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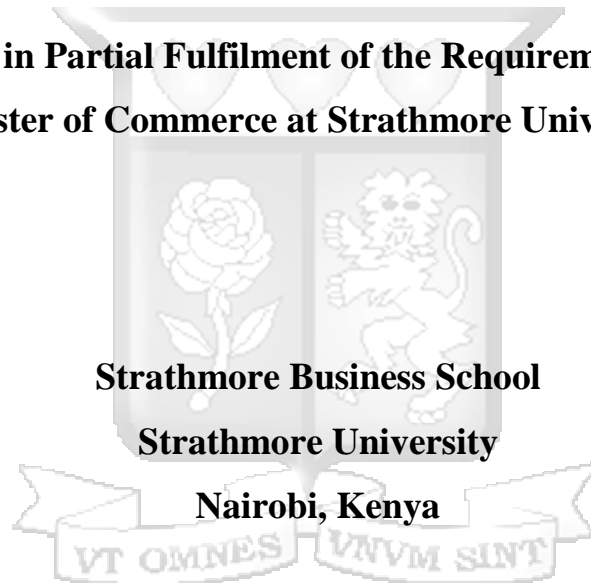
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**Effectiveness of Internal Control Systems on Fraud Detection and Prevention  
Among Small and Medium-Sized Enterprises in Nairobi Kenya.**

**Lauryn Akinyi Opiyo**

**A Thesis Submitted in Partial Fulfilment of the Requirements for The Degree of  
Master of Commerce at Strathmore University.**



**May 2023**

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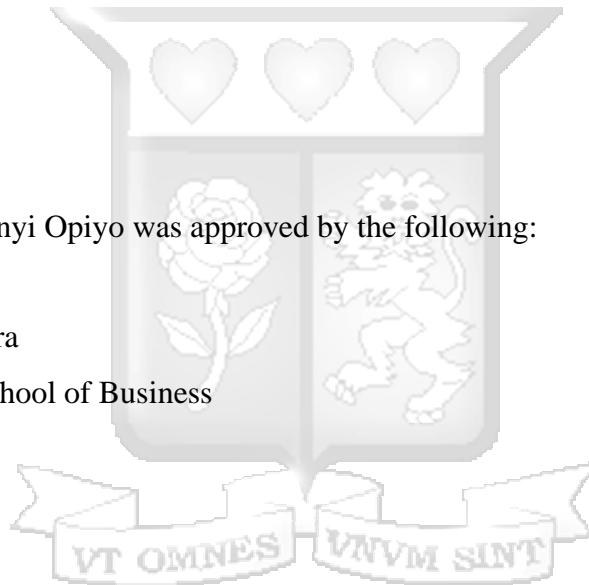
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## ABSTRACT

Despite the government's commitment to the ease of doing business, there has been debate over why small and medium-sized enterprises are experiencing a downward trend in business survival. Statistics from the Economic Survey of 2021 show that small and medium-sized enterprises have grown significantly in Kenya during the past 10 years, accounting for around 96 percent of all business enterprises in the country. However, 90% of new businesses fail to survive past their third anniversary. The main objective of this study, therefore, was to investigate the effect of internal control systems on fraud detection and prevention among SMEs in Nairobi, Kenya; specifically to establish the effect of the control environment on fraud detection and prevention among SMEs in Nairobi, Kenya; to establish the effect of risk assessment mechanisms in fraud detection and prevention among SMEs in Nairobi Kenya; and, to establish the effect of monitoring in fraud detection and prevention among the SMEs in Nairobi Kenya. The study was anchored on Reliability and Fraud Diamond Theories. The study adopted an explanatory research design, also known as an experimental design. The group of interest was all the SMEs in the Nairobi Central Business District registered with Nairobi City County. According to the Nairobi City County License Register of 2021, there are 993 business enterprises in the Nairobi Central Business District with between 10 and 99 employees. Therefore, the target population of this study was 993 managers/owners of business enterprises in the Nairobi Central Business District. Yamane's (1967) formula was utilized to determine the sample size for the study in this circumstance. 400 owners/managers from the target population served as the respondents for the study. Primary data was used in the study, and semi-structured questionnaires were used to gather it. To evaluate the accuracy and dependability of the research instrument, a pilot test was carried out for the study. To assess this data, various data analysis techniques were used. Additionally, descriptive statistics, as well as inferential statistics, were used to examine the quantitative data. SPSS version 28 was used to complete the data analysis task. The inferential statistics used were factor analysis and ordinal (ordered) logistic regression. The results were that there was a positive correlation between risk assessment and monitoring and fraud detection and prevention among SMEs in Nairobi Kenya. However, there was a weak correlation between the control environment and fraud detection and prevention among SMEs in Nairobi, Kenya. This study contributes to theory by building on the theoretical framework such as the Fraud Diamond theory and improving on the understanding of internal control systems, and the possible effect ICS could have on fraud detection and prevention. Empirically, the study guides management practices by giving insights on how to close the gaps in accounting requirements and other laws that SMEs employ to manipulate profits and deceive investors. The findings of this study were limited to the ICS components of the COSO framework. The study was also limited to data collected using an explanatory research design yet fraud detection and prevention may be affected by technological advancements and unprecedented occurrences which may affect how business is carried out in organizations.

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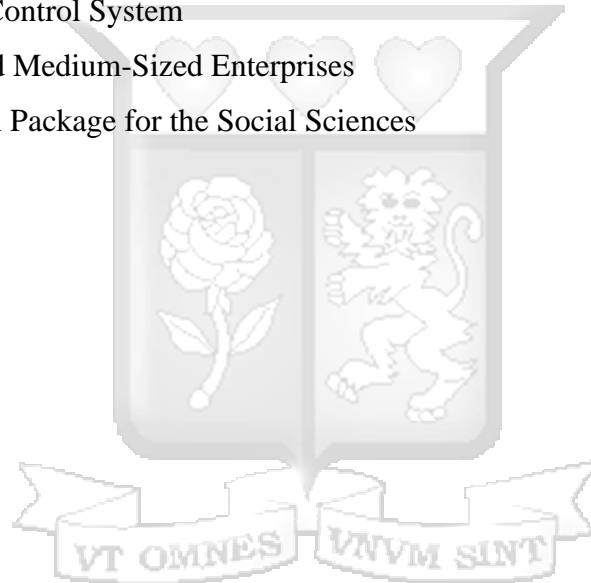


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## LIST OF ABBREVIATIONS AND ACRONYMS

- AICPA** : American Institute of Certified Public Accountants
- ANOVA** : Analysis of Variance
- BOD** : Board of Directors
- CBD** : Central Business District
- COSO** : Committee of Sponsoring Organizations.
- FD** : Fraud Detection
- FP** : Fraud Prevention
- GDP** : Gross Domestic Product
- ICS** : Internal Control System
- SMEs** : Small and Medium-Sized Enterprises
- SPSS** : Statistical Package for the Social Sciences



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## DEDICATION

I dedicate this thesis to God, I am entirely grateful for life, good health and the firm support He placed on my path, enabling me to complete. To my husband Brian, for his endless support and constant reminder that I have everything it takes to reach the finish line, to my sisters, Cynthia, Valerie and Yvonne and parents, Mr. and Mrs. Opiyo for their prayers and encouragement, and to my niece Njeri and nephew Leroy, as a source of encouragement to diligently pursue their education to the highest point possible.



## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Small and medium-sized enterprises (SMEs) around the world are important for economic growth (Aminu & Shariff, 2018). SMEs are regarded as the foundation of economic growth in most nations since they are major drivers of innovation, employment, and entrepreneurial skills. 95 percent of all businesses worldwide are small and medium-sized enterprises, which also account for 55 percent of global production and 66 percent of all employment (Afrifa & Padachi, 2019). A thriving and robust SME sector is therefore seen as essential for economic growth and long-term competitive advantage at the local, regional, and global levels. Concerns regarding corporate accountability have increased over the past ten years, which is related to the requirement for effective risk management and fraud control (Cowling & Liu, 2020).

Internal control systems are the procedures put in place by an organization to ensure that its objectives, aims, and missions are fulfilled. They are a set of rules and guidelines that an organization adopts to make sure that its transactions are handled properly to prevent theft, waste, and improper use of its resources. Internal control systems are procedures created and implemented by management, those in charge of governance, and other personnel to reasonably assure that an entity will achieve its goals regarding the accuracy and dependability of its financial reporting, the effectiveness and efficiency of its operations, and compliance with all applicable laws and regulations (Mwindi, 2018). It is important to note that internal controls only give a company's management and board of directors a fair amount of assurance—not an absolute guarantee—that the organization's goals will be met. "The limits innate in all systems of internal control reduce the chance of achievement" (Hayes et al., 2015). To achieve performance and organizational goals, minimize resource loss, enable the creation of trustworthy reports, and assure compliance with laws and regulations, organizations build systems of internal control. An organization's entire

network of mechanisms is designed to give a reasonable level of assurance that its goals will be met together form an internal control system.

The effectiveness and efficiency of operations, the dependability of financial reporting, and compliance with relevant rules and regulations are all advantages of an internal control system. Small and medium-sized businesses make up the informal sector, which has been acknowledged to play a significant part in Kenya's economy and create many of the country's necessary job opportunities. According to studies, the industry has the essential capacity to reduce poverty by generating revenue and employment possibilities (Webster, 1991). The Kenyan government has recognized the importance of small and medium-sized enterprises in addressing the country's rising unemployment rate. In its sessional papers 1 and 2 of 1986 and 1992, the Kenyan government addressed this problem.

This study has examined over 20 articles about the role of internal control in preventing and detecting financial crimes, notably fraud, that were written by seasoned academics and published in some of the top journals in various countries. Most of them recommend internal control as a key tool for reducing fraud in both the public and private sectors. Despite the internal controls in place, fraud continues to occur in organizations. Therefore, by providing fraud prevention and investigative tactics, internal controls can aid in the prevention and detection of fraud.

Locally, Wanjala and Riitho (2020) analyzed the relationship between the implementation of internal controls and the mitigation of fraud among the Association of Savings and Credit Cooperatives of Kenya (Saccos). To achieve this goal, the study's specific objectives were formulated in line with the five components of the Internal Control System. Structured questionnaires were used to collect data. The collected data were analyzed by use of ordinary least squares regression. According to the study's findings, all the internal control system variables mentioned greatly affected the mitigation of fraud among the Saccos in Kenya. The study concentrated on Saccos as opposed to this, study which sought to investigate the effect of internal control systems on fraud detection and prevention among SMEs. This, therefore, presents a location-contextual gap that this study sought to fill. Muhunyo and Jagongo (2018) conducted a study to investigate the impacts of risk assessment, risk investigation, control conditions,

monitoring, and collaboration on fraud detection and prevention. A sample of 96 employees and a descriptive research methodology was used in the study. The results of the study demonstrated that teamwork, risk investigation, control activities, monitoring, and appraisal of risks all had a favorable impact on fraud detection and prevention. The study concentrated on public sector entities as opposed to this study which sought to investigate the effect of internal control systems on fraud detection and prevention among SMEs. This, therefore, presents a location-contextual gap that the current study sought to fill.

Globally, Adeleke et al. (2019) studied the impact of internal control on fraud prevention Nigerian private sector. Guided questionnaires were used to collect the data from the respondents. The collected data was analyzed by using a simple percentage with a significance level of 5% and regression (social science statistical software package). The results showed that among the three independent variables tested during the study, the constant coefficient gave a positive value of 0.046, which means that if all independent variables remained constant, it represents the ratio of internal control and efficiency. The performance will increase by 0.046 units. According to the study's findings, control environment and risk assessment controls are the most important for fraud prevention among Nigerian private sector entities because they have the highest beta, followed by information and communications, and surveillance which have the lowest beta. This study presents a geographic gap since it focused on the private sector entities in Nigeria whose anti-fraud strategies may be different from the ones used in Kenya. Fernandhytia and Muslichah (2020) conducted a study on the influence of individual ethics, internal control, and moral value on accounting fraud tendency in start-up businesses. The participants of this study were 188 participants. According to the study's findings, accounting fraud tendency is affected negatively by internal controls. This, therefore, implied that accounting fraud tendency in a company can be controlled by internal control. Therefore, an increase in internal control will lead to a decline in accounting fraud tendency. Likewise, internal controls are affected negatively by individual ethics, which means an increase in individual ethics and fraud risk assessments can be achieved through implementing good ethics in regular activity, and this will detect fraudulent behavior actions. The findings of this study are inaccurate since the study conducted a parametric test on non-parametric data. This, therefore, presents a methodological gap that the current study sought to fill.

### **1.1.1 Internal control systems and fraud prevention and detection**

Organizational fraud is typically caused by management's lack of control (Arens et al., 2008; Soleman, 2013). According to Albar and Fitri (2018), the internal control system (ICS) is a tool for controlling various company activities that each organizational unit must obey and carry out. However, many cases of fraud occur, indicating that internal control should be prioritized. A company with a weak internal control system increases the chances of fraud within the company (Sholehah et al., 2018). This means that the higher the quality of the internal control system within the SMEs, the lower the fraud rate (Yusuf & Kanji, 2020). Internal controls are designed, implemented, and maintained by management and other employees to address identified business and fraud risks that threaten entity goals such as reliable financial reporting (Tuanakotta, 2013; Soleman, 2013). Internal control systems are intended to respond to and, in some cases, to prevent a threat associated with the possibility of risk. Internal controls can detect all threats related to the management of organizational assets early on.

In the context of this study, Internal controls will be effective when the core components of internal controls are implemented properly and correctly in the organization to provide certainty in achieving organizational goals (Tuanakotta, 2013; Soleman, 2013). To maximize the function of internal controls, it is necessary to conduct internal audits to determine whether the control is functioning properly (Muslim et al., 2019). Internal audit activities will assist organizations in implementing adequate controls by assessing the effectiveness and efficiency of policies and procedures, as well as encouraging continuous improvement (Sawyer & Manavi, 2007; Zelmianti & Anita, 2015). It is also stated that internal auditors will aid in the prevention of fraud by inspecting and evaluating internal controls that reduce the risk of fraud (Muslim et al., 2019). Furthermore, internal controls aid in the detection of fraud in SMEs by performing audit procedures that can reveal fraudulent financial reporting and asset misappropriation (Arens, 2008; Zelmianti & Anita, 2015).

Given the importance of monitoring internal control against fraud, an effective internal control system is the only work unit best suited for the task. The role of internal control systems, which has always been associated with physical control issues, must shift from being merely a company

provost to being a unit capable of preventing and detecting fraud (Aida, 2021). Salameh et al. (2011) discovered that senior management believe that internal controls are effective at preventing fraud in SMEs. If the internal control system components are operational, the audit process and audit effectiveness will be impacted (Maheasy & Riyanto, 2016). A good internal control system will generate complete transaction documents, making audit procedures easier for fraud detection and prevention (Nusran, 2021). Furthermore, a good internal control system will provide auditors with accurate information to help them achieve organizational goals.

Several researchers have studied this research topic, including (Tyasminingsih, 2010), who shows that internal control systems have a reasonably high influence on the effectiveness of fraud detection and prevention. Zelmiyanti and Anita (2015), show that the role of internal controls has a significant positive effect on fraud detection and prevention. Anti-fraud measures include the implementation of an internal control system.

In this study, three components of the COSO framework namely, control environment, risk assessment, and monitoring were adopted to measure the internal control systems among SMEs in Nairobi, Kenya. This is because, COSO (2013) provides that for an institution's leadership to conclude that it has an effective system of internal control, it must meet the components of the internal control system suggested. These components must also be fully "present" and "functional" within their system of internal control. According to COSO (2013), being "present" means that the components exist with the institution's internal control design, whereas being "functional" means that the components continue to exist in the institution's operations and control system conduct. For internal control to be effective, these five components (control environment, risk assessment, control activities, information and communication, and monitoring) must work together in an integrated manner.

### **1.1.2 Small and Medium-Size Enterprises in Kenya**

SMEs have a significant part in the growth of the economy in Kenya. Regarding support and recognition for microbusiness, the situation in Kenya is the same as in other regions of the world. Although recognized as "Jua Kali" and informal, sector emphasis did not begin until after 1972, in

response to the ILO report on a program of World Employment (Sessional Paper No. 2, 1992). The potential of small companies and the informal sector to produce jobs and provide income to many Kenyans was highlighted in the report. As a result of this acknowledgment, the sector received great attention in the programs of the succeeding governments. SMEs are **categorized** according to their size, which is determined by the number of employees, throughout Kenya. Under this classification, there are three types of businesses: micro-enterprises, which employ fewer than 10 people, small businesses, which employ between 11 and 50 people, and large businesses, which employ more than 50 people. As a result, SMEs cover a wide range of businesses that engage in informal sector activities while also employing up to 50 people in the formal economy and one or more businesses.

The government's principal SME agency, the Ministry of Labor and Human Resource Development, offers official and informal businesses that are divided into non-farm and on-farm categories and employ 1 to 50 people (KNBS, 2015). The Companies Act 2015 No. 17 of the year 2015 provides guidelines and regulations for the registration of SMEs throughout Kenya. Small and medium-sized businesses can be limited companies, limited by shares, limited by guarantee, private companies, or unlimited corporations, according to the Companies Act No. 17 of 2015. SMEs are viewed as expensive and risky companies to deal with from the outside since most of them lack the appropriate collateral and can only take in a limited amount of funding from financial institutions. Due to the high expenses of intermediation, such as monitoring fees and loan contract enforcement, their access to credit is therefore restricted.

## **1.2 Problem Statement**

Small and medium-sized enterprises (SMEs) are widely recognized in the global economy as the backbone of all economies in many industrialized countries. Sharu and Guyo (2018) research demonstrate that small and medium-sized businesses in Kenya have an extremely low survival rate, with 60% of newly established SMEs failing within the first three years of operation. Collis (2018) demonstrates, however, that internal control systems can be leveraged to improve fraud detection, prevention, and SME growth. Even though internal control systems have many advantages, they are rarely adopted or implemented by small and medium-sized businesses in

Kenya (Sharu & Guyo, 2018). For instance, Kipsang (2019) discovered that just 14% of the SMEs under study had internal control measures in place. Poor and irresponsible financial management is one of the major reasons why small businesses fail, according to (Kamarudin et al., 2020).

The bulk of explosive accounting crises in businesses is caused by deficiencies in internal controls. The best example in the US is Enron. Prior to its bankruptcy in 2001, Enron reported earnings of \$200 million and was thought to be worth billions of dollars on the stock market. Contrarily, dishonest accounting methods and earnings management increased the price of Enron's stock (Zhang, 2007). By the end of the following year, it admitted that it had overstated its profits over the previous four years and owed its lenders about \$6 billion. Several investors lost money, employees lost their jobs, and even employee pensions disappeared after the collapse because the company's pension plan had invested in its own shares (Zhang, 2007).

Okiro et al. (2017) conducted a study on the effect of internal control systems on fraud prevention among small and medium-sized enterprises in Nairobi County, Kenya. The study used a survey research design with stratified sampling and a census where 238 staff members were chosen. Communication and risk assessment all had a big impact on preventing fraud.

Asamoah and Fosu (2017) studied internal control mechanisms and fraud detection: As study of Small and Medium-Sized Enterprises in Ghana. Internal Control Systems was measured using control activities and information and communication in the study. The study adopted a descriptive research design on 188 employees. The finding was that there is a strong significant relationship between ICS and fraud prevention.

Twumasi and Makore (2017) studied the effectiveness of internal control systems in fraud detection and prevention: A study of Small and Medium – Sized Enterprises in South Africa. The study adopted exploratory research design on employees of the selected SMEs. They found a positive relationship between elements of ICS and Fraud Prevention. In addition, from the correlation analysis of ICS components, information and communication revealed a positive significance with fraud prevention.

Whereas studies have been done linking internal control systems with fraud prevention, methodologies vary and there are differences in concepts as well as contexts adopted. This study sought to close this gap by attempting to establish the effect of internal control systems on fraud detection and prevention among SMEs in Nairobi, Kenya.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective.**

The study will be guided by the general goal of determining the effectiveness of internal control systems in fraud prevention and detection among SMEs in Nairobi Kenya.

#### **1.3.2 Specific Objectives.**

The specific objective of this study is set as follows.

- i. To examine the effect of the control environment on fraud detection and prevention among SMEs in Nairobi Kenya.
- ii. To determine the effect of risk assessment mechanisms in fraud detection and prevention among SMEs in Nairobi Kenya.
- iii. To ascertain the effect of monitoring on fraud detection and prevention among SMEs in Nairobi Kenya.

#### **1.3.3 Research Questions.**

The study intends to answer the following research questions:

- i. Can the control environment be a useful tool for detecting and preventing fraud among SMEs in Nairobi Kenya?
- ii. Can risk assessment be used to detect and prevent fraud among SMEs in Nairobi Kenya?
- iii. Is monitoring an effective tool for detecting and preventing fraud among SMEs in Nairobi Kenya?

## **1.4 The scope of the study**

Nairobi Kenya was the site of this study. Nairobi, the Kenyan capital was chosen because it boasts the most SMEs per capita in the country (Economic Survey, 2019). Additionally, businesspeople from across the nation exchange commodities in Nairobi City. Further, Nairobi City serves as a source of supply for businesspeople from across the nation. All SMEs in Nairobi Kenya that have been registered with Nairobi City County made up the target population. In Nairobi City CBD, there were 993 businesses with between 10 and 99 employees, according to the 2021 Nairobi City County License register. Therefore, 993 managers and owners of business enterprises in Nairobi's central business district made up the study's population. The study was conducted between December 2022 and February 2023.

## **1.5 Significance of the Study**

SMEs should have adequate tools to detect and prevent fraud to effectively monitor their goals, progress, and key performance metrics throughout their financial operations. The goal of this study was to look at the effectiveness of internal controls in fraud detection and prevention, as well as how they can influence SMEs to streamline their operations and perform efficiently and effectively for the general good of the public. The study was created to help a variety of stakeholders, including the following:

### **1.5.1 Policymakers**

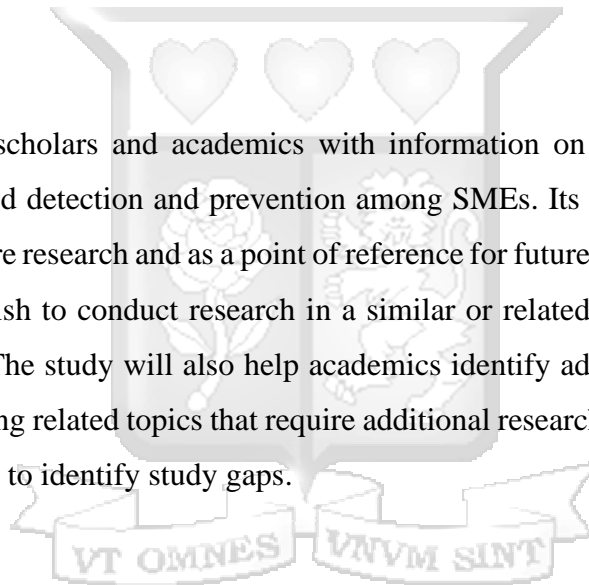
As a result of the study's findings, the government and SME regulators may be able to come up with fraud detection and prevention strategies for SMEs. The study will assist policymakers in developing and implementing policies for detecting and preventing fraud. The findings of this study will help SMEs understand the benefits that have been realized and how more benefits can be realized for optimal fraud detection and prevention.

### **1.5.2 SMEs**

They will use the study's findings to equip themselves better with knowledge and skills about the effectiveness of internal controls, which would improve fraud detection and prevention among SMEs. Further, the study will assist SMEs in the development of guidelines that will increase the level of effectiveness of service delivery using internal control services, resulting in a decrease in the rate of financial fraud in SMEs. It will result in lobbying for forensic experts in Kenya to be heavily involved in activities that will result in many accounting practices being modified, making them much more practical and useful in SMEs.

### **1.5.3 Academics**

The study will provide scholars and academics with information on the relationship between internal controls and fraud detection and prevention among SMEs. Its findings would also serve as the foundation for future research and as a point of reference for future researchers. Furthermore, future academics who wish to conduct research in a similar or related field will use the study's findings as a reference. The study will also help academics identify additional research areas on other topics by highlighting related topics that require additional research and conducting a review of the empirical literature to identify study gaps.



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

The chapter examines the theories that serve as the study's foundation. Previous empirical studies on this research area and related areas are thoroughly discussed. Other sections of this chapter include an empirical review, a summary of the literature review and research gap, a conceptual framework illustrating the relationship between independent and dependent variables, an operationalization of variables, and finally the chapter summary.

#### 2.2 Theoretical Review

The theoretical review is concerned with theories that explain fraud detection and prevention. Among these theories are the reliability theory and the fraud diamond theory. The COSO framework which helps with the understanding of how to put in place a system of internal controls is also discussed.

##### 2.2.1 Reliability Theory

The proponent of reliability theory is Leonard D. White and the theory was proposed in 1951. Reliability theory explains the chance of a system performing as expected over a period of time (Gavrilov & Gavrilova, 2005). By analyzing data and identifying patterns, reliability theory allows for predictions about future failures or weaknesses in a system (Gavrilov & Gavrilova, 2005). This enables proactive maintenance and improvements to be made, reducing downtime and increasing system efficiency. Investing in reliability theory can help to identify potential problems and weaknesses in a system before they lead to costly repairs or replacements.

Reliability theory relies on data about a system's performance over time (Abdullahi et al., 2016). If there is limited data available, or the data is incomplete or unreliable, the results of the reliability

analysis may be less accurate. Organizations may struggle to manage a large amount of data and information generated by reliability analysis, which can make it difficult to prioritize and act on the results (Abdullahi et al., 2016). The idea also contends that an ineffective internal control system results in more significant effort and thus higher costs (Abdullahi et al., 2016). One advantage of reliability theory, according to Messier Jr and Austen (2000), is that it closely relates to the auditor's requirements for comprehension of the internal control system and control risk assessment. According to the notion, risk assessment and risk management are the main reasons internal control systems are set up.

In relation to this study, the reliability theory was used to investigate the internal control elements (control environment, risk assessment mechanisms, and monitoring) and how they influence fraud detection and prevention among small and medium-sized enterprises in Nairobi City. Further, the theory is relevant for this study because it suggests that the chances of an organization performing as expected over a period of time and in accordance with a specified standard is dependent on the availability of an effective internal control system. This, therefore, assists in fraud prevention and detection.

### **2.2.2 Fraud Diamond Theory**

The proponents of the fraud diamond theory are David T. Wolfe and Dana R. Hermanson. The theory was proposed in the year 2004. According to Wolfe and Hermanson (2004), the fraud triangle is incomplete without the fourth element of capability, which constitutes the fraud diamond theory. This is because it may be impossible to commit and conceal fraud without the ability to exploit control flaws (Dorminey et al., 2012). As a result, the fraud diamond expands on the fraud triangle by including the fourth element of capability (Wolfe and Hermanson, 2004).

The Fraud Diamond Theory provides a comprehensive framework that helps identify and understand the different factors that contribute to fraud (Wolfe and Hermanson, 2004). The theory takes a holistic approach to fraud, examining all the elements that can lead to fraud, from the nature of the fraudster to the organizational culture in which the fraud occurs (Wolfe and Hermanson, 2004). The Fraud Diamond Theory is applicable across industries and can be used to detect and

prevent fraud in any organization, regardless of size or structure (Wolfe and Hermanson, 2004). The theory emphasizes prevention, promoting proactive measures to identify and mitigate fraud risks before they occur.

On the other hand, critics of the Fraud Diamond Theory opine that the theory is difficult to measure, as the factors it includes are intangible, making it challenging to quantify the likelihood of fraud (Dorminey et al., 2012). The theory lacks empirical evidence to prove its effectiveness in reducing fraud. The theory focuses largely on individual factors that contribute to fraud, such as opportunity, pressure, and rationalization, and may not fully consider broader structural and cultural factors that contribute to fraud (Dorminey et al., 2012). The Fraud Diamond Theory may have limited application in cases where fraud is perpetrated by external agents, as it primarily focuses on internal perpetrators (Dorminey et al., 2012).

This theory is a foundation for the study's objective since it enhances both fraud prevention and detection by considering an additional component "capability". Further to addressing perceived pressure, opportunity, and rationalization, the proponents of this theory considered an individual's capability, which consists of personal traits and the capacity to commit fraud.

### **2.3 Empirical Review**

This section examines empirical studies that have been conducted on the relationship between internal control systems and fraud detection and prevention. It mirrors the study's research objectives and the literature around the chosen research objectives. The section also focuses on the three components of the COSO framework which helps us understand how to put in place a system of internal controls. The justification for the selection of the three components of the COSO framework was obtained from the recommendations of the empirical studies reviewed. Most empirical studies reviewed had focused on the other two components of the COSO framework namely, information and communication, and control activities.

### **2.3.1 Effect of the internal control environment in fraud detection and prevention among SMEs**

The internal control environment is a broad term that encompasses a wide range of operations (Kumar & Sharma, 2015). It consists of a variety of methods and measures used by management to ensure the smooth and economical operation of the business entity. It aids management in the execution of various functions. Furthermore, an internal control environment is a complete system of financial and non-financial controls for a business entity established by management in the conduct of a business, including internal checks, internal audits, and other forms of control (Kumar & Sharma, 2015). As a result, it is clear that the term "internal control environment" is used broadly, encompassing internal checks and audits as well as other types of controls. Furthermore, internal control is a process designed and implemented by those charged with governance Jubb (2018), management, and other personnel to provide reasonable assurance about the achievement of the entity's objectives in terms of financial reporting reliability, effectiveness, and efficiency of operation, and compliance with applicable laws and regulations. As a result, internal controls are designed and implemented to address identified business risks that jeopardize the achievement of any of these goals.

Wanjala and Riitho (2020) analyzed the relationship between the implementation of internal controls and the mitigation of fraud among the Association of Savings and Credit Cooperatives of Kenya (Saccos). To achieve this goal, the study's specific objectives were formulated in line with the five components of the Internal Control System. The specific objective of the study was therefore to assess the impact of the control environment, control activities, surveillance, information and communications, and risk assessment on fraud mitigation. Structured questionnaires were used to collect data. The collected data were analyzed by use of ordinary least squares regression. According to the study's findings, all the internal control system variables mentioned greatly affected the mitigation of fraud among the Saccos in Kenya. Further, the findings of the study showed that it is necessary for Saccos to work hard and implement an internal control system to a greater extent to solve the persistent fraud problem it solves. The study concentrated on Saccos as opposed to the current study which sought to investigate the effect of

internal control systems on fraud detection and prevention among SMEs. This, therefore, presents a location-contextual gap that the current study sought to fill.

Adeleke et al. (2019) studied the impact of internal control on fraud prevention Nigerian private sector. Guided questionnaires were used to collect the data from the respondents. The collected data was analyzed by using a simple percentage with a significance level of 5% and regression (social science statistical software package). The results showed that among the three (3) independent variables tested during the study, the constant coefficient gave a positive value of 0.046, which means that if all independent variables remained constant, it represents the ratio of internal control and efficiency. The performance will increase by 0.046 units. According to the study's findings, control environment and risk assessment controls are the most important for fraud prevention among Nigerian private sector entities because they have the highest beta, followed by information and communications, and surveillance which have the lowest beta. The study concluded that if Nigeria's private sector entities can also regularly review human resource management functions, they will greatly reduce the vulnerability of Nigeria's private sector entities' employees to fraudulent activities. This study presents a geographical gap since it focused on the private sector entities in Nigeria whose anti-fraud strategies may be different from the ones used in Kenya. Further, the study focused on only two internal control elements; control environment and risk assessment thus presenting a conceptual gap that the current study sought to fill by investigating how control environment, risk assessment, and monitoring can influence fraud detection and prevention among SMEs.

Nugraha and Bayunitri (2020) conducted a study on the extent to which the internal control of Cimahi City Bank's "One Belt One Road" initiative affects fraud prevention. Structured questionnaires were used to collect data. The collected data was analyzed by use of simple linear regression analysis. Using the annual observation results of 465 companies on public litigation companies in the United States from 2000 to 2018, the study found that the control environment was the most important tool for fraud prevention and detection. Due to the study's concentration on the banking sector whose internal controls differ from that of the SMEs, the study presented a geographical gap that the current study sought to fill.

### **2.3.2 Effects of risk assessment mechanisms in fraud detection and prevention among SMEs**

Fraud risk management as a mechanism includes an organization's plan as well as all the coordinated methods and measures implemented within a business to safeguard its assets, check the accuracy and reliability of its accounting data, prorate operational efficiency, and adhere to prescribed managerial policies (Siwangaza et al., 2017). Thus, it assists an organization in preventing frauds and errors, minimizing waste, strengthening asset custody, assuring management of the dependability of accounting data, eliminating unnecessary suspicion, and assisting in the maintenance of adequate and reliable accounting records. Because of the unique role that Small and Medium Scale Enterprises (SMEs) play in the development of an economy, the design and implementation of an effective fraud risk mechanism require careful consideration (COSO, 2011). The involvement of the private sector and the development of Small and Medium Enterprises (SMEs) have become critical in reorienting the Kenyan economy toward self-sufficiency.

SMEs in developing countries, such as Kenya, face many issues that jeopardize their long-term viability and performance. Prior studies have thoroughly investigated constraints such as a lack of finance, insecurity, poor infrastructure, an unfavorable fiscal policy by the government, and policy inconsistency (Siwangaza et al. 2017; Bruwer and Ukpere, 2014; Kanu, 2015). However, fraud risk is a factor that is rarely considered as having a potential impact on the failure of sustainability of SMEs. According to ACFE (2021), small businesses are the most vulnerable to employee fraud and abuse.

Netty and Risk (2020) conducted a study on whether internal control has an impact on fraud prevention and good corporate governance. The specific objectives of the study were to analyze whether good corporate governance has an impact on fraud prevention and assess the effect of risk assessment mechanisms on fraud prevention and detection among Zhanbei city's local government. The study used raw data that was collected using guided questionnaires. A total of 49 respondents used a purposeful sampling survey and 47 questionnaires were returned. The data was analyzed using SEM-PLS analysis (Structural Equation Model-Partial Least Squares). According to the

study's findings, risk assessment mechanisms, and good corporate governance will not affect fraud prevention. This study presents a conceptual gap since it focused on how internal controls influence fraud prevention and corporate governance whereas the current study focused on the effect of internal controls on fraud detection and prevention among SMEs.

Fernandhytia and Muslichah (2020) conducted a study on the influence of individual ethics, internal control, and moral value on accounting fraud tendencies in start-up businesses. The participants of this study were 188 participants. According to the study's findings, accounting fraud tendency was affected negatively by internal controls. This, therefore, implied that fraud accounting and fraud tendency in a company can be controlled by internal control. Therefore, an increase in internal control will lead to a decline in accounting fraud tendency. Likewise, it is affected negatively by individual ethics, which means an increase in individual ethics and fraud risk assessments can be achieved through implementing good ethics in regular activity, and this will detect fraudulent behavior. The findings of this study are inaccurate since the study conducted a parametric test on non-parametric data. This, therefore, presents a methodological gap that the current study sought to fill.

Moloi (2016) investigated how risk monitoring improves performance in the context of South African Small and Medium Sized Enterprises. The investigation utilized the descriptive examination style and the focus on the population was 225 representatives. The study's findings demonstrated that risk assessment and risk evaluation are some of the ways that SMEs monitor hazards. Continual assessment of potential risks that can have an impact on the business is essential for improving overall performance. This study presents a geographic gap since it focused on South African SMEs whose anti-fraud strategies may be superior to the ones used in Kenya.

Ahmad et al. (2016) sought to determine the effect of a risk assessment mechanism, evaluation of risks, and recording of risks on the performance of public colleges in Malaysia. The objective population of the examination was 20 schools. Based upon the data collected from an overall 20 public colleges, this research discovered that most of the schools do have a formal risk assessment mechanism in place and several of them have assigned a specific individual in dealing with the ERM tasks of the colleges. The study proposed that monitoring of the risks should entail risk

assessment, evaluation of risks, and recording of risks. This study presents both geographic and contextual gaps since it focused on determining the effect of internal controls on the performance of public colleges in Malaysia as opposed to the current study that sought to determine the effect of internal controls in fraud detection and prevention among SMEs.

### **2.3.3 Effect of monitoring in fraud detection and prevention among SMEs**

According to previous research, an effective fraud prevention and detection process necessitate appropriate monitoring functions (American Institute of Certified Public Accountants (AICPA), 2019). Furthermore, Deng et al. (2017) discovered that the absence of a monitoring function increases the likelihood of fraud occurrences. The mechanism for implementing oversight functions is determined by the size of the organization. Monitoring processes in large organizations are carried out by the audit committee, the board of directors, management, internal auditors, external auditors, and certified fraud examiners. In SMEs, where managers are frequently the owners or co-owners of the entity, executive management is in a unique position to foster an honest and high-integrity culture while also controlling business activities (American Institute of Certified Public Accountants (AICPA), 2019; Seetharaman et al., 2014)

Although management is fully responsible for fraud prevention in SMEs, they can appoint someone or a department to oversee the risk management process. Furthermore, to improve the effectiveness of the prevention mechanism, management should consider bringing in a third party, such as an external auditor or forensic accountant, on a regular basis to verify the accuracy of the transactions and accounts (Seetharaman et al., 2017). Through their expertise, these professionals can identify suspicious operations that management is often unable to detect.

Muhunyo and Jagongo (2018) conducted a study to investigate the impacts of risk assessment, risk investigation, control conditions, monitoring, and collaboration on fraud detection and prevention. A sample of 96 employees and a descriptive research methodology was used in the study. The results of the study demonstrated that teamwork, risk investigation, control activities, monitoring, and appraisal of risks all had a favorable impact on fraud detection and prevention. The study

concentrated on public sector entities as opposed to the current study. This, therefore, presents a location-contextual gap that this study sought to fill.

Mwazo et al. (2017) conducted a study to investigate the impact of internal control systems on fraud prevention. Specifically, the study sought to determine the effect of monitoring on fraud prevention. The study used a descriptive examination approach, with 225 representatives as the primary population under study. The findings of the investigation suggested that internal control system elements including monitoring are essential for improving fraud prevention. The study concentrated on public sector entities as opposed to this study, therefore presents a location contextual gap that the current study seeks to fill.

Dwi and Sonia (2020) analyzed the impact of reporting systems, monitoring, and internal controls on fraud prevention in Indonesian state-owned enterprises (SOE). The reporting system and internal controls were employed as independent variables while fraud prevention was employed as the dependent variable. Researchers were hired as internal auditors and whistleblowers. The size of the sample was determined by the researchers using Solvin's approach. Out of 122 participants, 62 were chosen as responses. Multiple regression was used to assess the data. The findings demonstrate that the internal controls, monitoring, reporting system, and fraud prevention software in Indonesian state-owned firms is fairly good. Internal controls and the reporting system are crucial in preventing fraud. It demonstrates how fraud can be stopped by putting in place trustworthy internal controls and introducing a reporting mechanism that includes everyone in the organization. The study concentrated on state-owned corporations as opposed to the current study which sought to investigate the effect of internal control systems on fraud detection and prevention among SMEs, presenting a location-contextual gap that the current study sought to fill.

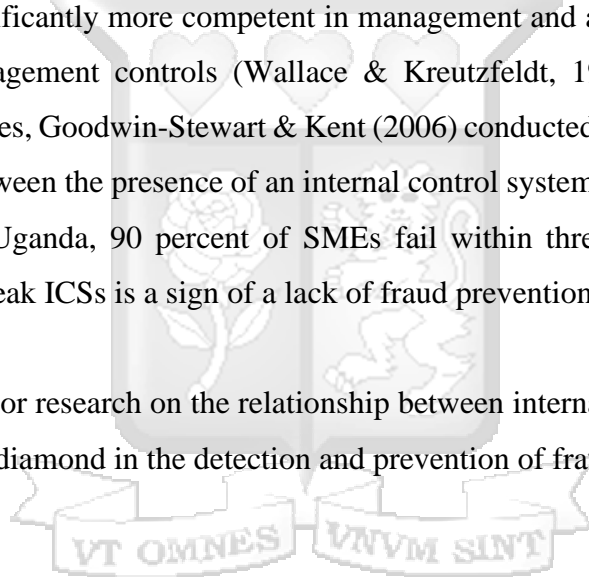
## **2.4 Summary of empirical review findings**

As has already been mentioned, an organization's internal control system is an essential part of its management and the cornerstone of its secure operations (Drogalas et al., 2005; Karagiorgos et al., 2010). The entity's risk assessment process, information and communication systems, control operations, and control monitoring are the five components that make up internal control (Hayes

et al., 2005). However, just three elements of the internal control system were chosen to focus on for the purposes of this study. These are control environment, risk assessment, and monitoring. The internal control systems' other elements were kept constant.

The empirical research on the effect of internal control systems on fraud prevention and detection among SMEs in Kenya appears to be quite sparse. However, a number of academics and industry experts in America and Europe have studied internal control systems for larger organizations, and the results of these studies can be applied to SMEs. Companies with ICSs are observed to be significantly larger, significantly more highly regulated, significantly more competitive, significantly more profitable, significantly more liquid, significantly more conservative in their accounting policies, significantly more competent in management and accounting, and subject to significantly better management controls (Wallace & Kreutzfeldt, 1991). Using a sample of Australian listed businesses, Goodwin-Stewart & Kent (2006) conducted a study that demonstrates a positive correlation between the presence of an internal control system and fraud prevention and detection. However, in Uganda, 90 percent of SMEs fail within three years (Katuntu, 2005). Therefore, a lack of or weak ICSs is a sign of a lack of fraud prevention and detection capability.

Table 2.1 summarizes prior research on the relationship between internal control systems and the components of the fraud diamond in the detection and prevention of fraud among SMEs.

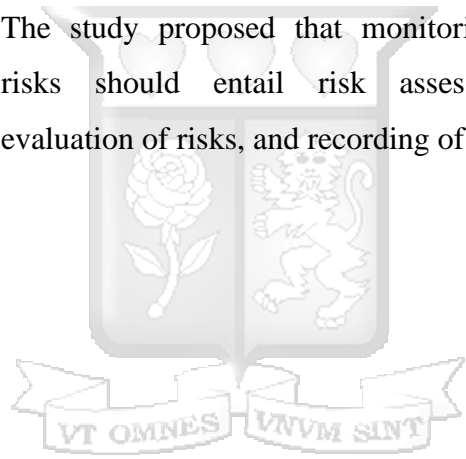


**Table 2. 1: Summary of literature and research gaps**

<b>Author</b>	<b>Title</b>	<b>Findings</b>	<b>Research gaps</b>
Wanjala and Riitho (2020)	The relationship between the implementation of internal controls and the mitigation of fraud among the Association of Savings and Credit Cooperatives of Kenya (Saccos).	According to the study’s findings, all the internal control system variables mentioned greatly affected the mitigation of fraud among the Saccos in Kenya. Further, the findings of the study showed that it is necessary for Saccos to work hard and implement an internal control system to a greater extent to solve the persistent fraud problem.	The study concentrated on Saccos as opposed to the current study which seeks to investigate the effect of internal control systems on fraud detection and prevention among SMEs. This, therefore, presents a location-contextual gap that the current study sought to fill.
Adeleke et al. (2019)	The impact of internal control on fraud prevention in the Nigerian private sector.	According to the study’s findings, control environment and risk assessment controls are the most important for fraud prevention among Nigerian private sector entities because they have the highest beta, followed by information and communications, and surveillance which have the lowest beta	This study presents a geographical gap since it focused on the private sector entities in Nigeria whose anti-fraud strategies may be different from the ones used in Kenya.

Nugraha and Bayunitri (2020)	The extent to which the internal control of Cimahi City Bank's "One Belt One Road" initiative affects fraud prevention	The study found that the control environment was the most important tool for fraud prevention and detection.	Due to the study's concentration on banking sector whose internal controls differ from that of the SMEs, the study presented a contextual gap which the current study sought to fill.
Netty and Risk (2020)	Whether internal control has an impact on fraud prevention and good corporate governance	According to the study's findings, risk assessment mechanisms, and good corporate governance will not affect fraud prevention.	This study presents a conceptual gap since it focused on how internal controls influences fraud prevention and corporate governance whereas the current study focused on the effect of internal controls on fraud detection and prevention among SMEs.
Fernandhytia and Muslichah (2020)	The influence of individual ethics, internal control, and moral value on accounting fraud tendency in start-up businesses	According to the study's findings, accounting fraud tendency was affected negatively by internal controls. This implied that accounting fraud tendency in a company can be controlled by internal control. Therefore, an increase in internal control will lead to a decline in accounting fraud tendency.	The findings of this study are inaccurate since the study conducted a parametric test on non-parametric data. This therefore presented a methodological gap which the current study sought to fill.

Moloi (2016)	How risk monitoring improves performance in the context of South African Small and Medium Sized Enterprises	The study's findings demonstrated that risk assessment and risk evaluation are both parts of the SME's monitoring of hazards. Continual assessment of potential risks that can have an impact on the business is essential for improving overall performance.	This study presents a geographic gap since it focused on the South African's SMEs whose anti-fraud strategies may be superior from the ones used in Kenya.
Ahmad et al. (2016)	The effect of a risk assessment mechanism, evaluation of risks, and recording of risks on the performance of public colleges in Malaysia	The study proposed that monitoring of risks should entail risk assessment, evaluation of risks, and recording of risks.	This study presents both geographic and contextual gaps since it focused on determining the effect of internal controls on the performance of public colleges in Malaysia as opposed to the current study that sought to determine the effect of internal controls in fraud detection and prevention among SMEs.
Muhunyo and Jagongo (2018)	The impacts of risk assessment, risk investigation, control conditions, monitoring, and collaboration on fraud detection and prevention	The results of the study demonstrated that teamwork, risk investigation, control activities, monitoring, and appraisal of risks all had a favorable impact on fraud detection and prevention.	The study concentrated on public sector entities as opposed to the current study which sought to investigate the effect of internal control systems of fraud detection and prevention among SMEs. This therefore presents a location



Mwazo et al. (2017)	The impact of internal control systems on fraud prevention. Specifically, the study sought to determine the effect of monitoring on fraud prevention.	The findings of the investigation suggested that internal control system elements including monitoring are essential for improving fraud prevention.	contextual gap which the current study sought to fill The study concentrated on public sector entities as opposed to the current study which sought to investigate the effect of internal control systems of fraud detection and prevention among SMEs. This therefore presented a location contextual gap which the current study sought to fill.
Dwi and Sonia (2020)	The impact of reporting systems, monitoring, and internal controls on fraud prevention in Indonesian state-owned enterprises (SOE).	The findings demonstrate that the internal control, monitoring, reporting system, and fraud prevention software in Indonesian state-owned firms is fairly good. Internal control and the reporting system are crucial in preventing fraud. It demonstrates how fraud can be stopped by putting in place trustworthy internal controls and introducing a reporting mechanism that includes everyone in the organization.	The study concentrated on state owned corporations as opposed to the current study which sought to investigate the effect of internal control systems of fraud detection and prevention among SMEs. This therefore presented a location contextual gap which the current study sought to fill.

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**Source: Researcher (2023)**

## 2.5 Conceptual framework

A conceptual framework is a basis in which explanatory categories are methodically placed in a large structure of explicit propositions that can be officially accepted (Chave et al., 2015). Several evidence-based studies have identified the same factors that influence fraud prevention and detection in SMEs. The conceptual framework was developed to show the correlation between fraud prevention and detection and the variables that explain them.

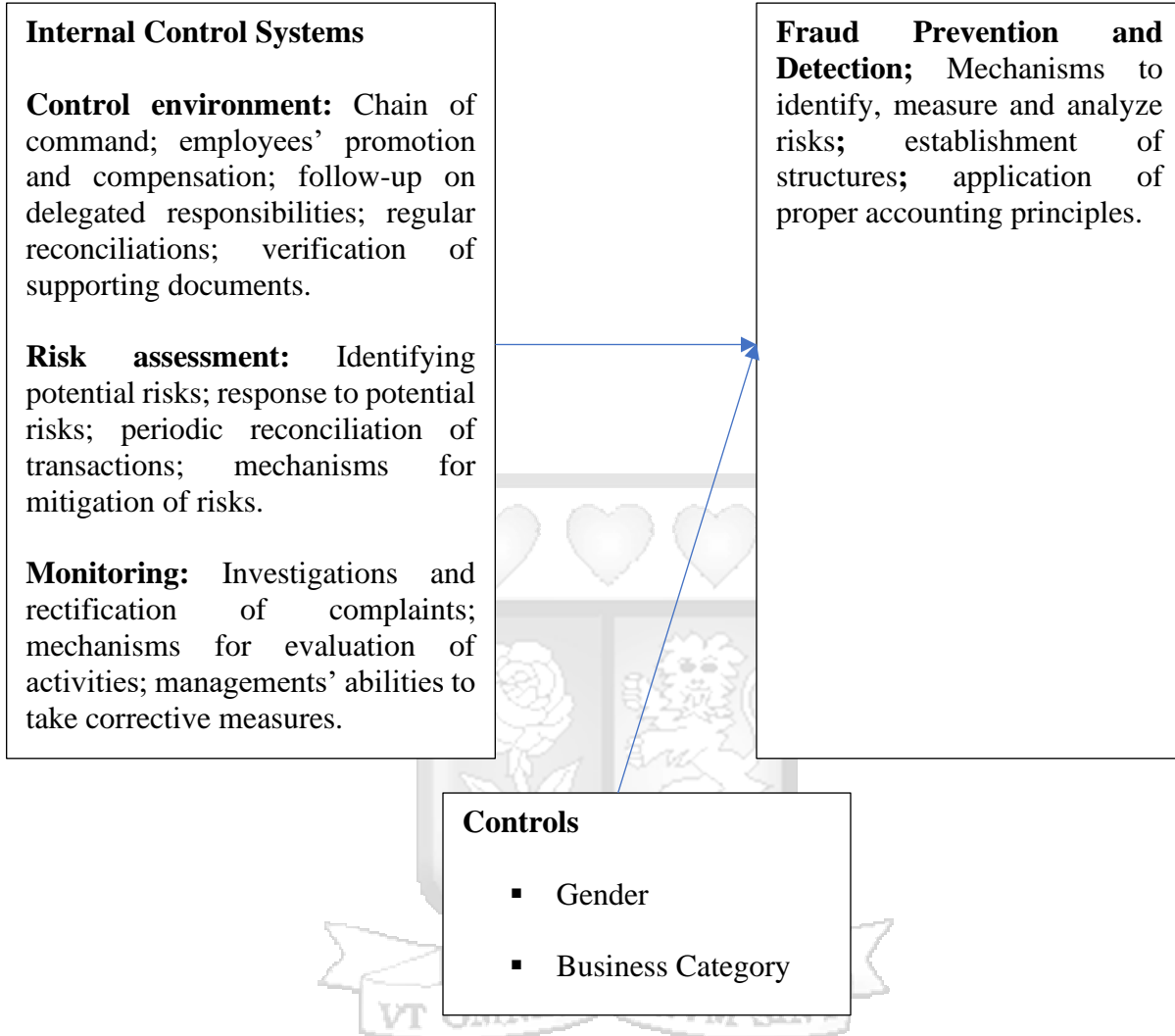
The conceptual framework is a graphical representation of how the established factors interact. Internal control systems and fraud detection and prevention are the elements under consideration. The internal control systems, as evaluated by the control environment, risk assessment, and monitoring are the independent variables. The dependent variable is fraud detection and prevention, which will be determined by Mechanisms to identify, measure and analyze risks; establishment of structures; application of proper accounting principles.

The researcher used prior research and knowledge to identify the two control variables namely, the gender of the respondents and business category of SMEs. The empirical studies and theories reviewed provided insight into what variables are likely to be relevant to the study and therefore should be controlled. The two control variables were kept constant and carefully monitored during the study in order to isolate the relationship between the independent and dependent variables.

### Figure 2. 1: Conceptual Framework

## Independent Variable

## Dependent Variable



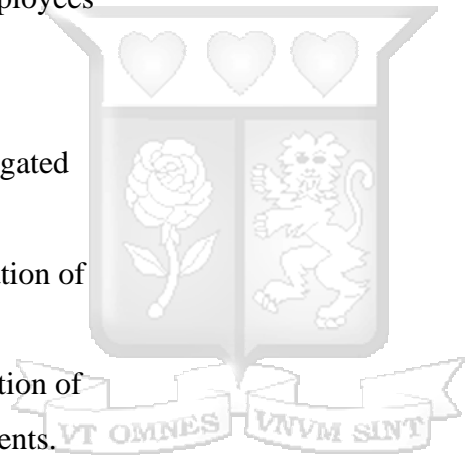
Source: Researcher (2023)

## 2.6 Operationalization of Variables

The internal control system will be operationalized as the presence of a strong control environment, control activities and information and communication. Fraud prevention, and detection will be operationalized as the presence of Mechanisms to identify, measure and analyze risks; establishment of structures; application of proper accounting principles. Table 2.1 shows the values for each of the independent and dependent variables in the study.

**Table 2. 2: Operationalization of Variables**

<b>Variables</b>	<b>Measures</b>	<b>Measures for rating</b>	<b>Data Analysis</b>	<b>Authors</b>
<b>Control environment</b>	<ul style="list-style-type: none"> <li>▪ Chain of command in the company.</li> <li>▪ Mechanism of employees' promotion and compensation.</li> <li>▪ Follow-up on delegated responsibilities</li> <li>▪ Regular reconciliation of transactions.</li> <li>▪ Thorough verification of supporting documents.</li> </ul>	5 Point Likert scale	Descriptive analysis and Inferential analysis	Zakaria et al. (2016); COSO (2013)
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>▪ Investigation and rectifications of complaints.</li> <li>▪ Mechanisms for evaluation of activities.</li> <li>▪ Management's ability to take corrective measures.</li> </ul>	5 Point Likert scale	Descriptive analysis and Inferential analysis	COSO (2013); Zakaria et al. (2016)



<b>Risk assessment</b>	<ul style="list-style-type: none"> <li>▪ Mechanism of identifying potential risks</li> <li>▪ Response to potential risks.</li> <li>▪ Periodic reconciliations of transactions</li> <li>▪ Mechanisms for mitigation of risks</li> </ul>	5 Point Likert scale	Descriptive analysis and Inferential analysis	Ashfaq and Rui (2019); Al-Thuneibat et al. (2015)
<b>Fraud prevention and detection</b>	<ul style="list-style-type: none"> <li>▪ Mechanisms to identify, measure and analyze risk</li> <li>▪ Establishment of structures</li> <li>▪ Application of proper accounting principles.</li> </ul>	5 Point Likert scale	Descriptive analysis and Inferential analysis	Nila and Viriyanti. (2018); Pratolo (2017).
<b>Business Category</b>	<ul style="list-style-type: none"> <li>▪ Type of business in which the respondent works at</li> </ul>	<ol style="list-style-type: none"> <li>1 .If the SME is Real Estate entity,</li> <li>2 .If the SME is supplies entity,</li> <li>3 .If the SME is a Services entity,</li> <li>4.If the SME is a Distribution entity,</li> <li>5.If the SME is a Manufacturing entity</li> </ol>	Descriptive analysis and regression analysis	

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<b>Gender</b>	▪ Gender of the respondent	1 if the respondent is male, 2 If the respondent is female	Descriptive analysis and regression analysis
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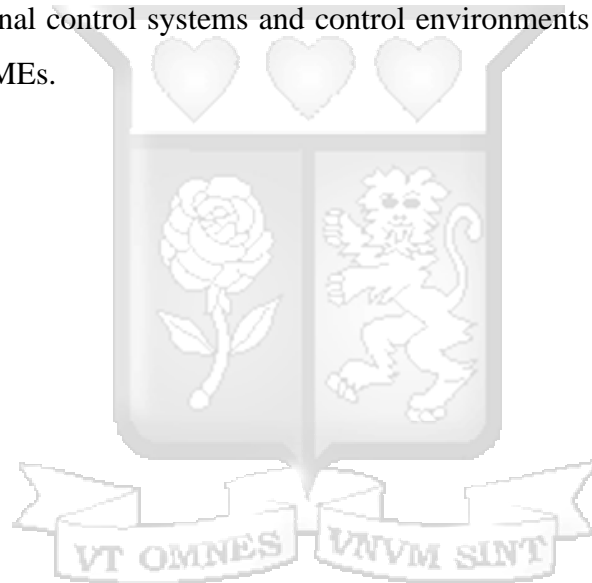
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**Source: Researcher (2023)**



## 2.7 Chapter Summary

The study was anchored on the reliability theory and fraud diamond theory. The reliability theory inspired confidence and addressed the demand and supply of internal control systems and their influence on fraud detection and prevention. The literature review showed that internal control systems; control environment; risk assessment mechanisms; and monitoring have varying influences on fraud detection and prevention. In addition, the literature showed that risk assessment mechanisms influence fraud detection and prevention among small businesses. The literature further showed that internal control systems and control environments influence fraud detection and prevention among SMEs.



## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter discusses the research methodology and research designs that were used in this study. The research population, data collection methods, research quality, and data processing and analysis have also been extensively addressed in this section.

#### 3.2 Research Philosophy

A research philosophy, according to Saunders et al. (2016), is an overarching idea about how a phenomenon should be researched in data collection and analysis. It is defined by Creswell and Creswell (2017) as a set of beliefs and assumptions about the formation and development of knowledge. These assumptions pertain to human knowledge, which is referred to as epistemological assumptions, and the researcher's effect on research processes, which is referred to as axiological assumptions. These assumptions, according to Creswell and Creswell (2017), have a substantial impact on how research questions are formulated, procedures are employed, and outcomes are interpreted. According to Creswell and Creswell (2017), there seem to be two major research philosophies: positivist and interpretive. Positivism holds that reality is stable, observable, and objectively describable without interfering with the phenomenon being studied. In positivism, a phenomenon can be isolated and observed repeatedly, and data can be used to construct correlations, after which predictions can be made concerning seen and tested interrelationships (Cooper & Schindler, 2011)

In order to establish the relationship between internal control systems and fraud detection and prevention, this study took the position that reality is stable and observable and that relationships between internal control systems and fraud detection and prevention among SMEs can be described objectively, using numerical data obtained from the administration of questionnaires to a select group of respondents. A positivist view is the best perspective to take for this study because

it follows a well-defined structure during the studies and discussions. Further, positivists believe that since there are set laws and rules to be followed, there will be minimal room for error. The view that reality is stable, and observable is a good lens for studying the effectiveness of internal controls is supported by the fact that the study is made more accurate when it comes to experiments and applications as it follows specific rules using objective scientific tools (Cooper & Schindler, 2011)

### **3.3 Research Design**

The study employed an explanatory research design, also known as an experimental design. Explanatory research design is a type of research design that determines the cause-and-effect relationship between variables (Bryman, 2003). This design is important because it allows researchers to draw conclusions about the causal relationships between variables (Bryman, 2003). It involves manipulating the independent variable and measuring the effect on the dependent variable. For instance, in this study explanatory research design was used to determine whether the internal control systems are effective in fraud prevention and detection. The study participants were randomly assigned to either an ICS or control variable group, with the ICS group giving their views on the effectiveness of ICS in their organizations. By comparing the outcomes between the two groups, the researcher determined whether the ICS is effective in fraud detection and prevention among SMEs in Nairobi, Kenya or not.

### **3.4 Population**

According to Taylor et al. (2015), the population is defined as all individuals who are interested in the study or research. The current study sought to ascertain the effectiveness of internal control systems in the detection and prevention of fraud among SMEs in Nairobi, Kenya. This study focused on Nairobi Central Business District as it has the highest number of SMEs in Kenya (Economic Survey, 2021). The target population was all the SMEs in the CBD registered with Nairobi City County. According to the Nairobi City County License register of 2021, there were 993 business enterprises in the CBD with between 10 and 99 employees (Nairobi City County government, 2021). The unit of observation in this study was the managers/owners of business

enterprises in the CBD. Therefore, the target population of this study was 993 managers/owners of business enterprises in Nairobi CBD.

**Table 3. 1: Population of the Study**

<b>SMEs Business Sector</b>	<b>Target Population</b>
Real estate	210
Supplies	154
Services	212
Distribution	207
Manufacturing	210
<b>Total</b>	<b>993</b>

**Source: Nairobi City County Government (2021)**

### **3.5 Sampling Frame**

According to Creswell (2006), a sample frame is made up of components, entities, or objects that share characteristics that have been identified through the application of the researcher's established sampling criteria. All 993 business enterprises in Nairobi's Central Business District served as the study's sampling frame (Real Estate, Supplies, Services, Distribution, and Manufacturing).

#### **3.5.1 Sampling Technique**

To administer the study instrument, researchers must decide how to choose respondents from the target demographic. The aspects of the population that will participate in the data gathering are addressed by sampling design. The number of respondents chosen for the study is also determined by the sampling design (Cooper & Schindler, 2011). The basic purpose of sampling is to make sure that the people chosen are representative of the target group. A stratified random sampling technique was employed in this study to choose the respondents from the target population. Strata depending on the characteristics and properties of the participants define this sampling technique.

The strata of the study are made up of the business sectors that include real estate, supplies, services, distribution, and manufacturing.

### 3.5.2 Sample Size

A subset of the target population makes up the sample size. Sample sizes reflect the characteristics of the target population and have the capacity to produce data to answer the research questions. In order to acquire reliable and sufficient data, the sample size must be determined. It should be precise and accurate (Cooper & Schindler, 2011). Employees from each category of SMEs in Nairobi Kenya's five business sectors make up the sample size. Yamane's (1967) formula was utilized to determine the sample size for the study in this circumstance.

$$n = N / [1 + N(e)^2]$$

Where  $n$  is the sample size,  $N$  is the population sample and  $e$  is the sampling error tolerance.

$$n = 993$$

$$[1 + 993 (0.05)^2]$$

$$= 399.60 \sim 400$$

The sample size for the study was 400 participants distributed across the 993 SMEs within the 5 business sectors in Nairobi Kenya

**Table 3. 2: Sample Size**

SMEs' Business Sector	Target Population	Sample Size
		(Sample ration = 400/993 = 0.40)
Real estate	210	85
Supplies	154	62
Services	212	85
Distribution	207	83
Manufacturing	210	85
<b>Total</b>	<b>993</b>	<b>400</b>

Source: Researcher (2023)

### **3.6 Data Collection**

Data was collected from participants and the study employed primary research methods. According to Noor (2008), primary data can be collected using a variety of techniques such as interviewing, direct observation, documents, cultural records, artifact analysis, the use of visual materials, and the use of personal experiences. A questionnaire was the primary source of data collection because it can reach a larger number of respondents in less time. Furthermore, questionnaires have the advantage of giving respondents enough time to respond while maintaining a sense of confidentiality because the researcher allows them to express themselves freely (Mugenda & Mugenda, 2012). Research assistants were used to deliver the questionnaires to all respondents. The research assistants further guided the respondents on areas that were not clear on the questionnaire. Fowler (2013) asserts that guided questionnaires enhance high responses and therefore is recommended for research data collection.

The questionnaires were close-ended and divided into 3 main sections: Section A gathered data on the demographic of the respondents in the study. Section B addressed the components of Internal Control Systems. Section C was structured to address the components of fraud detection and prevention. This makes them more precise, standard, and easy to code. For the study's respondents, a five-point Likert-type questionnaire was used. All variables (independent and dependent) were measured using a 1-5 Likert scale because the researcher intended to evaluate the attitudes and opinions of the respondents. By using this scale, it was easy to find out the effect of the internal control system on fraud detection and prevention among SMEs. In order to increase the response rate from the respondents, trained research assistants directly gave the questionnaires to the respondents utilizing the wait-and-fill method.

### **3.7 Research Quality**

To establish the questionnaire's validity and reliability, a pilot study was conducted in which the questionnaire was tested on 10% of the sample size, which is equivalent to 40 respondents, to ensure it is relevant and effective.

### **3.7.1 Validity of the Research Instrument**

The study employed both construct and content validity. In terms of construct validity, the questionnaire was divided into three parts, with part one providing background information on the respondents, part two addressing the specific objectives of the study, and part three addressing fraud detection and prevention techniques among SMEs in Nairobi Kenya. The conceptual framework was closely linked to the questionnaire as well. In terms of content validity, the questionnaire was examined by the supervisor and the relevance of the statements in the questionnaire was determined. Based on the evaluation, the data collection instrument was adjusted before it was used in the data collection exercise.

### **3.7.2 Reliability of the Research Instrument**

When a research tool is said to be reliable, it means that it consistently produces the same results when applied to the same subjects under the same circumstances. Internal consistency of the replies was used to calculate the instrument's reliability in this study. The internal consistency method was computed using Cronbach's Alpha, where alpha values ranged from 0 to 1, with reliability increasing as the alpha value increased. Between 0.6 and 0.7 is the generally used reliability of coefficient, with 0.8 or higher indicating good reliability (Kothari, 2004). In this study, a Cronbach's Alpha of 0.7 or higher was deemed acceptable; however, a Cronbach's Alpha of less than 0.7 necessitated the alteration of the research instrument. However, the initial study did not incorporate the data collected during the pilot test.

From the findings of the pilot study, construct fraud detection and prevention among SMEs had an average Cronbach's reliability alpha of 0.815, control environment parameters had a Cronbach's reliability alpha of 0.772, risk assessment parameters had an average Cronbach's reliability alpha of 0.784, and monitoring activities had a Cronbach's reliability alpha of 0.860. This shows that the study questionnaire met the reliability criteria ( $\alpha > 0.7$ ).

**Table 3. 3: Reliability test results**

S.No.	Construct	N	Cronbach's Alpha	Item	Verdict
1	Fraud Prevention and Detection	10	0.815	4	Accepted
2	Control environment	10	0.772	5	Accepted
3	Risk assessment	10	0.812	5	Accepted
4	Monitoring	10	0.860	5	Accepted

**Source: Research data, (2023)**

### **3.8 Data Processing and Analysis**

Data analysis entails categorizing, manipulating, and summarizing data with the sole goal of obtaining answers to the study's goal. According to Mugenda and Mugenda (2012), the procedure of data analysis details the description as well as the use of the methods that are intended for use in data analysis. The mean and standard deviation statistics were used in this study to calculate the expected statistical results from the data collected from the respondents. Each of the socio-demographic definite variables, such as age, gender, years at work, and education levels, were calculated using descriptive statistics.

Spearman correlation analysis was used in the study to evaluate the relationship between the categorical variables. The variables were trimmed down to just the most important ones using factor analysis. Ordinal regression analysis was utilized in addition to factor analysis. To forecast an ordinal variable—a variable whose value exists on a random scale and whose significance rests in the ordering between various values—ordinal (ordered) logistic regression was employed. A five-point Likert scale was used to measure the dependent variable in this study, with 1 denoting strong disagreement, 2 disagreements, 3 neutrality, 4 agreement, and 5 strong agreement.

One factor for the dependent variable was retrieved based on the factor analysis. As a result, one ordered logistic regression model was created for the investigation. Six factors were extracted from the independent variables because of the factor analysis findings. These served as the study's independent (test) variables. The respondents' gender (whether male or female) and the types of

organizations they worked for were also included as two control variables. Since each questionnaire responder was the analysis's unit of analysis, these variables were included.

Numerous diagnostic procedures were carried out, including the Cronbach alpha test, sampling adequacy checks, assessments of data sphericity, multicollinearity, and the behavior of covariates in conjunction with the variables using scree plots. Prior to the analytical modeling, the dependent variable's normality was also examined.

### **3.9 Ethical considerations**

According to Punch (2013), empirical research raises ethical concerns such as respondent participation, confidentiality, and anonymity, which should be addressed by the researcher in addition to demonstrating how these concerns are addressed. The researcher treated each respondent with dignity while always ensuring the respondents' well-being. Respondents' informed written consent was sought, while their right to refuse participation in the study was communicated. There was no monetary compensation for participation.

To ensure that the data collected is secure, all the questionnaires secured the respondents' confidentiality in order to protect them from harm. Moreover, ethical standards in business research underpinned the study. To ensure research integrity, objectivity, and validity, the researcher acted openly and ensured that no data is misrepresented. The findings were analyzed by the most stringent scientific and statistical data analysis conventions. By grouping the data, the confidentiality and anonymity of the response collected data is ensured. All information gathered during the study was used solely for academic purposes. The researcher sought ethical approval from Strathmore University's Ethics Review Committee and a Research License from the National Commission for Science, Technology, and Innovation (NACOSTI).

## CHAPTER FOUR

### PRESENTATION OF RESEARCH FINDINGS

#### 4.1 Introduction

This chapter comprises data analysis, interpretation of results, and presentation of the study's findings in relation to the general and specific objectives of the study. The purpose of the study was to determine the effectiveness of internal control systems in fraud prevention and detection among SMEs in Nairobi Kenya. The chapter begins with a response rate, followed by demographic data, descriptive analysis of the independent and dependent variables, and finally, inferential analysis which includes factor analysis and Ordinal (Ordered) Logistic regression.

#### 4.2 Response rate

In this study, 993 managers and owners of SMEs in Nairobi's Central Business District made up the target population. 400 questionnaires were distributed by the researcher. However, only 292 of the 400 questionnaires that were handed out were fully completed and returned to the researcher, yielding a 73% overall response rate. The high response was because the research assistants delivered the questionnaires to the respondents and clarified any statement that seemed unclear from the questionnaires. Data analysis was conducted, and results were reported. According to Bryman (2012), the response rate should be greater than 50%; however, a turn-up of 70% and above is regarded as excellent. According to Nulty (2011), a response rate of 75% is sufficient to draw conclusions and offer recommendations about a particular group of interest. Furthermore, Fincham (2010) contends that a response rate of 60% or above is appropriate for conducting analysis. The turn-up rate for the participants in this study was within the acceptable range to move forward with data processing and reporting of the research findings. Figure 4.1 shows the response rate for the questionnaires distributed.

**Table 4. 1: The study’s response rate**

<b>SMEs’ Sector</b>	<b>Business</b>	<b>Sample Size</b>	<b>Response</b>	<b>Response rate</b>
Real estate		85	45	52.9
Supplies		62	57	91.9
Services		85	72	84.7
Distribution		83	81	97.6
Manufacturing		85	37	43.5
<b>Total</b>		<b>400</b>	<b>292</b>	<b>73.0</b>

Source: Research data (2023)

### 4.3 Demographic Data

The demographic information of the study’s respondents comprised their gender, age brackets, the highest level of education, duration in business, and categories of business enterprises. This section represents the study’s findings as displayed in table 4.2;

**Table 4. 2: Demographic data**

		<b>Frequency</b>	<b>Percent</b>
<b>Gender</b>	Male	174	59.6%
	Female	118	40.4%
	<b>Total</b>	<b>292</b>	<b>100.0%</b>
<b>Age Bracket</b>	20 - 25 years	55	18.8%
	26 - 30 years	59	20.2%
	31 - 35 years	67	22.9%
	36 - 40 years	44	15.1%
	Above 41 years	67	22.9%

	<b>Total</b>	<b>292</b>	<b>100.0%</b>
<b>Highest level of education</b>	No Education at all	15	5.1%
	Primary Education	13	4.5%
	Secondary Education	27	9.2%
	Diploma	70	24.0%
	Undergraduate	99	33.9%
	Postgraduate	68	23.3%
	<b>Total</b>	<b>292</b>	<b>100.0%</b>
<b>Duration in business</b>	0 - 5 years	53	18.2%
	6 - 10 years	201	68.8%
	Over 10 years	38	13.0%
	<b>Total</b>	<b>292</b>	<b>100.0%</b>
<b>Category of business enterprise</b>	Real Estate	45	15.4%
	Supplies	57	19.5%
	Services	72	24.7%
	Distribution	81	27.7%
	Manufacturing	37	12.7%
	<b>Total</b>	<b>292</b>	<b>100.0%</b>

**Source: Primary Data, (2023)**

#### **4.3.1 Respondents' gender**

The gender of the interviewees was a question in the study. The results as depicted in table 4.2 show Male respondents (59.6%) over female respondents (40.4%) in terms of percentage of respondents. The results indicated that there is a gender gap in the ownership of different types of businesses, which leads to the supposition that male workers predominate among SMEs in Nairobi CBD in terms of their owners.

### **4.3.2 Respondents' age bracket**

Additionally, the participants were asked to identify their age brackets. The outcome was as shown in Table 4.2. From the results, 18.8% of the respondents specified had between 20 and 25 years, 20.2% had between 26 and 30 years, 22.9% had between 31 and 35 years, 15.1% had between 36 and 40 years, and 22.9% were above 41 years in age. This implies that most of the respondents were aged between 31 and 35 years and above 41 years respectively.

### **4.3.3 Respondents' highest level of education**

Additionally, the respondents were asked to list their highest level of education. The outcome is presented in Table 4.2. From the findings, 24.0% of the respondents specified that they had a diploma as their highest level of education, 5.1% of the respondents indicated that they had no formal education, 23.3% of the respondents specified that they had a postgraduate degree as their highest level of education, 4.5% had primary education, 9.2% had secondary education and 33.9% had undergraduate degrees. This implies that most of the managers or owners of SMEs in Nairobi CBD have undergraduate degrees.

### **4.3.4 Respondents' duration in business**

The participants were required to state how long they have been in business. The outcomes were as shown in Table 4.2. From the results, 18.2% of the respondents indicated that they had been in business for a period of between 0 and 5 years, 68.8% indicated between 6 and 10 years, and 13.0% indicated over 10 years. This shows that most of the SME owners had been operating their businesses for a period of between 6 years and 10 years.

### **4.3.5 Respondents' category of business enterprise**

The participants were required to state the categories of their business enterprises. The outcomes were as shown in Table 4.2. From the results, 27.7% of the respondents indicated that they are engaged in the distribution business, 12.7% indicated manufacturing, 15.4% indicated real estate,

24.7% indicated services, and 19.5% indicated that they are engaged in the supplies business. This shows that most of the SME owners in Nairobi CBD are engaged in the distribution business.

#### 4.4 Descriptive statistical findings

Quantitative data from a 5-point Likert Scale survey served as the foundation for the analysis. The descriptive analytical methods used in the research analysis were mean, median and standard deviation. According to how the study variables were conceptualized, distinct findings are reported.

##### 4.4.1 Descriptive results for Control environment

The participants were to rate various statements relating to control environment and fraud prevention and detection among SMEs. A 5-point Likert scale was used whereby 1= strongly disagree, 2 = disagree, 3 = Neutral, 4 = agree and 5 = strongly agree. The results were depicted in Table 4.3.

**Table 4. 3: Control environment results**

	N	Mean	Median	Std. Deviation
In our organization, there's proper verification of supporting documents.	292	4.29	5.00	.949
In our organization, the lines of power and responsibility are well defined and well-understood	292	4.43	4.00	.567
The most crucial methods for safeguarding business cash in our organization are authorization, duty segregation, and reconciliation.	292	4.12	4.00	.916

In our organization, there are proper structures that facilitate follow-up on delegated responsibilities.	292	3.84	4.00	1.13
In our organization, the management has instituted mechanisms of promoting and compensating employees.	292	3.93	4.00	.964

**Source: Primary Data, (2023)**

The respondents were presented with 5 questions on the control environment within the SMEs. The summary of the research responses showed that there was agreement that a control environment helps to prevent fraud within SMEs, as indicated by a median of 4.00. The study noted agreement among respondents that verification of supporting documents for transactions helps in mitigating the risk of possible fraud (mean = 4.29, SDV=0.949). The study indicated agreement among respondents that the lines of power and responsibility within SMEs are well understood and this is vital in fraud prevention and detection within the SMEs (mean = 4.43, SDV .567). The respondents also agreed that the most crucial methods for safeguarding business cash in their organizations are duty segregation, and reconciliation which helps in fraud prevention and detection (mean = 4.12, SDV=.916). The above findings show agreement that to some extent control environments are established within the SMEs in Nairobi CBD.

#### 4.4.2 Descriptive results for Risk assessment

The participants were to rate various statements relating to risk assessment and fraud prevention and detection among SMEs. A 5-point Likert scale was used whereby 1= strongly disagree, 2 = disagree, 3 = Neutral, 4 = agree and 5 = strongly agree. The results are depicted in Table 4.4.

**Table 4. 4: Risk Assessment results**

	N	Mean	Median	Std. Deviation
In our organization, the management has put in place mechanisms for identifying potential risks.	292	3.52	4.00	1.14

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In our organization, our risk assessment plan entails a response to potential risks by the management.	292	4.04	4.00	1.09
In accordance with the company's standards and requirements, there's periodic reconciliations for transactions.	292	4.01	4.00	1.10
In our company, the management has established specific mechanisms for the mitigation of risks.	292	4.05	4.00	1.07
In our company, the source of the risk is investigated to determine how to assess.	292	4.01	4.00	1.07

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**Source: Primary Data, (2023)**

The respondents were presented with 5 questions on the risk assessment within the SMEs. The summary of the research responses showed there was agreement that conducting risk assessments helps to prevent fraud within SMEs, as indicated by a median of 4.00. The study noted agreement among respondents that the establishment of specific mechanisms for the mitigation of risks helps in mitigating the risk of possible fraud (mean = 4.05, SDV=1.07). In addition, it indicated agreement among respondents that the risk assessment plan that entails a response to potential risks by the management is vital in fraud prevention and detection within the SMEs (mean = 4.04, SDV 1.09). The respondents also agreed that in accordance with the company's standards and requirements, there are periodic reconciliations for transactions, which helps in fraud prevention and detection (mean = 4.01, SDV=1.10). The above findings show agreement that to some extent, risk assessments are enforced within the SMEs in Nairobi CBD.

### 4.4.3 Descriptive results for Monitoring

The participants were to rate various statements relating to monitoring and fraud prevention and detection among SMEs. A 5-point Likert scale was used whereby 1= strongly disagree, 2 = disagree, 3 = Neutral, 4 = agree and 5 = strongly agree. The results are depicted in Table 4.5.

**Table 4. 5: Monitoring results**

	N	Mean	Median	Std. Deviation
Our organization investigates and rectifies all complaints.	292	3.98	4.00	1.20
In our organization, there are proper mechanisms for evaluation of activities and information.	292	2.92	3.00	1.19
In our organization, the management take corrective measure.	292	3.80	4.00	1.21
In our organization there is restriction to accessibility of information.	292	3.52	4.00	1.07
In our organization there is an easier, quicker, and safe means of passing information	292	3.95	4.00	1.02

**Source: Primary Data, (2023)**

The respondents were presented with 5 questions on monitoring within the SMEs. The summary of the research responses showed there was agreement that monitoring helps to prevent fraud within SMEs, as indicated by a median of 4.00. The study noted agreement among respondents that their organization investigates and rectifies all complaints thus assisting in fraud prevention and detection (mean = 3.98, SDV=1.20). The study indicated agreement among respondents that

an easier, quicker and safe means of passing information is vital in fraud prevention and detection within the SMEs (mean = 3.95, SDV 1.02). The respondents also agreed that the management take corrective measures whenever there's suspicion of fraud, and this helps in fraud prevention and detection within SMEs (mean = 3.80, SDV=1.21). The above findings show agreement that to some extent, monitoring is done within the SMEs in Nairobi CBD.

#### 4.4.4 Descriptive results for Fraud Prevention and Detection

The participants were to rate various statements relating to fraud prevention and detection among SMEs. A 5-point Likert scale was used whereby 1= strongly disagree, 2 = disagree, 3 = Neutral, 4 = agree and 5 = strongly agree. The results are depicted in Table 4.6.

**Table 4. 6: Fraud Prevention and Detection results**

	N	Mean	Median	Std. Deviation
Our company has mechanisms to identify, measure and analyze risk.	292	3.85	4.00	1.12
In our company, there is a presence of established structures for fraud prevention and detection.	292	3.26	4.00	1.23
In our company, there is severe scrutiny of daily transactions that are undertaken in a particular financial period.	292	3.28	3.00	.997
In our organization, there is application of proper accounting principles.	292	3.63	4.00	1.23

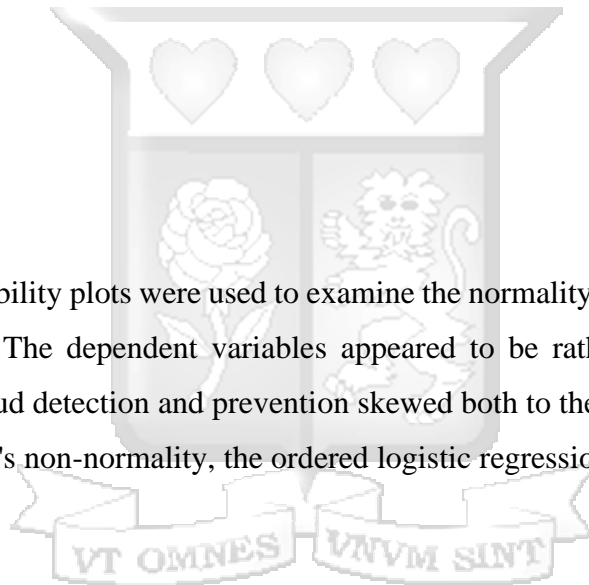
**Source: Primary Data, (2023)**

The respondents were presented with 5 questions on fraud prevention and detection within SMEs. The summary of the research responses showed there was agreement that internal control systems help to prevent fraud within SMEs, as indicated by a median of 4.00. The study noted agreement among respondents that the presence of mechanisms to identify, measure, and analyze risk assists in fraud prevention and detection (mean = 3.85, SDV=1.12). The study indicated agreement among respondents that an application of proper accounting principles is vital in fraud prevention and detection within SMEs (mean = 3.63, SDV 1.23). The respondents also agreed that severe scrutiny of daily transactions that are undertaken in a particular financial period helps in fraud prevention and detection among SMEs (mean = 3.80, SDV=1.21). The above findings show agreement that to some extent, internal control systems are set up and implemented by SMEs in Nairobi CBD.

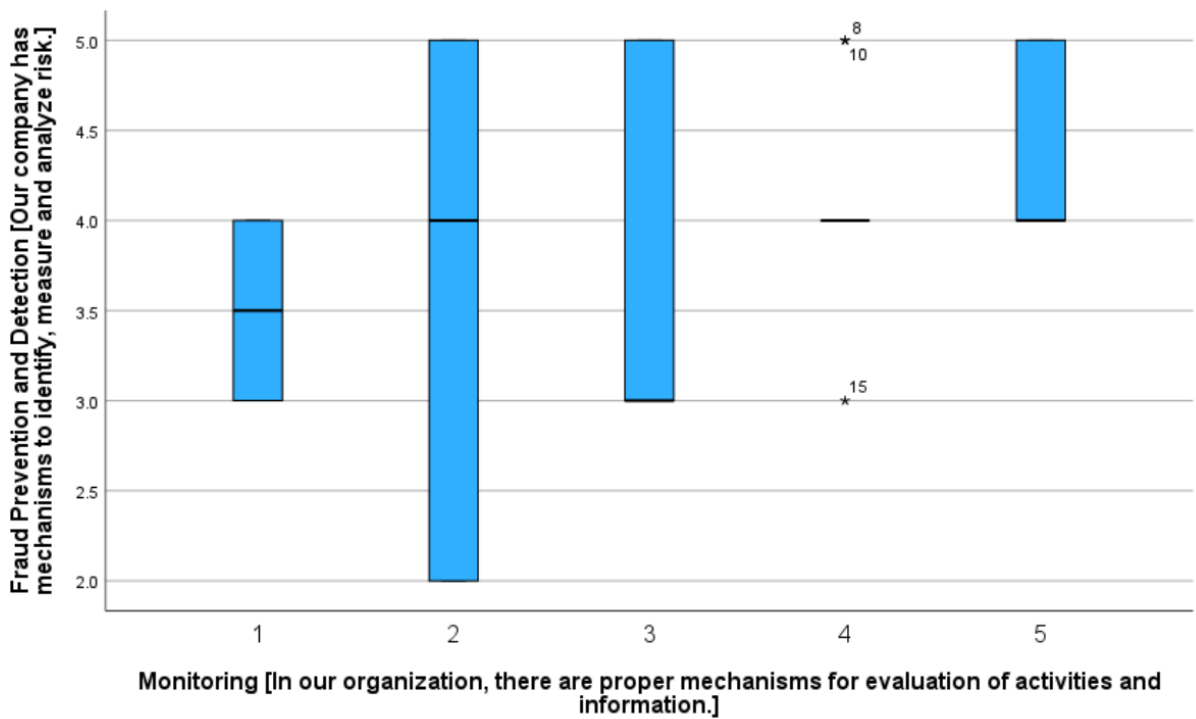
#### **4.4.5 Diagnostic tests**

##### **4.4.5.1 Normality tests**

Both box plots and probability plots were used to examine the normality of the dependent variable and the other variables. The dependent variables appeared to be rather skewed based on the numbers shown, with fraud detection and prevention skewed both to the right and to the left. Due to the dependent variable's non-normality, the ordered logistic regression method was used in the multivariate analysis.

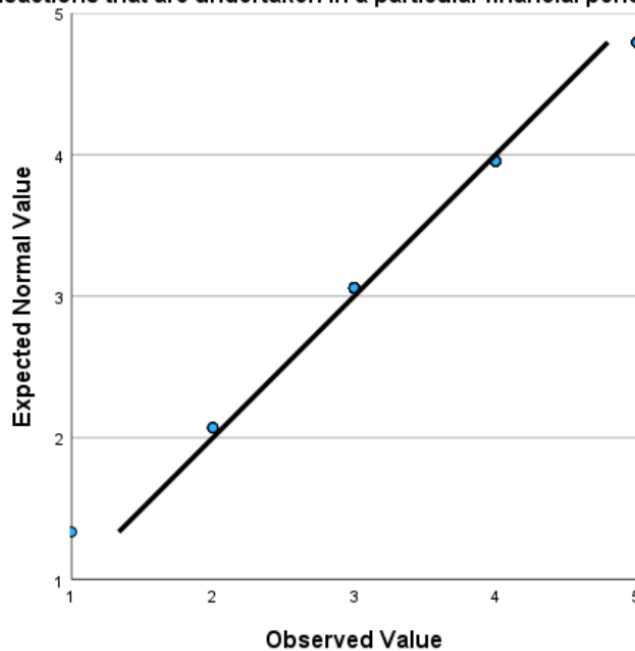


**Figure 4. 1: Normality test using box plots**



**Figure 4. 2: Probability plots for the dependent variables**

Normal Q-Q Plot of Fraud Prevention and Detection [In our company, there's severe scrutiny of daily transactions that are undertaken in a particular financial period..]



#### 4.4.5.2 Multicollinearity test

Using the variance inflation factors (VIFs), a multicollinearity test for the independent variables was also carried out. According to the findings as presented in Table 4.7, the greatest VIF was 1.04, which is below 5, indicating that multicollinearity was not a significant issue in the independent variables.

**Table 4. 7: Variance inflation factors and tolerance**

Variable	Collinearity Statistics	
	Tolerance (1/VIF)	VIF
IV6 Monitoring	.966	1.035
IV5 Monitoring	.958	1.044
IV4 Risk assessment	.991	1.009
IV3 Risk assessment	.631	1.580
IV2 Control environment	.650	1.540
IV1 Control environment	.662	1.510
Gender	.993	1.010
Categories of Business	.619	1.620



#### 4.4.5.3 Kruskal–Wallis equality-of-populations rank test

Given the non-parametric character of the data, a test was run to see whether the organization categories—real estate, supplies, services, distribution, or manufacturing companies' general responses—have any significant effects on the means of the dependent variable. The chi-square coefficients are not significant at the 5% level according to the Kruskal Wallis equality of populations rank test. As a result, the study ruled out the alternative theory and concluded that replies from both sets of respondents come from a single distribution. As a result, there is no statistically significant difference between the responses. This makes a case for analyzing all 292 responses collectively rather than breaking them down into five business categories. Table 4.8 presents the Kruskal-Wallis equality-of–population rank test results.

**Table 4. 8: Kruskal–Wallis equality-of-populations rank test**

<i>DV_Fraud Prevention and Detection, by (Categories of Business Enterprise)</i>					
Business Enterprise	N	N%	Kruskal–Wallis		
			chi2	probability	
1	45	15.4%	.016	.899	
2	57	19.5%	.984	.321	
3	72	24.7%	1.812	.178	
4	81	27.7%	.414	.520	
5	37	12.7%	.260	.610	

## 4.5 Inferential Analysis

### 4.5.1 Principal Component-Factor Analysis (PCFA)

Many variables will result in multicollinearity or make it harder to identify the factors in multiple regression (Tong et al., 2014). For factor extraction in the study, principal component analysis (PCA) was performed. PCA is appropriate for factor analysis when a researcher has created an instrument and needs to minimize the number of latent variables. When there are no existing models or theoretical foundations, this approach is preferred (Taherdoost et al., 2020).

#### 4.5.1.1 PCFA for the independent variables

The principal component-factor analysis (PCFA) was used to create a fair summary of the study's findings about the correlations between the variables without disclosing too much information (Hayton et al., 2004). The study used KMO and Bartlett's Tests, principal component analysis, scree plots, and rotated component matrices to show research findings. The results are shown in Table 4.9.

**Table 4. 9: Eigen Values and Sampling Adequacy Tests**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.007	26.711	26.711	4.007	26.711	26.711
2	2.786	18.571	45.282	2.786	18.571	45.282
3	1.871	12.474	57.756	1.871	12.474	57.756
4	1.304	8.692	66.448	1.304	8.692	66.448
5	1.171	7.808	74.255	1.171	7.808	74.255
6	1.055	7.036	81.291	1.055	7.036	81.291
7	.811	5.405	86.696			
8	.498	3.317	90.013			
9	.418	2.784	92.796			
10	.360	2.398	95.194			
11	.210	1.403	96.597			
12	.169	1.128	97.725			
13	.143	.956	98.680			
14	.121	.804	99.485			
15	.077	.515	100.000			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				.586		
Bartlett's Test of Sphericity				Approx. Chi-Square		
				278.763		
				Df		
				105		
				Sig.		
				.000		

**Table 4. 10: Principal Component Analysis (Factor Analysis)**

		<b>Component Matrix<sup>a</sup></b>					
Variable		Component					
		1	2	3	4	5	6
Cont_Env 1	In our organization, there's proper verification of supporting documents.	.507	.216	.385	-.079	-.224	.623
Cont_Env 2	In our organization, the lines of power and responsibility are well defined and well-understood.	-.082	.377	.371	.542	.494	-.039
Cont_Env 3	The most crucial methods for safeguarding business cash in our organization are authorization, duty segregation, and reconciliation.	.440	.102	.686	.288	-.196	.133
Cont_Env 4	In our organization, there are proper structures that facilitate follow-up on delegated responsibilities.	.558	.289	-.461	.443	-.131	-.133
Cont_Env 5	In our organization, the management has instituted mechanisms of promoting and compensating employees.	.129	.387	.229	-.167	.777	.139
Risk _ Asses 1	In our organization, the management has put in place mechanisms for identifying potential risks.	.373	.738	-.231	.321	-.114	-.039
Risk _ Asses 2	In our organization, our risk assessment plan entails a response to potential risks by the management.	.464	.376	-.467	-.153	.100	.380
Risk _ Asses 3	In accordance with the company's standards and requirements, there's periodic reconciliations for transactions.	.776	.194	-.112	-.144	.028	-.373
Risk _ Asses 4	In our company, the management has established specific mechanisms for the mitigation of risks.	.485	.174	-.190	-.553	.219	-.072
Risk _ Asses 5	In our company, the source of the risk is investigated in order to determine how to assess.	.693	-.063	.348	.076	-.010	-.458
Monit _ 1	Our organization investigates and rectifies all complaints.	.628	.329	.331	-.326	-.260	-.030
Monit _ 2	In our organization, there are proper mechanisms for evaluation of activities and information.	.657	-.279	-.382	.143	.128	.078

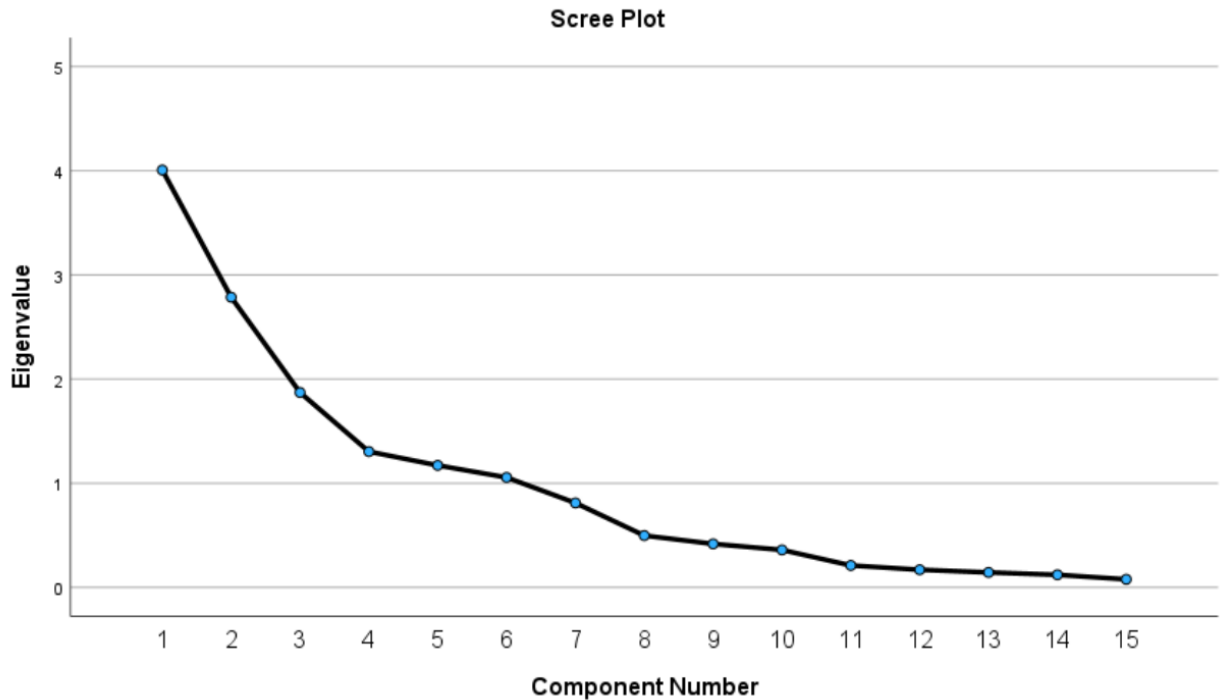
Monit_3	In our organization, the management take corrective measures.	.426	-.662	-.302	.326	.142	.292
Monit_4	Monitoring [In our organization there's restriction to accessibility of information.	.457	-.722	.206	-.067	.205	-.109
Monit_5	In our organization there's an easier, quicker and safe means of passing information.	.576	-.671	.138	.023	.023	.091

Extraction Method: Principal Component Analysis.

a. 6 components extracted.



**Figure 4. 3: Scree Plot of Eigenvalues**



The study evaluated the sample's eligibility for factor analysis using the Kaiser Meyer-Olkin Measure of Sampling Adequacy (KMO). According to KMO, a variable should have a minimum value of 0.5; good values are between 0.7 and 0.8, and excellent values are above 0.8. To be acceptable, Bartlett's Test of sphericity must be significant ( $p.05$ ). Table 4.9's findings reveal a KMO score of 0.586, which is sufficient for the Bartlett Test of sphericity ( $Sig = .05$ ). This shows that factor analysis may be done with independent variables.

According to the findings, the independent variable's six components were extracted. Eigenvalues above 1.0 are necessary to meet the cut-off for the variable selection. The research's findings are presented in Table 4.9, which demonstrates that the factors had eigenvalues greater than 1. Values above one were taken into account and understood as factors. In the data matrix, the six factors accounted for 81.291% of the variants. About 26.71% of the variance is explained by component one, followed by about 18.571% by component 2, about 12.474% by component 3, about 8.692% by component 4, about 7.808% by component 5, and then about 7.036% by component 6.

After factor extraction, the variables were rotated using the varimax method. The rotated factor loadings in the rotated component matrix represent the correlations between the variables and the factors. One considers a factor loading of 0.3 or above to be adequate (Cohen et al., 2013). For the study, the minimum required criterion of 0.3 was met by the factor loading for the sub-variables of independent variable ranges that fit in components 1, 2, 3, 4, 5, and 6. The matrix in Table 4.9 provides the correlation between the variables and each of the retrieved factors. In order to select the variables that make up each component, the variable with the highest value in each row is picked to be a member of that factor. 14 sub-variables make up component 1, 10 sub-variables make up component 2, 8 sub-variables make up component 3, 8 sub-variables make up component 4, 9 sub-variables make up component 5, and 7 sub-variables make up component 6. According to the scree plot shown in Figure 4.3, a six-factor model should be enough. The slope levels off after the fourth factor, which explains this.

#### 4.5.1.2 PCF analysis for the dependent variable

With minimal information loss, factor analysis is utilized to produce a meaningful summary of the study's conclusions regarding the correlations between the variables (Hayton et al., 2004). Table 4.11 displays the factor loadings and corresponding eigenvalues for the dependent variables, to present research findings for the dependent variable. Figure 4.5 also displays the scree plot for the dependent variable's eigenvalues.

**Table 4. 11: Factor loadings for the dependent variable**

<b>Component Matrix<sup>a</sup></b>		<b>Component</b>
<b>Variable</b>		<b>1</b>
Frau_Prev 1	Our company has mechanisms to identify, measure and analyze risk.	-.670
Frau_Prev 2	In our company, there's a presence of established structures for fraud prevention and detection.	-.740

Frau_Prev 3	In our company, there's severe scrutiny of daily transactions that are undertaken in a particular financial period.	<b>.717</b>
Frau_Prev 4	In our organization, there's application of proper accounting principles.	.709

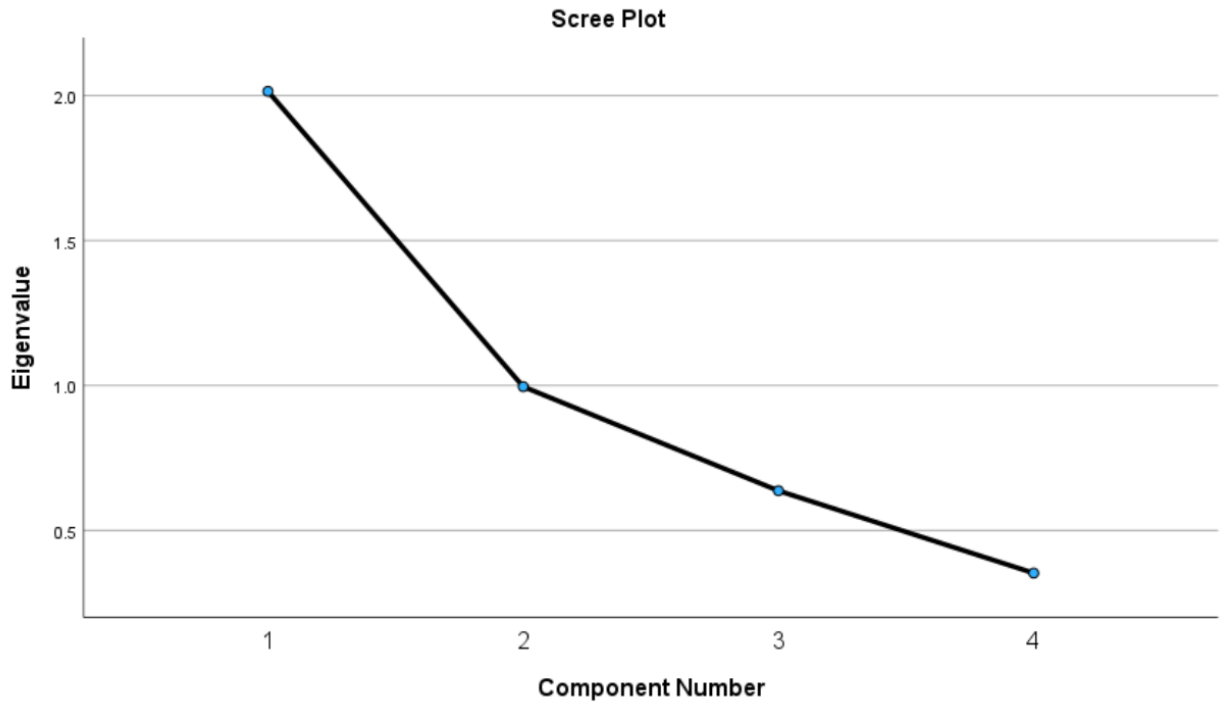
Extraction Method: Principal Component Analysis.

a. 1 components extracted.

**Table 4. 12: Eigen Values and Sampling Adequacy Tests**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.015	50.365	50.365	2.015	50.365	50.365
2	.996	24.896	75.261			
3	.637	15.920	91.182			
4	.353	8.818	100.000			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				.533		
Bartlett's Test of Sphericity				Approx. Chi-Square		
				26.967		
				df		
				6		
				Sig.		
				.000		

**Figure 4. 4: Scree plot for the eigenvalues – dependent variable**



After factor extraction, the dependent variable was subjected to varimax rotation. The rotated factor loadings in the rotated component matrix represent the correlations between the variable and the factors. One considers a factor loading of 0.3 or above to be adequate (Cohen et al., 2013). The factor loading for the dependent variable ranges that fit in component 1 and met the minimum suggested threshold of 0.3 was used for the study. The matrix in table 4.11 provides the correlation between the variable and each of the retrieved parameters. In order to select the variables that make up each factor, the variable with the highest value in each row is picked to be a member of that factor. Factor 1 contains two sub-variables.

According to the study's findings, one component of the dependent variable was considered. Eigenvalues above 1.0 are necessary to meet the cut-off for the variable selection. Table 4.11's research findings reveal that one element had an eigenvalue greater than 1. Values above one were taken into account and understood as factors. In the data matrix, the single component accounted for 50.356% of the variations. The component accounts for around 50.356% of the variance.

According to the scree plot shown in Figure 4.4, a 2-factor model ought to be adequate. The slope levels off after the second factor, which explains this.

#### **4.5.1.3 Correlation Analysis**

The purpose of the study was to ascertain how the factors interacted with one another. Since the research was based on questionnaires with Likert scales, Spearman Rank correlation was deemed to be the most appropriate method. Table 4.13 shows the results of the correlation test.



**Table 4. 13: Spearman’s Rank Correlation results**

			<b>Gender*</b>	<b>Bus enterprise*</b>	<b>IV 1_Cont. Environ.</b>	<b>IV 2_Cont. Environ.</b>	<b>IV_3 Risk Asses.</b>	<b>IV_4 Risk Asses.</b>	<b>IV_5 Monit.</b>	<b>IV_6 Monit.</b>	<b>DV_1 Fraud Prev. and Detec.</b>
<b>Spearman's rho</b>	Gender*	Correlation Coefficient Sig. (2-tailed)	1.000								
	Business enterprise*	Correlation Coefficient Sig. (2-tailed)	.	.							
	IV 1_Cont. Environ.	Correlation Coefficient Sig. (2-tailed)	.244**	.	1.000						
	IV_2 Cont. Environ.	Correlation Coefficient Sig. (2-tailed)	.146	.	.	1.000					
	IV_3 Risk Asses.	Correlation Coefficient Sig. (2-tailed)	.066	.	.176	.330*	1.000				
	IV_4 Risk Asses.	Correlation Coefficient Sig. (2-tailed)	.699	.	.296	.	.467**	1.000			*
	IV_5 Monit.	Correlation Coefficient Sig. (2-tailed)	.375*	.	.311	.046	.004	.	1.000		
		Correlation Coefficient	.022	.	.061	.580	.				
		Correlation Coefficient	-.046	.	.309	.062	.289	.298	1.000		
		Correlation Coefficient	.786	.	.062	.062	.289	.298	1.000		
		Correlation Coefficient	.178	.	.560**	.062	.289	.298	1.000		

		Sig. (2-tailed)	.293	.	<.001	.716	.083	.073	.		
IV_6	Correlation		.141	.	.132	-.104	.150	.387*	.259	1.000	
Monit.	Coefficient	Sig. (2-tailed)	.405	.	.436	.541	.374	.018	.121	.	
DV_1	Correlation		-.298	.	.054	-.126	-.490**	-.358*	-.163	.356*	1.000
Fraud	Coefficient	Sig. (2-tailed)	.073	.	.752	.456	.002	.029	.336	.030	.
Prev. and											
Detec.											
VIFs			1.01	1.620	1.510	1.540	1.580	1.009	1.044	1.035	Na
Tolerance			.993	.619	.662	.650	.631	.991	.958	.966	Na

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).



The study sought to establish the effectiveness of control environment, risk assessment, and monitoring in detecting and preventing fraud among SMEs in Nairobi Kenya. The results showed that there was a weak correlation between the control environment and fraud detection and prevention among SMEs in Nairobi Kenya ( $R_h = .244$ ,  $Sig = .001 < .05$ ) It was therefore concluded that the control environment parameters do not have much influence on fraud detection and prevention on their own. The study's findings deviated from other studies which showed different results. The study's results showed that risk assessment has a significant effect on fraud detection and prevention ( $R_h = .467$ ,  $Sig = .004 < .05$ ). This implies that risk assessment explains 46.7% of the variability in fraud detection and prevention among SMEs in Nairobi Kenya. It was also concluded that the mechanisms put in place are effective in fraud prevention. The conclusion of the study was that the monitoring of activities that are carried out by SMEs in Nairobi Kenya was working properly to address the issues of fraud among SMEs ( $R_h = .560$ ,  $Sig = < .001$ ). This implies that monitoring of activities explains 56.0% of the variability in fraud detection and prevention among SMEs in Nairobi Kenya. The study's results also show that fraud detection and prevention parameters significantly affect fraud prevention and detection among SMEs in Nairobi Kenya ( $R_h = .356$ ,  $Sig = .030 < .05$ ).

VIF measures how estimation accuracy is impacted by multicollinearity among the Xs in a regression model. It explains how much multicollinearity among the predictors affects the precision of an estimate. To evaluate any potential multicollinearity among the explanatory or predictive components, the VIF statistic is used. VIF is determined as  $1/(1-R^2)$  for each of the  $k - 1$  independent variable equations. For the categories of gender, category of business, control environment 1 and 2, risk assessment 1 and 2, and monitoring 1 and 2, the VIFs of 1.010, 1.620, 1.510, 1.540, 1.580, 1.009, 1.044, and 1.035, respectively, were reported. Multicollinearity was not an issue among the study's independent variables because the VIFs were under 5.

#### **4.5.2 Ordinal (Ordered) Logistic Regression**

The relationship between the independent variables and the dependent variable was demonstrated using ordinal regression analysis. The outcomes of the ordered logistic regression are shown in Table 4.14. There were 292 total observations, and no values were missing. To test the reliability

and significance of the coefficients on the independent variables, both disaggregated (models 1-6) and aggregated (model 7) analyses were carried out. Results from the aggregated model 7 are extensively used in the reporting and interpretation of the findings.

**Table 4. 14: Ordered Logistic Regression results- Fraud Detection and Prevention**

<i>Dependent variable</i>		<i>Fraud Detection and Prevention</i>						
<i>Model</i>	[1]	[2]	[3]	[4]	[5]	[6]	[7]	
<i>Independent variables</i>								
IV1_Control Environment	-.244 (.146)						-0.418 (-0.44)	
IV1_Control Environment		.066 (.699)					<b>.279*</b> *	
IV2_Risk Assessment			.375* (.022)				<b>.770*</b> *	
IV2_Risk Assessment				.467*** (.004)			<b>.691*</b> *	
IV3_Monitoring					.560*** (.001)		<b>.673*</b> *	
IV3_Monitoring						.387 (.018)	<b>.731*</b> *	
<i>Controls</i>								
Gender	0.600** *	1.042** *	1.090** *	0.631** *	0.367** *	0.237** *	.736* *	
Business Category	(1.01) -0.049 (-0.29)	(-.032) -0.012 (-0.11)	(0.73) -0.090 (-0.23)	(0.07) -0.063 (-0.31)	(1.73) -0.023 (-0.41)	(1.57) -0.052 (-0.67)	(.000) .253* *	
<i>Model specification</i>								
LR chi <sup>2</sup>	235.10	125.01	63.46	256.20	401.63	87.40	688.5	
Prob > chi <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pseudo R <sup>2</sup>	0.02	0.22	0.12	0.04	0.32	0.16	0.26	

Log likelihood	-709.56	-714.61	-715.38	-699.01	-759.01	-639.01	-
							682.8
							5
Number of observations	292	292	292	292	292	292	292

Note: \*, \*\* and \*\*\* denote significance at the 10, 5, and 1 percent, respectively. z-values are in parentheses.

From the findings in Table 4.14, there was a strong positive correlation between risk assessment and monitoring and fraud detection and prevention with correlation coefficients of 0.770 and 0.731 respectively. There was a weak correlation between control environment and fraud detection and prevention with a correlation coefficient of 0.279. These results mean that fraud detection and prevention are determined to a greater extent by conducting risk assessments and monitoring activities. On the other hand, the control environment had a weak correlation which means that the control environment does not have much influence on fraud detection and prevention on its own.

The model specification in Table 4.13 presented the robustness of the regression results – the Prob, LR, and Pseudo R<sup>2</sup>. The statistical significance of the final model determines if there is a link between the independent variables and the dependent variable. According to the findings, as shown in Table 4.13, the -2 Log Likelihood of the model with only intercept was 688.51, and the -2 Log Likelihood of the model with intercept and the independent variables is 0.000. The difference (Chi-square statistics) is  $688.51 - 0.000 = 688.51$  which is significant at  $\alpha=0.05$ , as the p-value is 0.000. This suggests that the complementary Log-log link function has a significant relationship between the dependent and independent variables. Because the pseudo-R-squared in the model specification has a maximum value that is not 1, as shown by the probability value of 0.26, the entire model almost accurately predicts the result. R-squared = 0.26 represents the likelihood that the model will accurately predict the outcome.

#### 4.6 Chapter Summary

The study's findings showed that there was a weak correlation between the control environment and fraud detection and prevention with a correlation coefficient ( $R_h = .244$ ,  $Sig = .001 < .05$ ) It was therefore concluded that the control environment parameters do not have much influence on

fraud detection and prevention on their own. The study's findings deviated from other studies which showed different results. The study also found that risk assessment has a significant effect on fraud detection and prevention ( $Rh = .467$ ,  $Sig = .004 < .05$ ). This implies that risk assessment explains 46.7% of the variability in fraud detection and prevention among SMEs in Nairobi Kenya. It was also concluded that the mechanisms put in place are effective in fraud prevention. Finally, the study found that monitoring of activities has a significant effect on fraud detection and prevention among SMEs in Nairobi Kenya ( $Rh = .560$ ,  $Sig = < .001$ ). This implies that monitoring of activities explains 56.0% of the variability in fraud detection and prevention among SMEs in Nairobi Kenya. The study's results also show that fraud detection and prevention parameters significantly affect fraud prevention and detection among SMEs in Nairobi Kenya ( $Rh = .356$ ,  $Sig = .030 < .05$ ).



## CHAPTER FIVE

### DISCUSSION OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter discusses the study's limitations as well as its findings, conclusions, recommendations for use in practice, and suggestions for further research. The study's main purpose was to investigate the effectiveness of Internal Control Systems on fraud detection and prevention among small and medium-sized enterprises in Nairobi, Kenya

#### 5.2 Discussion of the findings

##### 5.2.1 Effect of the control environment on fraud detection and prevention among SMEs in Nairobi Kenya

The study's findings showed that there was a weak correlation between the control environment and fraud detection and prevention. It was therefore concluded that the control environment parameters do not have much influence on fraud detection and prevention on their own. These findings concurred with those of Thao (2018), which demonstrated that the control environment has a weak positive effect on ICS in corporate institutions. The study's conclusions deviated from other studies which showed different results. According to a study by Gesare et al. (2016), banks in Kisii town's control environment considerably improve the way they manage fraud risk. Kumuthinidevi (2016) concluded that the control environment in private institutions supports the efficacy of ICS to a limited extent. As a result, it can be concluded that while the measures in place can prevent and detect fraud, they are not powerful enough, according to test results, to fully handle the problem of fraud prevention and detection. The reviewed studies produced contradictory findings; hence it is crucial to establish the truth by conducting further studies in the field. Hence, the study's null hypothesis was that the Control environment has no significant effect on fraud prevention and detection among SMEs in Nairobi, Kenya.

Wanjala and Riitho (2020) analyzed the relationship between the implementation of internal controls and the mitigation of fraud among the Association of Savings and Credit Cooperatives of Kenya (Saccos). According to the study's findings, all the internal control system variables mentioned greatly affected the mitigation of fraud among the Saccos in Kenya. Further, the findings of the study showed that it is necessary for Saccos to work hard and implement an internal control system to a greater extent to solve the persistent fraud problem it solves. The finding of this study is contrary to the finding of the current study which provides that the control environment does not significantly affect fraud prevention and detection among SMEs. It can be concluded that while the measures in place can prevent and detect fraud, they are not powerful enough, according to test results, to fully handle the problem of fraud prevention and detection. Therefore, it would be wise to strengthen current guidelines or implement new, more potent measures. This explains the differences with the current study.

The results of a different study revealed that the control environment significantly impacted financial performance (Etengu & Amony, 2016). The results of Amudo and Inanga (2009) demonstrated that the control environment was not dependable and thus fraud detection and prevention were not effective and efficient. It has been demonstrated that the control environment from the inferential analysis has a weak relationship between control environment with fraud prevention and detection. The control environment includes integrity issues, a code of conduct, employee competencies, and a proper chain of command among other factors that ensure that the recruited personnel are well scrutinized to confirm that employees are of high integrity and competence. The inferential findings that show a weak relationship between the control environment and fraud prevention and detection are not expected in the majority of cases. It can be concluded that while the measures in place can prevent and detect fraud, they are not powerful enough, according to test results, to fully handle the problem of fraud prevention and detection. Therefore, it would be wise to strengthen current guidelines or implement new, more potent measures. This explains the similarities and differences with the current study.

The management of SMEs should emphasize the control environment parameters together with other ICSs to make sure that the rules and processes set to evaluate employees' competencies and integrity are updated and enforced and proper continuous evaluations are conducted. All other

components are impacted by the control environment, hence proper operation should be given more priority. Fraud prevention and detection should be made easier by an effective control environment.

### **5.2.2 Effect of risk assessment on fraud detection and prevention among SMEs in Nairobi Kenya**

The study's results showed that risk assessment has a significant effect on fraud detection and prevention. It was therefore concluded that the risk assessment mechanisms put in place are effective in fraud prevention and detection. Akwaa-Sekyi and Gené (2017) also discovered that risk assessment had a marginally significant impact on fraud detection and prevention. Gesare et al. (2016) concluded that there is a strong positive correlation between fraud risk management and risk assessment. This indicated that the effectiveness of risk management for fraud is directly impacted by the quality of risk assessment. Risk assessment has a high quality because of management's awareness of the risk assessment procedures as per the respondents' feedback. Further, it can be concluded that the similarities in the studies' findings could be because the management puts in motion activities to stop fraudulent activities when they get a hint of risk potential.

In the same breadth, Moloi (2016) investigated how risk monitoring improves performance in the context of South African Small and Medium Sized Enterprises. The investigation utilized the descriptive examination style and the focus on the population was 225 representatives. The study's findings demonstrated that risk assessment and evaluating risks are both parts of the SME's monitoring of hazards. Continual assessment of potential risks that can have an impact on the business is essential for improving overall performance. This study is in line with the current study's findings which show that risk assessment has a significant effect on fraud detection and prevention. It can be concluded that the similarities in the studies' findings could be because the management puts in motion activities to stop fraudulent activities when they get a hint of risk potential.

Risk assessment is a key tool in fraud prevention and detection because it aids in early fraud detection before occurrence. The management initiates steps to halt fraudulent actions as soon as the slightest potentials are detected. In conclusion, risk assessment aids in the fight against fraud. To close legal and organizational policy gaps, it is necessary to improve place identification, analysis, quantification, and risk reduction.

### **5.2.3 Effect of monitoring activities on fraud detection and prevention among SMEs in Nairobi Kenya**

The conclusion of the study was that the monitoring of activities that are carried out by SMEs in Nairobi Kenya was working properly to address the issues of fraud among SMEs. The results of the study were consistent with those of studies by Etengu and Amony (2016), who found that monitoring had a substantial impact on fraud detection and prevention, and Ayagre et al. (2014), who examined the effectiveness of ICS in Ghanaian financial institutions and discovered that monitoring efforts on ICS were successful in the banks. The study's conclusions were at odds with those of Amudo and Inanga (2009), who assessed ICS in Uganda. The study concluded that project monitoring did not operate as intended, however, the shortcomings were attributed to a lax control environment. It can be concluded that while the monitoring of activities measures in place by various organizations can prevent and detect fraud, they are not powerful enough to fully handle the problem of fraud prevention and detection. Therefore, it would be wise for organizations to strengthen the guidelines or implement new, more potent measures. This explains the similarities and differences with the current study.

The study's conclusion is in line with Muhunyo and Jagongo (2018) who conducted a study to investigate the impacts of risk assessment, risk investigation, control conditions, monitoring, and collaboration on fraud detection and prevention. A sample of 96 employees and a descriptive research methodology were used in the study. The results of the study demonstrated that teamwork, risk investigation, control activities, monitoring, and appraisal of risks all had a favorable impact on fraud detection and prevention. It can be concluded that the similarities in the studies' findings could be because the management puts in motion activities to stop fraudulent activities when they get a hint of risk potential.

### **5.3 Limitations of the Study**

Research limitations are flaws in the methodology used that may prevent an accurate interpretation of the research findings. This study included SMEs in Nairobi's central business district. The results of this study cannot be applied to other counties in Kenya because it was restricted to Nairobi County. It was challenging to determine whether the managers and owners were speaking the truth. This was resolved by the researcher by using the instrument's reliability and validity to assess whether the questions adhered to the necessary standards.

Additionally, surveys were employed to obtain data. Since there are no reliable means to determine how true the responses are, Greener (2008) claimed that responses might have low validity. Furthermore, because questionnaires depend on respondents' memory, they are prone to recall bias. To overcome this obstacle, the researcher used the validity and reliability of the research tool to make sure the questionnaire's items covered what they were intended to. The ability and willingness of respondents to respond is a requirement for using questionnaires as a data-gathering tool in research. This problem was solved by assuring the participants that any information given throughout the data collection process would be treated in the strictest confidence. The researcher also asked NACOSTI and the university administration for permission to collect data.

### **5.4 Conclusions**

The findings of this study indicate that risk assessment and monitoring have a significant influence on fraud detection and prevention among SMEs in Nairobi, Kenya. On the other hand, the control environment does not independently have a significant influence on fraud detection and prevention. The combined influence of the internal control system and fraud detection and prevention is reported as significant with a model significant value of 0.000. The finding of this study are consistent with Wanjala and Riitho (2020) who studied the relationship between the implementation of internal controls and the mitigation of fraud among the Association of Savings and Credit Cooperatives of Kenya (Saccos). According to the study's findings, all the internal

control system variables mentioned greatly affected the mitigation of fraud among the Saccos in Kenya.

However, the findings of this study differ with the findings of other scholars: Amudo and Inanga (2009) who found that the control environment was not dependable and thus fraud detection and prevention were not effective and efficient. The results of the study demonstrated that monitoring activities had a substantial impact on fraud prevention and detection. In order to increase the monitoring operations' capacity to confront the complex nature of modern fraud perpetration, the study advises that they be assessed and revised on a regular basis. The test results on the control environment showed that control activities among SMEs in Nairobi, Kenya, have a little impact on preventing fraud. As a result, it can be said that while the measures in place can prevent fraud, they are not powerful enough, according to test results, to fully handle the problem of fraud prevention. Hence, it would be wise to strengthen these constraints or add additional, potent mechanisms. Surprise checks should also be improved by the organizations to help with internal audits. Employees will be discouraged from colluding and committing other types of fraud as they won't be able to predict when they'll get 'surprise' checks. Regular staff rotation is recommended, as well as peer reviews of other employees' work in other departments.

## **5.5 Recommendations**

### **5.5.1 Managerial recommendations**

It is advised that SMEs should promote morally upright behavior by paying high achievers generously, acknowledging them, or elevating them. To prevent other employees from breaking the code of conduct, the offenders should be investigated and litigated. Rewarding moral behavior encourages employees to continue doing the right thing, which lowers fraud cases. The deterrent impact of punishing the guilty parties will stop others from committing fraud. The management should also create a policy document that can close the gaps in accounting requirements and other laws that SMEs employ to manipulate profits and deceive investors.

### **5.5.2 Policy Recommendations**

Authorities and management should lobby for the efficient and effective operation of bodies that oversee SMEs. Further, the management of SMES should support the existing regulatory organizations rather than replace them. Public policies can contribute towards limiting organizational fraud by sealing the loopholes in the accounting standards and other regulations that are used by fraudsters to commit fraud. Also, the authorities need to create a policy statement that would close the gaps in accounting standards and other laws that SMEs exploit to manipulate profits and deceive investors. Since there are so many factors that can affect an organization's vulnerability to fraud risks, the management of SMEs should ensure that the fraud risk assessment stays current and relevant. An appointed person within the organization should be assigned ownership of the fraud risk assessment process. That team or person should build processes to ensure that all changes in the business model, and company operating environment are considered relative to their impact on the company's risk of fraud.

### **5.5.3 Recommendation for Further Studies**

The primary goal of the study was to assess how well internal control systems in SMEs in Nairobi County prevent and identify fraud. However, the study was only able to look at three internal control factors: monitoring activities, risk assessment, and control environment. Considering this, the study suggests that additional research be done to determine other characteristics that affect fraud prevention and detection among small and medium-sized businesses in Kenya. The study's concentration on SMEs alone, use of primary data, and selection of managers are all limitations. Future research studies should be more inclusive, encompassing additional institutions, both primary and secondary data, and various levels of employees. Stemming from the measures suggested on how to detect and prevent fraud, a study on organizational culture by founders or managers of SMEs would also be ideal, to expound on the advantages of creating a fraud-proof work environment.

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## APPENDICES

### APPENDIX 1: INTRODUCTION LETTER

**Lauryn Akinyi Opiyo**  
Strathmore University,  
Strathmore Business School  
P.O. Box 59857 – 00200,  
**Nairobi.**

**Dear Respondent,**

#### **RE: RESEARCH DATA COLLECTION REQUEST**

I am a Strathmore University MCOM student working on a research project titled "**The Effectiveness of Internal Control Systems on Fraud Detection and Prevention among SMEs in Nairobi Kenya, Kenya.**"

This is a request for your feedback on your company's internal control systems and their effectiveness in the detection and prevention of fraud. Please keep in mind that your participation is greatly appreciated, but it is entirely voluntary. You will not be forced to take part in this research. Your responses are private and confidential and will not be shared with anyone else. We will keep your responses anonymous and confidential, and we will not collect any personal information without your permission.

The questionnaire will take you approximately 7 minutes to complete.

Thank you for participating.

Kind Regards,



---

**Lauryn Akinyi Opiyo.**

## APPENDIX 2: QUESTIONNAIRE

### INSTRUCTIONS:

Please mark the appropriate box with mark (x) to indicate your response to the following questions.

### SECTION A: GENERAL INFORMATION

#### 1. Gender

- Male
- Female

#### 2. Age Bracket

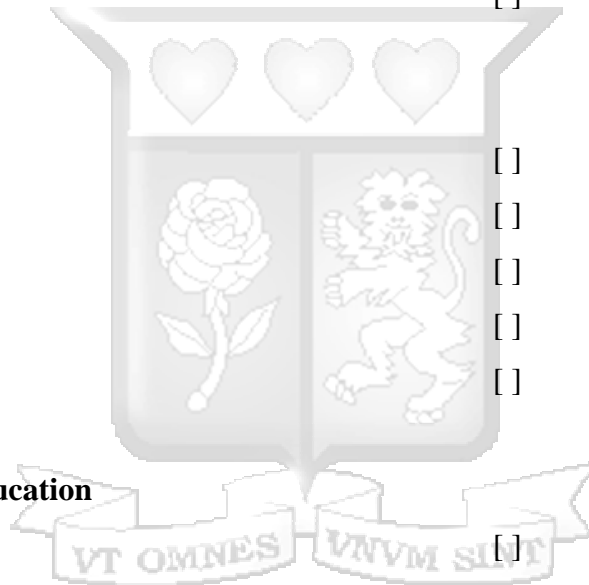
- 20 - 25 years
- 26 – 30 years
- 31 – 35 years
- 36 – 40 years
- Above 41 years

#### 3. Highest level of education

- No Education at all
- Primary Education
- Secondary Education
- Diploma
- Undergraduate
- Postgraduate

#### 4. For how long have you been in business?

- 0 – 5 years
- 6 – 10 years
- 10> years



**5. In which category does your business enterprise fall?**

- Real estate
- Supplies
- Services
- Distribution
- Manufacturing

**SECTION B: COMPONENTS OF INTERNAL CONTROL SYSTEM**

**CONTROL ENVIRONMENT**

7. This section assesses the extent to which your company is involved in the application of the control environment aspects of the internal control system. Please indicate your level of agreement with the statements below where **1 – Strongly Disagree (SD)**, **2 – Disagree (D)**, **3 – Neutral (N)**, **4 – Agree (A)**, **5 – Strongly Agree (SA)**

ITEM	SD	D	N	A	SA
	1	2	3	4	5
In our organization, there's proper verification of supporting documents					
In our organization, the lines of power and responsibility are well defined and well-understood.					
The most crucial methods for safeguarding business cash in our organization are authorization, duty segregation, and reconciliation.					
In our organization, there are proper structures that facilitate follow-up on delegated responsibilities.					

In our organization, the management has instituted mechanisms of promoting and compensating employees.					
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## RISK ASSESSMENT

8. This section assesses the extent to which your company is involved in the application of the risk assessment aspects of the internal control system. Please indicate your level of agreement with the statements below where **1 – Strongly Disagree (SD)**, **2 – Disagree (D)**, **3 – Neutral (N)**, **4 – Agree (A)**, **5 – Strongly Agree (SA)**

ITEM	SD 1	D 2	N 3	A 4	SA 5
In our organization, the management has put in place mechanisms for identifying potential risks.					
In our organization, our risk assessment plan entails a response to potential risks by the management.					
In accordance with the company's standards and requirements, there's periodic reconciliations for transactions.					
In our company, the management has established specific mechanisms for the mitigation of risks.					
In our company, the source of the risk is investigated in order to determine how to assess.					

## MONITORING

9. This section assesses the extent to which your company is involved in the application of the monitoring aspects of the internal control system. Please indicate your level of agreement with the statements below where **1 – Strongly Disagree (SD)**, **2 – Disagree (D)**, **3 – Neutral (N)**, **4 – Agree (A)**, **5 – Strongly Agree (SA)**

ITEM	SD	D	N	A	SA
------	----	---	---	---	----

	1	2	3	4	5
Our organization investigates and rectifies all complaints.					
In our organization, there are proper mechanisms for evaluation of activities and information.					
In our organization, the management take corrective measures.					
In our organization there's restriction to accessibility of information					
In our organization there's an easier, quicker and safe means of passing information					

**SECTION C: FRAUD PREVENTION AND DETECTION**

10. This section assesses the extent to which your company agrees with the assertion that the implementation of internal control systems leads to regulatory compliance and enhances the probing of suspects thus assisting in fraud prevention and detection. Please indicate your level of agreement with the statements below where **1 – Strongly Disagree (SD)**, **2 – Disagree (D)**, **3 – Neutral (N)**, **4 – Agree (A)**, **5 – Strongly Agree (SA)**

ITEM	SD	D	N	A	SA
	1	2	3	4	5
Our company has mechanisms to identify, measure and analyze risk.					
In our company, there's a presence of established structures for fraud prevention and detection.					
In our company, there's severe scrutiny of daily transactions that are undertaken in a particular financial period.					
In our organization, there's application of proper accounting principles					

**THANK YOU FOR YOUR PARTICIPATION**

## APPENDIX 2: LETTER OF ETHICAL APPROVAL TO CONDUCT RESEARCH



26<sup>th</sup> September 2022

Ms Akinyi Lauryn,  
Lauryn.Akinyi@strathmore.edu

Dear Ms Akinyi,

**RE: The Effectiveness of Internal Control Systems in Detection and Prevention of Fraud**

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU- masters** research proposal. Your application reference number is **SU-ISERC1487/22**. The approval period is from **26<sup>th</sup> September 2022 to 25<sup>th</sup> September 2023**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 48 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 48 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-ISERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.





Yours sincerely,

for: **Dr Ben Ngoye,**  
**Secretary; SU-ISERC**

**Cc: Prof Fred Were,**  
**Chairperson; SU-ISERC**



# APPENDIX 3: PERMISSION TO CONDUCT RESEARCH FROM NACOSTI

 <p>REPUBLIC OF KENYA</p>	 <p><b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b></p>
Ref No: <b>551542</b>	Date of Issue: <b>15/September/2022</b>
<b>RESEARCH LICENSE</b>	
	
<b>This is to Certify that Miss., Lauryn Akinyi of Strathmore University, has been licensed to conduct research in Nairobi on the topic: EFFECTIVENESS OF INTERNAL CONTROL SYSTEMS ON FRAUD DETECTION AND PREVENTION AMONG SMALL AND MEDIUM-SIZED ENTERPRISES IN NAIROBI KENYA. for the period ending : 15/September/2023.</b>	
License No: <b>NACOSTI/P/22/20324</b>	
<b>551542</b>	
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