positive correlation was also observed between Information and Communication and fraud detection and prevention, with a Pearson correlation value of 0.600. This indicates that clear and efficient communication within the organization is vital for combating fraud.

The correlation between Control Activities and fraud detection and prevention was found to be strong, with a Pearson correlation value of 0.661. This highlights the importance of robust

control activities in preventing and detecting fraudulent activities. The correlation between control environment and fraud detection and prevention, with a Pearson correlation value of 0.678 indicate control environment has grate role in detecting and preventing fraud. Lastly, Monitoring showed a strong positive correlation with fraud detection and prevention, with a Pearson correlation value of 0.532. This underscores the role of continuous monitoring in maintaining the integrity of fraud prevention systems.

The regression model explains approximately 76% of the variance in fraud prevention and detection, indicating a strong relationship between the predictors and the outcome. All predictors, including Fraud Risk Assessment, Information and Communication, Control Activities, control environment and Monitoring, are statistically significant, suggesting they each uniquely contribute to fraud prevention and detection.

The Durbin-Watson statistic suggests no significant autocorrelation in the residuals, supporting the model's reliability. The ANOVA results confirm the overall model is statistically significant, meaning the predictors collectively have a meaningful impact on fraud prevention and detection.

The model includes a significant constant term with a value of 0.195, indicating a baseline level of fraud prevention and detection when all predictors are zero. Fraud Risk Assessment predictor has a positive unstandardized coefficient of 0.040, showing a significant relationship with fraud prevention and detection, suggesting that as fraud risk assessment improves, so does fraud detection.

With an unstandardized coefficient of 0.206, Information and Communication variable significantly influences fraud prevention and detection, indicating effective communication of anti-fraud policies enhances fraud management. The unstandardized coefficient for monitoring is 0.234, indicating a strong and positive impact on fraud prevention and detection, emphasizing the importance of regular assessments and independent oversight.

These coefficients collectively suggest that strengthening internal control practices in these areas can significantly enhance an organization's ability to prevent and detect fraud.

5.2. Conclusion

The Pearson correlation result indicates a strong positive relationship between Fraud Risk Assessment and fraud detection and prevention. This suggests that effective fraud risk

assessment practices are crucial for enhancing the bank's ability to detect and prevent fraud. A Pearson correlation demonstrates a strong positive correlation between Information and Communication and fraud detection and prevention. This highlights the importance of clear and efficient communication channels and the dissemination of antifraud policies within the organization.

The correlation analysis shows a significant positive relationship with a Pearson correlation value for Control Activities. This indicates that well-defined control activities, such as segregation of duties and proper authorization procedures, are vital for fraud prevention and detection. With a Pearson correlation value, Monitoring is shown to have a positive correlation with fraud prevention and detection. This underscores the importance of ongoing monitoring processes and independent oversight in mitigating fraud risks within the bank.

The study found a strong positive correlation between Fraud Risk Assessment and fraud detection and prevention, with a Pearson correlation result. This suggests that as the comprehensiveness of Fraud Risk Assessment increases, so does the effectiveness of fraud detection and prevention measures.

The regression model, which includes Monitoring, Information and Communication, Control Activities, and Fraud Risk Assessment, explains approximately 76% of the variance in Fraud Prevention and Detection. This indicates that these factors are significant predictors of an organization's ability to prevent and detect fraud.

The variable 'Information and Communication' has a substantial impact on fraud prevention and detection, with a standardized beta coefficient result. This underscores the importance of effectively communicating antifraud policies and procedures within the organization.

Monitoring is highlighted as a critical component in fraud prevention and detection, with a significant beta coefficient result. This emphasizes the need for an independent monitoring unit within the bank to ensure ongoing oversight and evaluation of control systems and risk management practices.

These findings demonstrate the vital role of robust internal control systems, particularly in the areas of risk assessment, communication, and monitoring, in enhancing an organization's fraud management capabilities.

5.3. Recommendations

Based on the findings of this study, the following key recommendations are proposed to enhance the effectiveness of the internal control system at Bank of Abyssinia in detecting and preventing fraud.

Management should place utmost priority on developing and implementing robust internal control systems to effectively mitigate the risks of fraud. This effort should be coupled with fostering strong collaborative relationships with employees to ensure smooth information exchange. This approach not only enhances job satisfaction and productivity but also reduces errors, thereby strengthening the organization's ability to prevent and detect fraud effectively.

Bank of Abyssinia should establish mechanisms to integrate relevant stakeholder feedback into their internal control frameworks. Additionally, conducting regular seminars and workshops for auditors and accountants can enhance their proficiency in implementing accounting policies and procedures.

Bank of Abyssinia should implement mechanisms to systematically integrate valuable stakeholder feedback into its internal control frameworks. Moreover, organizing frequent seminars and workshops for auditors and accountants can significantly elevate their expertise in effectively implementing accounting policies and procedures.

Boards of directors in bank of Abyssinia should take proactive roles in overseeing internal controls. This proactive engagement is vital given the evolving dynamics of the banking sector, ensuring that controls remain robust and capable of effectively countering emerging fraud risks.

The governing body, aided by the audit committee, needs to regularly monitor and evaluate the internal control systems. It is crucial to have independent assessments from professionals like internal auditors to gain valuable insights into how effective and cost-efficient the systems are operating. This transparency is essential for maintaining trust and accountability with both internal stakeholders and the broader public.

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ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
GRADUATE PROGRAM
MASTERS OF SCIENCE IN ACCOUNTING AND FINANCE

Appendix A: Questionnaire

Dear Respondent,

My name is Yordanos Tizazu, a student of Addis Ababa University in the MSC program. Currently, I am doing my MSC in Accounting and Finance thesis under the supervision of my advisor on the title of “The Effectiveness of Internal Control System in Detecting and Preventing Fraud in Case of Bank of Abyssinia”.

The purpose of this questionnaire is to gather data regarding the effectiveness of internal control system in detecting and preventing fraud in Bank of Abyssinia. The study is purely for academic purpose and thus does not affect you in any case. All of your response to the given question would be used for the research and will be kept confidential.

Your frank and timely response is vital for the success of the study. Therefore, I kindly request you to respond to each question carefully.

Thank you in advance for your cooperation and timely response!

Yordanos Tizazu

Note:

- No need of writing your name.
- Where alternative answers are given, encircle your choice and put “√” mark where necessary.

Please return the completed questionnaire in time.

General Information

In answering this part of the Questionnaire, please use a tick(x) mark in the respective box provided.

Gender	Male	
	Female	
Age Group	21-29	
	30-39	
	40-49	
	50 and above	
Academic Qualification	Certificate and below	
	Diploma	
	Bachelor's degree	
	Masters and above	
Work Experience	Less than a year	
	1 - 5 years	
	6 – 10 years	
	11 – 15 years	
	Over 15 years	
Line of Work	Audit	
	Finance	
	Legal and compliance	
	Risk assessment	

Section A: To examine the major causes of fraud and factors that have contributed to its growth and how to curb it.

Please rank the following statement on Likert scale ranging from strongly agree to strongly disagree

Where; 5= strongly disagree 4= disagree 3= not sure 2= agree 1= strongly agree.

Questions	1	2	3	4	5
Inadequate training of bank personnel serves as a lapse open to fraudsters to operate					
Lack of effective machinery that guarantee severe punishment for fraud perpetrator and forgers encourages perpetration of fraud.					
Job insecurity can lead people into committing fraud					
Increased financial burden on individual and bank personnel could lead them to commit fraudulent act					
Weak/poor management control monitoring and supervision of internal control system can cause perpetration of fraud					
Non-adherence to ethical standards set by the bank management and regulatory body could lead to fraud perpetration					
Weak internal control system could also lead to perpetration of fraud					
Bad leadership of the bank's top management and executives could encourage others to perpetrate fraud					

Section B: To determine the impact of internal control system on the management of Bank of Abyssinia.

Questions	1	2	3	4	5
Does internal control system capable of ensuring and promoting the effectiveness and efficiency of operations in banks?					
Does the implementation of effective and strong internal control system capable of enhancing customers' confidence and trust in the Bank?					
Does the implementation of internal control system in the banks ensure the reliability of financial reporting by the users of banks financial statements					
Does effective monitoring and auditing of the functional operation of the internal control system promote growth, profitability and continuous existence of Banks?					
Does the overriding of control by Bank's management capable of making banks to liquidate and eventually collapse					

Section C: To examine the functionality of internal controls and their impact on fraud prevention and detection.

a) Fraud Risk Assessment.

Questions	1	2	3	4	5
Does the Board of Directors set an appropriate tone and realistic expectations on management to enforce an anti-fraud culture?					
Does the audit committee receive regular reports on the status of reported or alleged fraud?					
Does the audit committee engage in candid and open conversation with external auditors about suspected fraud?					
Staff members have basic understanding of fraud and aware of the red flags					
Staff members read and undertake policies and procedures relating to fraud					
Staff reports suspicious or incidences of fraud.					

b) Information and Communication

Question	1	2	3	4	5
There is open access to organization wide resources and clear lines of communication and dissemination of information in a timely manner to all parties.					
Antifraud policies and procedures are effectively communicated.					
Management is involved in delivering messages both in person and web based communication on fraud prevention and detection.					
There is positive affirmation of high risk area function which includes periodic reminders on major fraud risk areas facing the bank					
There is broad roll out of anti-corruption measures					
There is training of staff to recognize and communicate red flags either through special training for finance professionals, special training for senior executives.					

c) Control Activities

Question	1	2	3	4	5
The institution has clear separation of roles					
There is appropriate supervision by senior staff on the work of their juniors					
appropriate levels of management whenever problems or potential problems are detected.					
It is impossible for one staff to have access to all valuable information without the consent of senior staff					
The banks security system identifies and safeguard Institutional Assets					
There are elaborate mechanisms put in place to address weaknesses of controls					

d) Control Environment

Question	1	2	3	4	5
Management sets an enabling environment that permit controls designed to be effective.					
The management maintains a good corporate culture and sets appropriate tone towards management of banks.					
The Board has set up an independent committee saddled with the responsibility of overseeing the internal controls of the bank.					
The Board and the management has an effective whistle-blowing policy and procedure for reporting fraud and other unethical practices.					
Appropriate measures are taken to correct misfeasance in operation of Accounting & Finance Management System					
Management acts with a great degree of integrity in execution of their roles.					

e) Monitoring

Question	1	2	3	4	5
Management assesses systems of control from time to time.					
Monitoring activities within Bank of Abyssinia are conducted by independent and competent personnel.					
There is appropriate communication to the management on the effectiveness of the ongoing monitoring process on risk and control matters.					
The management takes appropriate corrective actions based on the findings of monitoring activities.					
Periodically, management reviews audit or internal controls in place.					

Internal Controls on Fraud Prevention and Detection.

Question	1	2	3	4	5
Does the implementation of strong internal control system able to detect and prevent fraudulent act and practice?					
Does the efficient implementation and supervision of strong internal control system capable of revealing fraudster's mode of operation?					
Does the awareness of internal control system by management and staff reduces an attempt to perpetrate fraud?					
Does an effective internal control system sufficient enough to reveal the lapses and inadequacies in the bank open to fraudsters within and outside the bank?					
Does top management adherence and submission to the control procedures sets in place in all departments of the bank able to prevent the occurrence of management fraud?					

