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The Effect of fraud management strategies on the non-financial performance of microfinance banks in Nairobi County, Kenya.

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THE EFFECT OF FRAUD MANAGEMENT STRATEGIES ON THE NON-FINANCIAL PERFORMANCE OF MICROFINANCE BANKS IN NAIROBI COUNTY, KENYA

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DECLARATION

I hereby declare that this work has not been previously submitted or approved for the award of a degree at this or any other university. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where proper citation is provided.

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DEDICATION

This work is dedicated to my family and friends, who have been my rock throughout this endeavour. Your support and encouragement have been invaluable and I could not have reached this point without you.

ABSTRACT

Over the past decade, microfinance banks (MFBs) in Kenya have experienced a significant increase in the number and value of fraud cases, which has negatively impacted their performance. Despite various strategies and measures implemented to combat fraud, its incidence and effects continue to rise as fraudsters develop new methods. This study aims to assess the impact of fraud management strategies on the performance of MFBs in Kenya. Specifically, the study seeks to determine the effects of fraud risk deterrence, fraud risk prevention, fraud risk detection, and fraud risk mitigation on the non-financial performance of MFBs in Kenya.

The study is grounded in the Fraud Triangle Theory, the Theory of Differential Association, the Fraud Diamond Theory, and Institutional Theory. A positivist approach was adopted, employing a descriptive research design. The population consisted of the 13 licensed microfinance banks in Kenya, targeting 316 permanent employees in senior and middle management positions within each MFB as the unit of observation. Data was collected using a questionnaire administered via a Google link sent to each respondent. Analysis was performed using SPSS software, employing both descriptive statistics, such as frequency distributions, and inferential statistics. The findings were presented in tables and graphical formats, such as bar graphs and pie charts, for ease of interpretation.

The research revealed that non-financial performance was supported by the adoption of various effective fraud deterrence strategies by MFBs, including the use of fraud detection tools, preventive and control measures, and fraud investigation and detection practices. Additionally, fraud prevention strategies, such as frequent risk monitoring and employee training in fraud risk management, have been relatively successful. However, there is a need for greater clarity regarding whether these fraud risk prevention strategies are stringent enough to enhance non-financial performance. Many MFBs have not yet effectively institutionalized financial accountability through audit efficiency and fraud detection strategies.

The study recommends that MFBs enhance fraud risk deterrence by instituting punitive penalties for employees caught engaging in fraud and identifying the appropriate tools for implementation. Furthermore, obtaining the cooperation of other departments is crucial for effective fraud risk deterrence.

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LIST OF ABBREVIATIONS

ACFE	Association of Certified Fraud Examiners
CBK	Central Bank of Kenya
CIMA	Chartered Institute of Management Accountants
COSO	Committee of Sponsoring Organizations
FDT	Fraud Diamond Theory
FSD	Financial Sector Deepening Kenya
FTT	Fraud Triangle Theory
ISA	International Standard on Auditing
MFBs	Microfinance banks
MSMEs	Micro, Small, and Medium-sized Enterprises
NPLs	Non-Performing Loans
PLS	Partial Least Square
ROA	Return on Assets
SACCOs	Savings and Credit Cooperative Organisations/Societies
SASRA	Sacco Societies Regulatory Authority
SEM	Structural Equation Model
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Globally, many Micro Finance Institutions (MFBs) acknowledge that they have a problem with fraud (Bell, 2015); however, these MFBs have been unable to adequately deal with fraud and act on the entire risk landscape. The Central Bank of West Africa states that between 2017 and 2018, about 53 MFBs went out of business (Banque Centrale des Etats de l'Afrique de l'Ouest, 2018). Most MFBs failed due to occupational fraud, poor management, and poor governance (Riquet & Poursat, 2013). There are numerous other cases of outright embezzlement among MFBs worldwide; for instance, in the MFB sector in India, there are over 156 pending cases of cash embezzlement and 205 instances of cash being given out to non-existent borrowers (Arunachalam, 2014). The magnitude of such cases means that MFBs are illiquid and thus unable to return deposits to low-income clients (BCEAO, 2018).

A survey conducted by the Association of Certified Fraud Examiners (ACFE) in 2016 estimated that typical organizations lose about 5% of their revenues each year due to fraud. Some researchers suggest that the increasing trend of fraud among Microfinance Banks (MFBs) can be attributed to their rapid expansion outpacing their capacity. This rapid growth often leads to weakened internal controls as their foundational principles are compromised, increasing the risk of issuing low-quality loans and exposing the organization to fraudulent activities by both employees and clients (Chen et al., 2014). Additionally, some MFBs prioritize growth and market share to such an extent that they become financially unstable due to poor balance sheet management, currency and cash flow mismatches, and excessive leverage. This situation is particularly prevalent among MFBs experiencing rapid growth without having established and ingrained robust risk management principles within their financial risk infrastructure (Kruijff & Hartenstein, 2014). This phenomenon is observed globally.

MFBs primarily focus on a daily barrage of small frauds involving the loan origination and distribution processes. They are blind to the less frequent but high-impact fraud schemes (Singh, 2020). The focus of MFBs has revolved chiefly around four or five most common fraud

schemes that are frequently encountered, such as; loan fraud, asset misappropriation, corruption, credit card fraud, and fraudulent disbursements (Bell, 2015). For this reason, little to no resources are allocated to preventing or addressing the other fraud schemes that pose fraud risks to their organizations. The unaddressed dangers in their blind spot translate into inadequate resources allocated towards anti-fraud efforts means under-detection of fraud among the MFBs (Boateng, *et al.*, 2020).

According to the Association for MFBs of Kenya (AMFB-K) (2021), there were 12 registered deposit-taking MFBs, otherwise known as Microfinance Banks (MFBs) as at 31st December 2021, with 7 of these have a combined total of 492,821 male clients and 1,533,726 female clients, while those who were active were 109,805 males and 298,345 females. A study by Okoth (2023) found that Kenya experienced a 9.5% increment in the occurrence of digital shopping fraud during the months of November and December 2023, while an estimated 10.3% of e-commerce transactions were suspected to be fraudulent.

Despite the huge threat posed by fraud to businesses, many organizations still lack formal systems, protocols and procedures to prevent, detect, and address such occurrences. While no system can be fool proof, there are measures that can be taken to reduce the chances of fraud occurring and make it less enticing to commit (The Chartered Institute of Management Accountants, CIMA, 2008). It may seem like fraud only happens to major organisations, but the truth is that it can happen to any business. While only a fraction of frauds makes the news, companies of all sizes still suffer from the financial loss of large numbers of small frauds. Therefore, it is important to remain vigilant and take all necessary precautions to ensure fraud doesn't affect your business (CIMA, 2008).

1.1.1 Fraud Risk Management Strategies among MFBs

Fraud is a deceitful action or omission meant to give someone an unfair advantage, avoid a duty, or cause a loss to another party for instance; providing false information on a resume or report, creating forged documents, or acting under false pretences (Financial Sector Deepening (FSD) Kenya, 2020). Management of fraud entails assessing fraud risks in an entity and developing an anti-fraud program that detects any fraudulent activity before it occurs. Managing fraud also involves identifying inherent and potential fraud risks and developing a program that works to detect and prevent suspected fraud, both external and internal, to the

business (Deloitte, 2016). The Malaysian Fraud Survey Report (2015) defines fraud risk management as the processes and procedures used to observe an entity's fraud risk. Fraud management strategies are measures used by organizations to prevent, detect, reduce or eliminate fraudulent activities in their operations. KPMG (2015) classifies fraud management strategies as preventative, detective, and response.

The Association of Certified Fraud Examiners (ACFE) (2020) recommends the use of Anti-Fraud Data Analytics tests to prevent, detect and investigate fraud. The strategy entails analysing data to identify red flags of occupational fraud schemes such as corruption, asset misappropriation and financial statement fraud. The ACFE's (2020) Report purports that nations and organizations that use proactive data analytics report fraud losses that are 33% lower than organizations that do not use data analytics as a fraud management strategy.

In response to the proliferation of financial corporate scandals, many organisations have increasingly become aware of the need to formulate appropriate policies and procedures for controlling or addressing the occurrence of fraud. This endeavour is referred to by the KPMG (2014) as fraud risk management. The study goes on to identify three components of fraud risk management, namely: prevention – this is stoppage of the occurrence of fraud or misconduct in the first instance; detection – this comprises the discovery of the likelihood of fraud or misconduct; and response – this refers to the implementation of suitable remedial action upon detection of fraud. According to Hess and Cottrell, Jr. (2016), owing to the damage that an organisation's image suffers as a result of fraud, it is envisioned that appropriate fraud risk management practices will establish a foundation for the restoration of trust and confidence in the organization by stakeholders, particularly customers. The study had contextual gaps since it was focused on SMEs and methodological gaps given the choice of research design.

Boateng *et al.* (2014) found that MFBs in Ghana have employed fraud risk management strategies such as more robust internal auditing, provision of continuous anti-fraud training of MFB personnel, institutionalisation of effective fraud reporting mechanism, establishing a zero-tolerance for fraud culture as well as enabling environment for trust that engenders confidence by employees to act as whistle blowers of fraud, the inculcation of values of integrity and honesty amongst the MFB management, regular implementation of fraud risk assessments, effective application of authorisations, appropriate due diligence during

recruitment of employees in order to forestall the hiring of individuals with fraudulent pasts, and physically securing critical organisational assets. This study had contextual gaps given the focus on Ghana, and the choice of an exploratory research design was a methodological gap. Kimathi (2018) added that fraud risk management strategies can include the establishment of a fraud risk register, frequent monitoring of work performance, integration of access controls for organisational systems, and conduct fraud risk training. The study had a contextual gap owing to its focus on NGOs.

The relationship between different fraud management strategies used by organizations and their effect on performance has been reviewed by other researchers; for instance, Ndurumo (2018) examined the effects of fraud management strategies on the performance of Selected MFBs in Nairobi, Kenya using a sample of 197 MFBs and found that having an anti-fraud strategy in MFBs improved their performance. The study further established that other factors such as internal controls, fraud detection mechanisms, and corporate governance also influenced the performance of MFBs to a great extent. The study had conceptual gaps given that it focused on fraud management strategies rather than fraud risk management. KPMG (2010) attributes the high levels of fraud in MFBs in Kenya to ineffective communication and coordination strategies to detect and prevent fraud. Bierstaker (2009) also agrees that lack of corporate governance or management control influences the performance of MFBs to a great extent.

Kimathi (2018) examined the effect of fraud risk management on financial performance of NGOs in Nairobi County and determined that these organisations had adopted effect fraud risk detection instruments including internal and external audits which were made more effective by the availability of competent staff and the support from top management. The main knowledge gap in this study was that it was contextualised on NGOs rather than on MFBs. Abei (2021) conducted a study on the impact of internal control on fraud detection and prevention in MFBs and posited that internal controls facilitate better fraud detection and prevention by minimising the incentive for committing fraud, and reducing the opportunities for fraud. Additionally, the primary causes of fraud were found to be inadequate remuneration, poor monitoring, and weak internal control systems. Njenga and Osiemo (2013) investigated the effect of fraud risk management on organization performance by focusing on deposit-taking MFBs in Kenya and ascertained that in order to ensure adequate fraud detection, MFBs normally conduct daily monitoring of their operations, updating their databases on client

information, attending seminars on fraud awareness, and training of staff on modern fraud detection techniques.

Ohando (2015) reviewed the relationship between fraud risk management practices and the financial performance of commercial banks in Kenya and found a positive relationship between fraud risk management practices and the financial performance of commercial banks in Kenya. The Pearson correlation further established that preventive and detective fraud risk management practices strongly influenced commercial banks' financial performance as measured by ROA. The study had contextual gaps given the focus on commercial banks rather than MFBs and on financial performance rather than on non-financial performance.

1.1.2 Non-Financial Performance

The performance of organisations is the single most important endeavour since it deals with its survival and growth. A critical component of performance is non-financial performance. Milost (2013) affirmed that the key distinction between financial and non-financial performance is the underlying measures of performance and the focus. Astawa, *et al.* (2017) opined that, as far as MFBs are concerned, non-financial performance relates to the level of innovation, effectiveness of resource utilisation, the success of establishment of an enabling culture of organisational learning, the ambience offered by the facilities and organisational infrastructure. Gichobi (2022) added that MFBs have increasingly adopted conventional non-financial measurement tools where the focus has been trained on the enhancement of internal business processes, growth and learning, and customer focus.

Geremew (2020) studied the integration of financial and non-financial performance metrics in MFBs in Ethiopia. The study found that the three most popular non-financial performance metrics adopted by MFBs in the country were customer orientation, internal business processes and learning and growth. Accordingly, customer orientation has indicators such as the percentage change in the number of clients, percentages of women borrowers, percentage change in voluntary saving, and customer satisfaction The indicators of internal business process were research and development (R&D), duration of loan application processing, number of borrowers per number of loan officers, and clear institutional strategy. Finally, the indicators for learning and growth were the level of employee satisfaction, the frequency of employee training, performance feedback, and the level of innovation. The study’s focus on

MFBs in Ethiopia was a contextual gap while the choice of different independent variables was a conceptual gap.

Mustafa and Saat (2013) examined MFBs performance measurement where they focused on the introduction of a new performance measurement framework. The study established that the most effective performance measures for MFBs are those that incorporated both financial and non-financial metrics as well as being multi-dimensional. Additionally, the non-financial performance metrics included strategic alignment and integration, effectiveness of information infrastructure, impact of MFB products on targeted customers, the clarity of communication, customer satisfaction, stakeholder satisfaction, and efficiency of processes. The study's focus Malaysia was a contextual gap while its use of literature review was a methodological gap.

Kipesha (2013) investigated the performance of MFBs in Tanzania by focusing on the integration of financial and non-financial metrics. The study found that apart from financial performance the MFBs were focused on the social performance, customer experience, learning and growth, and internal business process. The social performance dimension included indicators such as clear social objective, percentage of women borrowers, and social reporting. The customer experience dimension included indicators such as customer satisfaction, retention rate, loan application duration, and product and service variety. The learning and growth dimension included indicators such as employee satisfaction, employees' training, competitive compensation, and performance feedback. Finally, the internal business process dimension included indicators such as operational management, innovation, customer management, and report to mix. The focus on Tanzania was a contextual gap while the difference choice of independent variables presented a conceptual gap.

Muthya *et al.* (2021) conducted a study on undoing performance of MFBs where they focused on the regulatory framework in Kenya. They established that one of the most important non-financial performance measurement adopted by MFBs in the country is strategic innovation orientation which was found to be a significant determinant of the overall performance of the organisations since it enabled the enhancement of the product and service offering as well as underlying indicators such as customer satisfaction, the level of innovation, and customer retention rate. The study focused on different non-financial performance measurement criteria than the ones addressed by the present study which was a conceptual gap.

1.1.3 Micro Finance Institutions in Kenya

In Kenya, microfinance is a relatively young sector since it was launched in the mid-1990s. There are thirteen (13) licensed Micro Finance Institutions in Kenya, as shown in Appendix I. The Kenyan microfinance sector is considered one of Sub-Saharan Africa's most dynamic microfinance sectors. This is attributed to its ability to provide financial and non-financial support to nearly 8.5 million Micro, Small, and Medium-sized Enterprises (MSMEs) throughout the country (Wangui & Nzuki, 2021).

Microfinance banks (MFBs) in Kenya offer a comprehensive range of financial services, including deposits and savings, loans, transactions and payment services, and bancassurance. Regulation of MFBs in Kenya began in 2006. Prior to this, the lack of regulations allowed MFBs to operate with significant flexibility. These institutions were established swiftly and without constraints such as minimum capital requirements, which allowed the microfinance industry to flourish in that environment (Nyaga, 2008). The Microfinance Act, enacted in 2008, was introduced to regulate the establishment and operations of MFBs in Kenya through a system of licensing and supervision. MFBs in Kenya are generally categorized into three types: formal, semi-formal, and informal institutions, with their formality determined by the degree of regulatory oversight. This regulatory framework has enabled MFBs to provide both financial and non-financial support to nearly 8.5 million Micro, Small, and Medium-sized Enterprises (MSMEs) across the country (Wangui, 2021).

However, the level of Non-Performing Loans (NPLs) among deposit-taking MFBs has increased (Rono, 2020). This rise in NPLs negatively affects the performance of MFBs. Fraud risk has become a significant concern for MFBs due to the potential loss of earnings resulting from deceptive practices by clients or employees, including direct theft of funds, financial statement fraud, bribes, and fake loans (Mosoti et al., 2023). Therefore, developing fraud risk management strategies is crucial for improving the performance of MFBs, which is the central theme of this thesis.

1.2 Statement of the Problem

MFBs have, over the last decade, seen a sharp upsurge in the number and value of frauds, much to their distress and poor performance (Kihara, 2016). The increase in fraud among MFBs is

attributed to different factors, including staff complicity and collusion with third parties and technological advancement, which poses risks by making the systems vulnerable (Ndurumo, 2018). The Aviva Fraud Report (2020) noted that although various strategies and measures have been taken to reduce the incidence of fraud, the incidences and their effects are still on the rise since fraudsters have continued to devise new ways of indulging in the act. Kalui *et al.* (2017) affirmed that a number of MFBs have experienced challenges in tailoring their service offerings to the specific needs of their clients which has contributed towards rendering innovations such as e-readiness as meaningless. Odoom *et al.* (2019) added that MFBs are hampered by deficient book-keeping practices, weak internal controls, and lack of adherence to established protocols and inadequate supervision of staff which have all led to limitations in their non-financial performance.

In Kenya, fraud has become one of the most intractable and monumental problems in recent times. Financial institutions such as banks and MFBs, among others, have become the main target of conmen for survival. The period 2016-2020 saw the number of fraud cases among MFBs spike (SACCO Societies Regulatory Authority, 2020). The 2020 PwC Kenya, Global Economic Crime and Fraud Survey report, posits that up to recent, the types of fraud experienced by MFBs include; Procurement Fraud at 15%, Fraudulent Statement fraud at 14%, and Bribery & Corruption also at 14% (PwC Kenya, 2020). The report further considered the internal controls of these institutions as too weak to detect and prevent fraud.

Studies have been done on fraud, but most have focused on institutions other than MFBs such as Williams and Adeyanju (2020); Gitau and Njenga (2016); Olongo (2013); Hussaini *et al.* (2018); Kimathi (2018); Kiprono and Ng'ang'a (2018) these were all contextual gaps. While a considerable number of studies have been undertaken on fraud, few studies have focused on the effect of fraud risk management strategies such as Ndurumo (2018); KPMG (2010); Bierstaker (2009); Wanyama (2012); Mosoti *et al*. (2022); which were all conceptual gapsFraud risk since the concept of fraud is a more general one when compared to fraud risk management. Further, there were studies that were focused on financial performance rather than non-financial performance such as Ngumo *et al.* (2020); Ngari (2017); Gatuhu (2013); Lelgo and Obwogi (2018); and Omwanza and Jagongo (2019). These were all conceptual gaps given the different attributes of financial performance when compared to non-financial performance. Against this backdrop, this research aims to fill the existing knowledge gap by

answering the question; what is the effect of fraud management strategies on the performance of MFBs in Kenya?

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study was to evaluate the effect of fraud risk management strategies on the non-financial performance of micro-financial institutions (MFBs) in Kenya

1.3.2 Specific Objectives

i. To establish the effect of fraud risk deterrence on the non-financial performance of MFBs in Kenya.
ii. To investigate the effect of fraud risk prevention on the non-financial performance of MFBs in Kenya.
iii. To ascertain the effect of fraud risk detection on the non-financial performance of MFBs in Kenya.
iv. To evaluate the effect of fraud risk mitigation on the non-financial performance of MFBs in Kenya.

1.4 Research Questions

This study seeks to answer the following research question:

i. What is the effect of fraud risk deterrence on the non-financial performance of MFBs in Kenya?
ii. How does fraud risk prevention affect the non-financial performance of MFBs in Kenya?
iii. To what extent does fraud risk detection affect the non-financial performance of MFBs in Kenya?
iv. What is the effect of fraud risk mitigation on the non-financial performance of MFBs in Kenya?

1.6 Scope of the Study

This study investigated the effect of fraud risk management strategies on the non-financial performance of micro-financial institutions (MFBs) in Kenya. This study examined the extent to which fraud-risk deterrence, fraud risk prevention, fraud risk detection, and fraud risk mitigation strategies affect the non-financial performance of MFBs in Kenya. There are over 360 MFBs that are licensed and authorized to operate in Kenya, according to SASRA (2022). However, this study focused on the 13 deposit-taking MFBs whose main offices are in Nairobi (The CBK, Directory of Licensed Microfinance banks, 2021) as listed in Appendix I which are the unit of analysis. The targeted respondents for the study included the permanent employees in senior and middle management levels obtained from the Human Resource Department in each MFB who are 316 in total which was the unit of observation of the study. The choice of deposit taking MFBs was based on the fact that their risk exposure to fraud is higher than that of non-deposit taking MFBs. The period of study was five months between November 2023 and March 2024.This study also employed a descriptive research design.

1.5 Significance of the Study

The study will be valuable to various individuals and entities, including government agencies such as the SASRA, MFBs, and other financial institutions, as well as scholars and researchers who need to gain a comprehensive understanding of the topic.

1.5.1 Policymakers

Policymakers, including the government and its agencies that oversee MFB operations and consider the contribution of MFBs toward the broader Vision 2030 goal, will also find this study critical. The findings will inform them about the impact of existing fraud risk management strategies on the performance of MFBs, thereby assisting them in implementing policies to reduce fraud cases among financial institutions.

1.5.2 Industry Practitioners in MFBs

MFBs and other industry practitioners will gain valuable insights into fraud management strategies and their impact on the performance of financial institutions. The findings of this

study will help MFBs identify the most effective fraud risk management strategies to prevent, reduce, or eliminate fraud within their institutions.

1.5.3. Scholars and Researchers

Other scholars and researchers will find the results of this study significant. The findings will contribute to the literature on the relationship between fraud management strategies and firm performance. Additionally, this study will serve as a foundation for future research on the impact of fraud risk management strategies, aiming to address existing gaps in the literature caused by variations in methodology, research variables, or conditions, the passage of time, differing contexts, and the lack of universally applicable fraud management strategies that influence performance across all contexts.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents other literature regarding the effect of fraud management strategies on the performance of MFBs. The study's theoretical framework is reviewed, followed by an empirical review where the past studies are evaluated according to the study objectives, then the operationalization of variables, research gap, and the conceptual framework, which gives a rough idea of the relationship between the study variable and then the chapter summary.

2.2 Theoretical Framework

The theoretical literature review is based on theories that explain the relationship between risk management strategies and organizational performance. Sudhana *et al.* (2019) posited that a multi-theoretical framework enables a more thorough, and complete appreciation of the essential constructs in a study by explaining wider associations amongst the constructs and linking them to appropriate theories which would not be possible through the use of a single theory. The theories considered by this study to be relevant in trying to establish the existing relationship between fraud management strategies and organizational performance include; the

Fraud Triangle Theory by Cressey (1973), and the Institutional Theory by Meyer and Rowan (1977). However, this study will heavily rely on the Fraud Triangle Theory since this theory outlines exhaustively the role that organizational structures play in improving the performance of organizations.

2.2.1 The Fraud Triangle Theory

The Fraud Triangle Theory was developed by Cressey (1953). The theory argues that for fraud to occur, there must be a reason that can mostly be an opportunity, pressure, or rationalization that must be present for an offense to occur. Cressey (1953) ascertained that the fraud perpetrator must formulate some morally acceptable idea before unethical behaviour. Cressey also argues that if fraud perpetrators are given the opportunity, they are most likely to commit fraud, which will negatively influence the organization's performance.

The work of Cressey (1953) is also supported by Lister (2007), who admits that management pressure is also a significant factor in committing fraud and that if strategies are put in place to reduce the virility of such pressure, fraud activities will decrease which will enhance the performance of an organization. The theory has received criticisms for focusing only on individual acts while paying no attention to group acts (Trompeter *et al.*, 2013), not considering the possibility of collusion and cultural distinctions (Cieslewicz, 2012), not being thorough enough in its coverage of fraud (Lokanan, 2015, Dorminey *et al.*, 2012), and being a biased and fundamentally incomplete translation of criminology to the examination of fraud (Morales *et al.*, 2014). Donegan and Ganon (2008) criticized the Fraud Triangle Theory because the theory lacks solid empirical support and ignores other factors contributing to fraud, such as the one-dimensional analysis of the perpetrator's psychology on fraud.

The theory is relevant to this study because fraud perpetrators are most likely to commit fraud if they are given the opportunity through loopholes in an organisation as established by Mat *et al.* (2019) and Anindya and Adhariani (2019). Organizations should put policies in place to reduce the chances of committing fraud by addressing the causes of the fraud within those policies which will most likely improve the performance of organizations (Dzomira, 2015; Odumusor *et al.*, 2023). The theory supports the second objective in that it proposes that without solid governance structures that deter fraud, many organizations will encounter losses

that will most likely affect their performance (Mousavi *et al.*, 2022). Thus, it is clear that the theory was selected due to the focus on fraud occurrence which is central to this study.

2.2.2 Institutional Theory

The Institutional Theory, which was proposed by Meyer and Rowan (1977), posited that social behaviour of individuals is authoritatively guided by processes through which structures such as routines, norms, rules and schemes. From an organisational perspective, institutional theory facilitates an understanding of organisations and management practices as stemming from social instead of economic pressures. Greve and Argote (2015) supposed that the institutional theory examines the formation of organisations and posits that institutional features such as those pertaining to the social group to which entrepreneurs belong help to enable the establishment of organisations.

Tolbert and Zucker (1999) explained that organisations are compelled to integrate the practices and procedures that are derived from existing rationalised ideas of how organisations work and have been institutionalised by society. Thus, through this, the organisations are able to affirm their legitimacy and chances of survival irrespective of the effectiveness of the aforementioned practices and procedures. Accordingly, this theory led to the increased focus on the acceptance of particular structural arrangements that had become conventional social norms such as formal employment policies, accounting and budgeting practices. Amenta and Ramsey (2010) affirmed that the theory investigates the manner in which society concepts are created, distributed, accepted, and adapted over time and space; as well as the manner in which they decline and are discarded.

Critics of the institutional theory have made a number of arguments including: it is too static to explain many of the dynamic circumstances that people face on a daily basis (Peters, 2000), and it failed to include all types of organisations in its analysis thereby rendering its findings inconclusive (Greenwood *et al.*, 2008).

The institutional theory is connected with the dependent variable (non-financial performance) since it helps to explain how MFBs, which are social organisations, are formed and the structural arrangements that comprise their operations (Magali, 2023). Additionally, the theory is associated with all the independent variables since fraud risk management strategies are

derived from the organisational structures which are essential components of institutions (Wangu, 2021). This demonstrates the relevance of the selection of this theory to support the study.

2.3 Empirical Review

The relationship between fraud management strategies and the performance of organizations has been reviewed by various scholars, both locally and internationally. This section reviews past literature on fraud management strategies, including; fraud deterrence, fraud prevention, fraud detection, fraud mitigation, fraud analysis, fraud policy, fraud investigation and fraud prosecution, and their effect on the performance of MFBs.

2.3.1 Fraud Risk Deterrence Strategies and Non-Financial Performance

Various researchers have assessed the influence of fraud risk deterrence on non-financial performance. For instance, Meiryani et al. (2021) investigated the impact of fraud detection and prevention on the financial performance of a trading company in Tangerang. The study was motivated by the prevalence of fraud resulting from simplistic accounting practices and inadequate internal controls, which adversely affect financial performance. By analyzing data from 33 respondents through questionnaires, the study concluded that fraud detection and prevention significantly influence financial performance. The researchers asserted that a company's financial performance is affected by undetected fraud, aligning with the findings of Kimathi (2018). However, this contradicted Alatawi *et al.* (2023) who found that apart from financial performance, fraud also affects non-financial performance through metrics such as corporate social responsibility where potential recipients of support from corporates would rather be associated with firms which has established a good name through high levels of integrity. This study had contextual gaps given the focus on a single organisation and the lack of focus on MFBs, and conceptual gaps given the focus on financial performance rather than non-financial performance. These gaps indicate weaknesses of the study while its main strength was the depth of empirical research.

Mwangi and Ndegwa (2020) investigated the influence of fraud risk management on fraud occurrence in Kenyan listed companies. The study was underpinned by the Fraud Management Lifecycle Theory and Fraud Triangle Theory. The study adopted a causal research design and

data was collected from a sample of 275 senior managers and the research instrument was structured questionnaires. According to the findings, preventive and control strategies that had been adopted by these companies were successful in reducing the occurrence of fraud which was aligned with the findings of Wong'ombe *et al.* (2019). However, detective control strategies were not influential on the occurrence of fraud in the companies that were investigated which contrasted with Abei (2021). Thus, the study recommended that more efforts be expended in institutionalising corrective and preventive control strategies of fraud risk management. The study had methodological gaps given the choice of research design, it also had contextual gaps given the expanded scope of all listed companies. These gaps are a reflection of the weaknesses of the study while its strengths include the extensive of the research conducted.

Jannopat and Phornlaphatrachakorn (2021) explored the impact of fraud investigation and detection on the performance of listed companies in Thailand, considering internal audit quality, accounting information transparency, and corporate governance as mediating factors. Utilizing a sample of 333 Thai listed companies, the study found that fraud investigation and detection significantly enhance internal audit quality, accounting information transparency, and financial effectiveness. The researchers concluded that the function of fraud investigation and detection is a critical and valuable aspect of internal audit practices, consistent with the findings of Coram et al. (2006). They recommended that organizations establish and implement a systematic fraud investigation procedure to improve outcomes in the short, medium, and long term. However, this contrasted with Omidiji *et al.* (2024) who found that MFBs that are not operationally efficient are less inclined to invest in an internal auditing function owing to agency concerns that are based on misaligned priorities between managers and owners. The study had contextual gaps given the focus on all listed companies in Thailand, and conceptual gaps given the focus on general performance rather than non-financial performance. These gaps indicate the weaknesses of the study while its strength was big sample of companies included in the study.

Amuna and Mouamer (2020) examined the impact of applying fraud detection and prevention instruments in reducing occupational fraud in the Ministry of Health (MOH) in the Gaza Strip. The researchers adopted a descriptive research design and a questionnaire to collect data. The study targeted a population of (501) respondents consisting of supervisory employees working

at MOH in Gaza Strip, Palestine. Using the stratified random sample method and the multiple regression method to measure the effect, they found a positive relationship between using tools to detect and prevent job fraud and fraud reduction at the MOH which was aligned with the findings of Kummer *et al.* (2015). However, Sama and Niba (2016) determined that the lack of resources has handicapped many MFBs and prevented them from institutionalising appropriate fraud reduction techniques. The study is based on a single organization making the findings specific and thus not widely applicable to other contexts which was a contextual gap while the focus on a single form of fraud was a conceptual gap. These are weaknesses of the study; however it was strengthened by the large size of the population which enabled richer data.

Ndurumo (2018) examined the effect of fraud management strategies on the performance of selected MFBs in Nairobi, Kenya. The study was supported by the Fraud Diamond Theory, Fraud Triangle Theory, Agency Theory and Occupational Fraud Theory. The researcher targeted a population of 406 management employees of the MFBs. The study employed a descriptive research design. The study found that fraud detection influences the performance of selected MFBs in Kenya to a great extent using Pearson correlation coefficient and multiple regression analysis. The researcher then concluded that fraud detection affects the performance of selected MFBs in Kenya. Ndurumo's (2018) work reviewed the relationship between fraud detection and firm performance better than the work of Jannopat and Phornlaphatrachakorn (2021), and Amuna and Mouamer (2020) because the study was based on the same context as this study. This study had conceptual gaps given the focus on general performance rather than on non-financial performance. These represent weaknesses of this study while its strength is the relatively large sample size which enabled richer data and more representative conclusions.

2.3.2 Fraud Risk Prevention Strategies and Non-Financial Performance

The effect of fraud risk prevention and firm performance has been reviewed by several studies for instance, the study conducted by Meiryani *et al.* (2021) explored the influence of fraud detection and prevention on the financial performance of trading companies situated in Tangerang. A quantitative method was employed, involving the distribution of questionnaires to 33 samples. The data obtained was analysed numerically and descriptively, with the results showing a significant effect of fraud detection and fraud prevention on financial performance.

More specifically, it was established that the companies had invested in the training of employees in fraud risk management, and undertaken awareness sessions on fraud risk management strategies which had improved fraud detection and prevention which was consistent with the findings of Odumusor *et al.* (2023). However, Bell (2017) found that MFBs in certain jurisdictions encounter debilitating challenges including complicated legal issues, poor infrastructure, deficiencies in training, and misaligned organisational structures which limit the effectiveness of fraud detection. This study had contextual gaps given the focus on a single organisation and the lack of focus on MFBs, and conceptual gaps given the focus on financial performance rather than non-financial performance. These were the weaknesses of the study while its strength was choice of research variables which were closely aligned with the present study.

In a study conducted by Agwor (2017), the relationships between fraud prevention and business performance in Nigeria's quoted manufacturing companies were explored. The researcher obtained both primary and secondary data from thirty-two (32) quoted manufacturing companies. It was revealed that fraud prevention had a greater and more significant effect on business profitability than it did on business efficiency and effectiveness, the latter two having a weaker impact which contrasted with Chelangat (2014) who found the reverse to be true. The study's conclusion was that the more stringent fraud prevention measures are, the more likely businesses are to experience greater growth in terms of profitability. The study had contextual gaps given the focus on quoted manufacturing companies, as well as conceptual gaps given the focus on general performance rather than non-financial performance. These were weaknesses of the study while its main strength was extensive nature of the research.

Kimathi (2018) carried out a study on the effect of fraud risk management on financial performance of non-governmental organisations in Nairobi County. The study applied a descriptive research design and used questionnaires to collect primary data from 170 finance managers. Quantitative statistical (both descriptive and inferential) data analysis was conducted with the use of SPSS. The study found that thanks to well-established and frequent risk monitoring, the organisations were able to prevent major occurrence of fraud risk events. Additionally, the organisations were found to have included fraud detection and prevention in their anti-fraud policies which echoed the findings of Bartsiotas and Achamkulangare (2016). However, this contradicted Mukiti (2013) who found that many MFBs were resource

constrained and so were unable to carry out regular fraud risk monitoring. The study had contextual gaps given its focus on NGOs rather than MFBs which was the main weakness of the study while its strength was the depth of research analysis.

Apreku-Djan *et al.* (2022) conducted a study on the effect of fraud risk management skills on value-based financial performance of banks in Ghana. The study applied a cross-sectional and quantitative research design. Secondary data was collected from listed banks in the Ghana Stock Exchange (GSE) for the period between 2008 and 2020. Additionally, primary data was collected from 95 respondents who were selected purposively. The study found that many organisations had established and executed a fraud risk management plan which was an indicator of the strong commitment by the senior management and board members to high and ethical standards pertaining to risk prevention management which was aligned with Kimathi (2018). In contrast, Njuguna *et al.* (2017) established that smaller less-resourced MFBs were unable to conduct comprehensive fraud risk prevention owing to the lack of a proper fraud risk management plan. The study had contextual gaps given the focus on banks rather than MFBs and methodological gaps given the choice of research design. The study's main weaknesses were the small sample size while its strength was the choice of research design.

A study was conducted by Karuiki (2017) on fraud risk management and financial sustainability of NGOs in Kenya. The study adopted an explanatory research design. A combination of quantitative and qualitative data was collected and analysed using content, descriptive and correlation analyses, respectively. The research findings indicated that smaller organisations tended to face challenges in the integration of appropriate fraud risk prevention mechanisms including lack of managerial support and resource constraints which was consistent with the findings of Hess and Cottrell (2015). However, Okaro and Okafor (2013) affirmed that whilst smaller MFBs faced many challenges in the institutionalisation of fraud risk management, their smaller size made it easier for the top management to identify and address suspicious fraudulent activities. The study recommended that suitable anti-fraud policies be formulated relating to whistle-blowing, monitoring and financial reporting, and management need to provide their support for the implementation of these policies. This study had contextual gaps given the focus on NGOs rather than MFBs, and conceptual gaps given the focus on sustainability rather than performance. These were weaknesses of the study while its strengths included the inclusion of both qualitative and quantitative data.

2.3.3 Fraud Risk Detection Strategies and Non-Financial Performance

Chelangat (2014) conducted a study on the effect of fraud on financial performance of deposit taking savings and credit co-operative societies (SACCOs) in Kenya. A descriptive research design was chosen for the study. The target population was deposit taking SACCOs that were operational in Kenya between 2009 and 2013. The study found that the actions of management were a great determinant of the effectiveness of fraud risk management amongst deposit taking SACCOs. Additionally, the fraud risk detection mechanisms that had been instituted had enabled faster and more frequent identification of potential fraud risk as established by Hussaini *et al.* (2018). However, the SACCOs experienced difficulties collaborating with the police in controlling the occurrence of fraud. In contrast, Ndurumo and Kihara (2016) found that technical and financial challenges were at the heart of the inability of many MFBs to effectively implement fraud risk detection practices. This study had contextual gaps given the focus on SACCOs rather than MFBs which was the main weakness of the study while the depth of research was a strength.

Githecha (2013) investigated the effect of fraud risk management strategies on the financial performance of commercial banks in Kenya. The study employed a descriptive research design and targeted all commercial banks in Kenya. Out of the 43 commercial banks reported by the Central Bank of Kenya (CBK) in 2013, 39 banks responded to the survey, resulting in an 88.6% response rate. The study utilized both primary and secondary data sources, and the data collected was coded and analyzed using Microsoft Excel and SPSS, with inferential statistics for deeper analysis. The findings revealed a positive and statistically significant relationship between fraud detection and firm performance. This correlation was particularly noticeable due to the enhanced fraud detection skills of inspectors, who, having undergone additional training, were able to identify fraud risks early and take appropriate action, aligning with the findings of Akelola (2012). However, Kabue (2015) noted that specialized training in fraud risk detection was feasible only for larger, more financially robust MFBs. A contextual limitation of Githecha's study is its focus on commercial banks, while a strength is the inclusion of 39 licensed commercial banks in the sample.

Matsoro (2020) studied the effect of fraud risk management system on the financial performance of mobile financial services in Uganda. A multi research design was adopted and

data was collected from 35 mobile money system operators. The findings of the study revealed that there was a high incidence of fraud amongst the mobile money system operators owing to a lack of understanding of fraud risk assessment which made them vulnerable to attack by fraudsters which was similar to the findings of Yesuf *et al.* (2017). Additionally, many of these operators lacked the resources to invest in internal controls that could improve the fraud risk detection capabilities. However, this was inconsistent with Shaikh *et al.* (2022) who determined that advances in digital security protocols had enabled improved fraud risk detection and prevention amongst mobile financial service providers. The study had contextual gaps given the focus on mobile financial services rather than MFBs, while the choice of research design was a methodological gap. The specific focus on mobile financial services is a weakness while the inclusion of all the mobile money system operators is a strength.

Linus and Wamugo (2022) examined the relationship between financial accountability and sustainability of MFBs in West Pokot County, Kenya. An explanatory research design was used by the study. Since data was collected from only 6 MFBs operational in West Pokot, a census was used. Primary data was collected using semi-structured questionnaires and descriptive and inferential statistical analysis performed using SPSS. The study found that the MFBs had majorly instituted financial accountability through the adoption of audit efficiency and fraud detection where emphasis was made on the regular conduct of fraud risk assessments which was similar to the findings of Mosoti *et al.* (2023) but contradicted Abyei (2021) who established despite encouraging signs, MFBs still faced many challenges in implementing appropriate risk detection strategies. The study recommended that the government collaborate with players in the industry to enhance the regulatory framework for financial accountability of MFBs so as to ensure adequate compliance with the same. The study had conceptual gaps given the focus on sustainability rather than performance, and methodological gaps given the choice of research design. The inclusion of only 6 MFBs is a weakness of the study while extensiveness of the research was a strength.

2.3.4 Fraud Risk Mitigation Strategies and Non-Financial Performance

Different scholars have determined the association between fraud risk mitigation and firm performance, such as; the COSO framework (2013) under principle 8 outlines four recommendations to mitigate fraud namely: considers various types of fraud, assesses

pressures, opportunities, and rationalizations. Sadique et al. (2019) examined the relationship between corporate governance attributes in fraud deterrence in Malaysia. The researchers focused on companies charged with auditing and accounting offenses from 2003 to 2007. The study data was collected from the years these companies were accused of fraud and the year before that. Using Logistic regression analysis, the findings revealed that fraud mitigation influences fraud deterrence which in turn influences organizational performance. More specifically, the fraud risk mitigation measures that were employed included the vetting of new employees prior to hiring them so as to establish their performance history and avoid hiring potential fraudsters which was consistent with the findings of Dzomira (2015). However, Boateng (2014) found that one aspect of fraud risk mitigation that MFBs had been unable to address was the proliferation of new fraud schemes due to their inability to keep updating their knowledge on fraud risk management. The study had conceptual gaps given the focus on corporate governance attributes rather than financial performance and contextual gaps given the lack of institutional context. The relatively short period of study is a weakness since the findings are not representative of all possible periods while the rigour of research is a strength.

Birol (2019) investigated the link between corporate governance and fraud detection in Borsa Istanbul from 2010 to 2014. The study aimed to integrate financial and non-financial variables related to corporate governance practices and develop a fraud detection model by assessing the impact of corporate governance on fraud risk. The research focused on 134 companies listed on the Istanbul Stock Exchange. The findings indicated that the new corporate governance regulations and their implementation in Turkey have not yet had the anticipated effect on reducing fraud risk. Additionally, the study found that companies' profitability and debt levels are influenced by the degree of fraud mitigation within the organization. Unlike previous research in this field, such as Abi et al. (2018), Birol's study included the concept of employee behavior and its effect on preventing fraud, particularly concerning maintaining confidentiality and ensuring data protection, which are strengths of the study. However, the study had conceptual gaps due to its emphasis on corporate governance attributes over financial performance and contextual gaps due to the absence of an institutional context, which are noted as weaknesses. Boateng *et al.* (2014) conducted a literature review of fraud risk management in MFBs in Ghana. The study found that the organisations have employed fraud risk management strategies such as more robust internal auditing, provision of continuous anti-

fraud training of MFB personnel, institutionalisation of effective fraud reporting mechanism, establishing a zero-tolerance for fraud culture as well as enabling environment for trust that engenders confidence by employees to act as whistle blowers of fraud as found by Fahra and Gunasekare (2024), the inculcation of values of integrity and honesty amongst the MFB management, regular implementation of fraud risk assessments, effective application of authorisations, appropriate due diligence during recruitment of employees in order to forestall the hiring of individuals with fraudulent pasts, and physically securing critical organisational assets. The study had conceptual gaps given the lack of focus on non-financial performance, while the focus on MFBs in Ghana represented a contextual gap. The extensiveness of the research findings is a strength while the stated gaps are weaknesses of the study.

2.4 Research Gaps

The chapter reviewed past literature on the effect of fraud management strategies on the performance of MFBs. The theories reviewed by the study have a different view of the topic. The Fraud Triangle Theory insisted on there being opportunities to commit fraud as a reason for fraud and that this influences the performance of firms. On the other hand, the Fraud Diamond Theory focuses on there being a capacity to commit fraud as the reason why fraud is achieved and that it affects the performance of firms. The theories have a differing focus on the same concept, which brings a knowledge gap that this study seeks to fill by establishing a unifying view of the concept. The existing literature is also limited because local literature on fraud management strategies and MFB performance is scarce.

2.5 Conceptual Framework

This study's conceptual framework comprises the independent and dependent variables. The study's dependent variable is the non-financial performance of MFBs. The independent variables include fraud risk management strategies which include; fraud risk deterrence, fraud risk prevention, fraud risk detection, and fraud risk mitigation strategies. The framework also captures the indicators for each variable which help to operationalise the variables. Accordingly, fraud risk deterrence strategies include leadership initiatives of fraud management, eliminating causes of fraud, monitoring of work performance, and use of the auditors. Fraud risk prevention strategies include effective fraud reporting, fraud awareness,

education and training, commitment to fraud risk management, and institutionalisation of internal control systems. Fraud risk detection strategies include regular identification of fraud risks, understanding of risk assessment, repeat of risk assessment, and financial statement anomalies. Fraud risk mitigation strategies include measures to eliminate fraud, thorough vetting of new hires, confidentiality and data protection, and commitment to fraud policy. Finally, Non-financial performance of MFBs include internal operating processes, employee oriented measures, customer orientation, and customer experience. This is as shown in figure 2.1 below.

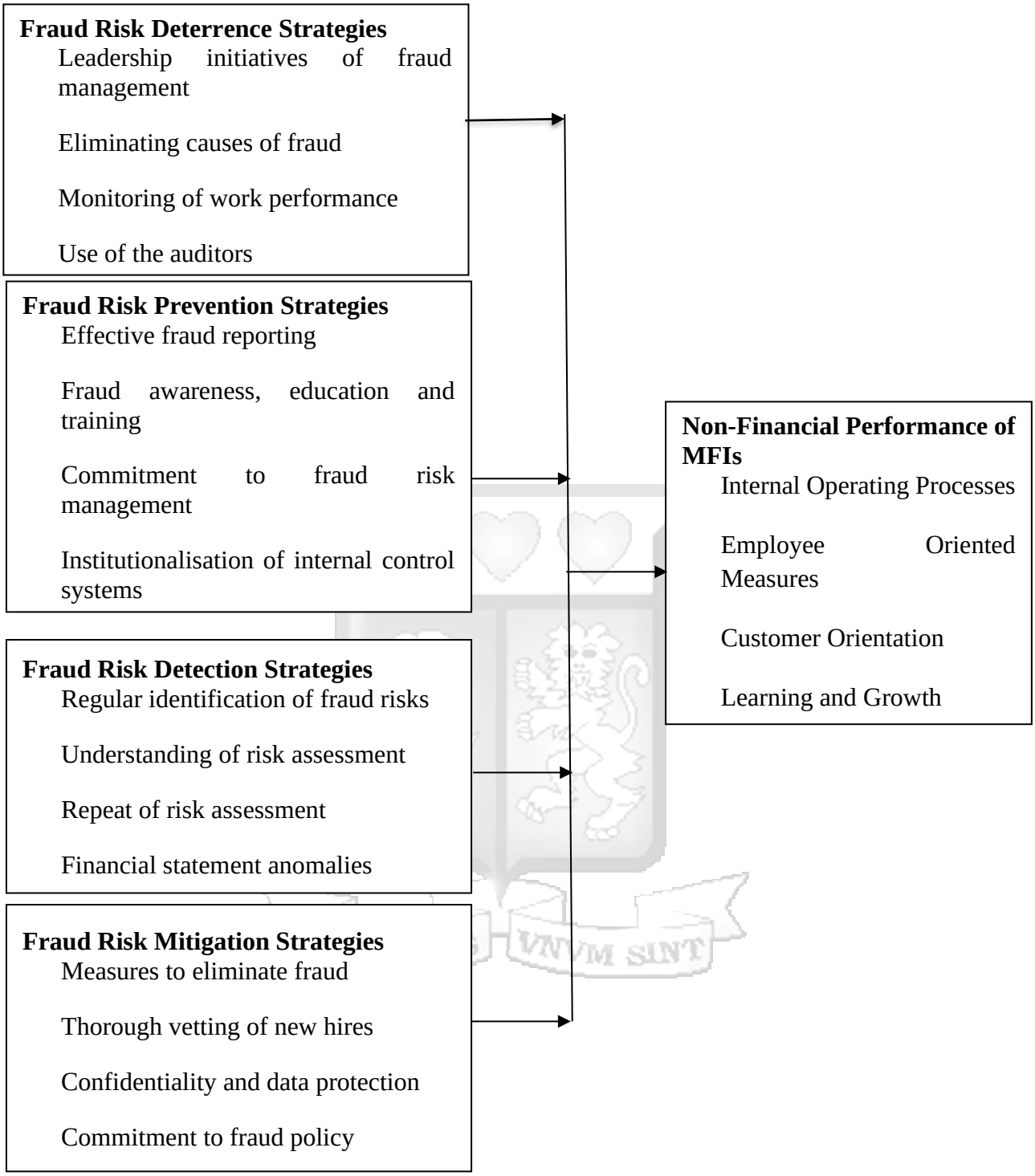

Figure 2. 1: Conceptual Framework

Independent Variables **Dependent Variable**

2.6. Operationalization of Variables

The independent variable in this study is fraud management strategies, which are operationalized as fraud deterrence, fraud prevention, fraud detection, fraud mitigation, fraud analysis, fraud policy, fraud investigation, and fraud prosecution. The dependent variable is the Non-Financial Performance of Microfinance Banks (MFBs), operationalized through measures such as operational efficiency, customer relationships, and service quality. Table 2.2 outlines the specific measures for both the study's dependent and independent variables.

Table 2. 1: Operationalization of Variables

Variables	Conceptual Definitions	Measures	Likert Scale	Author	Supporting Theories
Fraud Risk Deterrence	It is the assessment of the conditions and procedures that influence the stoppage of fraud.	· Effective fraud reporting · Fraud awareness, education and training · Commitment to fraud risk management · Leadership supports fight against fraud	5-point Likert scale	Meiryani *et al.* (2021) Mwangi and Ndegwa (2020) Jannopat and Phornlaphatrachakorn (2021) Amuna and Mouamer (2020) Ndurumo (2018)	Fraud Management Lifecycle Theory, Fraud Triangle Theory, Fraud Diamond Theory, Occupational Fraud Theory, Agency Theory
Fraud Risk Prevention	Encompasses the activities that are undertaken when fraud risk deterrence fails i.e. hindering the risk of a fraudster committing a fraudulent activity.	· Leadership initiates fraud management · Eliminating causes of fraud · Ethical behaviour · Use of the auditors	5-point Likert scale	Meiryani et al. (2021) Agwor (2017) Kimathi (2018) Apreku-Djan et al. (2022) Karuiki (2017)	Fraud Management Lifecycle Theory, Fraud Triangle Theory, Fraud Diamond Theory, Occupational Fraud Theory, Agency Theory
Fraud Risk Detection	The process involved in the discovery of the likelihood of fraud through the identification of vulnerabilities.	· Regular identification of fraud risks · Understanding of risk assessment · Repeat of risk assessment	5-point Likert scale	Chelangat (2014) Githecha (2013) Matsoro (2020)	Fraud Management Lifecycle Theory, Fraud Triangle

		· Thorough vetting of new hires		Linus and Wamugo (2022)	Theory, Fraud Diamond Theory, Occupational Fraud Theory, Agency Theory
Fraud Risk Mitigation	Interventions undertaken by an organisation in addressing the occurrence of a fraudulent activity.	· Confidentiality and data protection · Use of whistle blowers	5-point Likert scale	Sadique *et al*. (2019) Birol (2019) Boateng *et al.* (2014)	Fraud Management Lifecycle Theory, Fraud Triangle Theory, Fraud Diamond Theory, Occupational Fraud Theory, Agency Theory
Non-Financial Performance of MFBs	relates to the level of innovation, effectiveness of resource utilisation, the success of establishment of an enabling culture of organisational learning, the ambience offered by the facilities and organisational infrastructure	· Internal Operating Measures · Employee Oriented Measures · Customer Oriented Measures	5-point Likert scale	Geremew (2020) Mustafa and Saat (2013) Kipesha (2013) Muthya *et al*. (2021)	Institutional Theory, Dynamic Capabilities Theory, Resource Based Theory

2.7 Chapter Summary

This chapter reviewed existing literature on the impact of fraud management strategies on the performance of microfinance banks (MFBs). It explored the relationship between fraud management strategies and organizational performance at global, regional, and local levels. The study concentrated on eight specific fraud management strategies: fraud deterrence, fraud prevention, fraud detection, fraud mitigation, fraud analysis, fraud policy, fraud investigation, and fraud prosecution. Many of the empirical studies reviewed focused on different fraud management strategies than those emphasized in this study. Additionally, three theories were reviewed to understand the general relationship between the study variables, followed by an

empirical review aligned with the study objectives. At the chapter's conclusion, these variables are operationalized for measurement in the data collection instrument.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

Chapter three delves into the research methodology, reviewing the methods employed for data collection, processing, and analysis. This chapter is structured into several sections: research philosophy, research design, target population, sampling technique, data collection, research quality, data analysis, and ethical considerations.

3.2 Research Philosophy

According to Žukauskas et al. (2018), research philosophy forms the foundation of research, encompassing the accepted research strategy, problem formulation, data collection, processing, and analysis. Research philosophies distinguish between doxology (what is believed to be true) and epistemology (what is known to be true). The goal of research is to convert beliefs (doxa) into knowledge (episteme). Galliers (1991) identifies two primary research philosophies: positivist (or scientific) and interpretivist (or anti-positivist). Positivist philosophers assert that reality is stable and can be objectively observed and described without influencing the phenomena under study (Levin, 1988). In contrast, interpretivist philosophers argue that reality can only be fully understood through subjective interpretation and intervention. Positivist philosophy relies on quantitative data, which positivists consider more reliable and scientific than qualitative research, thus more trustworthy (Saunders, Lewis, & Thornhill, 2012).

Given this context, the positivist research philosophy was deemed suitable for this qualitative study, as it aims to articulate a knowledge perspective based on the nature of reality, representing both epistemological and ontological positions as recommended by Saunders et al. (2012).

3.3 Research Design

A research design is defined by Kumar (2005) as "a procedural plan that the researcher adopts to answer questions validly, objectively, accurately, and economically.” A descriptive design determines the relationship between study variables (Bryman and Bell, 2015). This study

applied a correlational research design that sought to determine the existing relationships between the study variables as suggested by Devi *et al*. (2022).

3.4 Target Population

A population encompasses the entire group of individuals, events, or objects sharing common observable characteristics (Mugenda & Mugenda, 2003). The research population includes all the elements the researcher can generalize from (Cooper & Schindler, 2014). The target population consists of the specific group of individuals, events, or objects that the researcher aims to focus on. For this study, the target population included microfinance institutions operating in Kenya from 2016 to 2021. According to the CBK (2021), there were 13 licensed microfinance banks in Kenya, as listed in Appendix I. These thirteen microfinance institutions are the unit of analysis for this study. The targeted respondents are 316 permanent employees in senior and middle management positions, identified through the Human Resource Department of each MFB, and they constitute the unit of observation for the study.

3.5 Sampling Procedure

A sample is a portion of the total population that the researcher is considering for the study (Yin, 2004). Using a sampling method, a sample is drawn from a population to represent the whole population because studying a population is time-consuming and expensive (Connaway & Powell, 2010). The following section describes the sampling technique employed in collecting data for the study.

3.5.1 Sampling Design

This study utilized a probability sampling method. Mugenda and Mugenda (2003) describe several types of probability sampling: simple random sampling, systematic random sampling, stratified random sampling, cluster random sampling, and multi-stage sampling. For this study, a stratified random sampling method was chosen. This method was preferred because it allowed the researcher to divide the target population into mutually exclusive, non-overlapping strata (senior and middle management levels). Stratification was selected as it enabled the researcher to focus on specific population characteristics to gather comprehensive research information. Additionally, stratified random sampling is an unbiased approach for grouping heterogeneous populations into homogeneous subsets and selecting within these subsets to

ensure representativeness. For this study, the strata consisted of 25% senior management and 75% middle management within each MFB.

3.5.2 Sample Size

This study utilized a probability sampling method. Mugenda and Mugenda (2003) describe several types of probability sampling: simple random sampling, systematic random sampling, stratified random sampling, cluster random sampling, and multi-stage sampling. For this study, a stratified random sampling method was chosen. This method was preferred because it allowed the researcher to divide the target population into mutually exclusive, non-overlapping strata (senior and middle management levels). Stratification was selected as it enabled the researcher to focus on specific population characteristics to gather comprehensive research information. Additionally, stratified random sampling is an unbiased approach for grouping heterogeneous populations into homogeneous subsets and selecting within these subsets to ensure representativeness. For this study, the strata consisted of 25% senior management and 75% middle management within each MFB.

Table 3. 1: Sample Size Distribution of the Study

MFBs	Management	Population	%	Sample
	Senior	17	25%	5
Kenya Women Microfinance Bank Limited	Middle	50	75%	15
	Total	67	100%	20
	Senior	3	25%	1
Maisha Microfinance Bank Limited	Middle	9	75%	3
	Total	12	100%	4
	Senior	2	25%	1
Uwezo Microfinance Bank Limited	Middle	6	75%	1
	Total	8	100%	2
	Senior	3	25%	1
U & I Microfinance Bank Limited	Middle	9	75%	3
	Total	12	100%	4
	Senior	4	25%	1
Sumac Microfinance Bank Limited	Middle	12	75%	4
	Total	16	100%	5
	Senior	8	25%	2
SMEP Microfinance Bank Limited	Middle	24	75%	8
	Total	32	100%	10
	Senior	4	25%	1
Remu Microfinance Bank Limited	Middle	12	75%	4
	Total	16	100%	5
	Senior	7	25%	2
Rafiki Microfinance Bank Limited	Middle	21	75%	6
	Total	28	100%	8
	Senior	18	25%	6
Faulu Microfinance Bank Limited	Middle	55	75%	16
	Total	73	100%	22
	Senior	1	25%	1
Daraja Microfinance Bank Limited	Middle	3	75%	1
	Total	4	100%	2
	Senior	2	25%	1
Choice Microfinance Bank Limited	Middle	6	75%	1
	Total	8	100%	2
	Senior	6	25%	2
Century Microfinance Bank Limited	Middle	18	75%	5
	Total	24	100%	7
	Senior	4	25%	1
Caritas Microfinance Bank Limited	Middle	12	75%	4
	Total	16	100%	5

Total no. of Employees	316	96

3.6 Data Collection

This study adopted primary data for analysis. This study's preliminary data was collected using semi-structured questionnaires. The study considered the employees of the 13 MFBs currently operating in Kenya as the respondents. The questionnaires were administered using a google link containing the questionnaire, which will be sent to every respondent. This approach was considered to be the most appropriate during this period when people were still hesitant about contact and movement. A questionnaire was considered the best tool for quantitative research because it is easily administered (Wilkinson & Birmingham, 2003). The respondents in this study were senior and middle management level employees of the 13 registered MFBs in Kenya. This was because this category of respondents either is informed or deals with fraud cases in MFBs in Kenya.

The questionnaire was divided into three sections: Section A will contain the respondent's General Information; Section B determined the adoption and use of the various fraud management strategies among MFBs in Kenya. Section C determined the level of non-financial performance by MFBs. To increase the response rate, the researcher sought to; send a paper or email notification notifying participants that they would be receiving your survey. The respondent also sought to tell respondents what the purpose of the research was and how their feedback would be used. The researcher also gave the respondents a gentle nudge by reminding them from time to time. The researcher also planned to not overload the questionnaire with unnecessary questions to increase the response rate.

3.7 Research Quality

The quality of this study was determined through instrument validity and reliability. Validity is the level of the accuracy of a concept's conclusion and how it corresponds to the real world (Brains, Willnat, Manheim & Rich, 2011). The study data was collected from reliable sources to increase the study's validity. A pre-test was carried out on fifteen potential respondents. Fifteen respondents were viewed as adequate since to uncover common problems in the study

questionnaire, Pernerger, Courvoisier, Hudelson and Gayet-Ageron (2015) recommended a default size of between 10-15 participants for the pre-test as long as the study population or sample does not exceed 100. They further posited that a sample size of 15 participants for a pre-test achieves a power of 75 % to detect the problems in the questionnaire. The research instrument was piloted to clarify grammar and wording to avoid misinterpretation, research bias, and to detect ambiguity in the questions. These were meant to enhance the validity of the data used in this analysis.

The study employed a Likert scale to test for reliability. Cronbach's Alpha will also be used as the measure of reliability. A reliability co-efficient of $\alpha \geq 0.7$ was considered adequate in indicating a high level of internal consistency for the Likert scale used. This enabled the researcher to address any weaknesses with the questionnaire and the general survey technique of the research. Editing and improvements were also made to both the content and the structure of the research tool to help reduce the errors.

3.8 Data Analysis

After data collection, the researcher reviewed the questionnaires to ensure completeness, then serialized them for coding and entry. The coded responses were entered into SPSS software for analysis using descriptive statistics, including standard deviation, frequency distribution, and mean scores, as well as inferential statistics. A regression analysis model was employed in this study, where the independent variables were the selected fraud management strategies (Brandt & Brandt, 1998), and the dependent variable was the non-financial performance levels of MFBs. Multiple regression analysis was used to assess the relationship between each independent variable and the non-financial performance of MFBs. The findings from both descriptive and inferential statistics were presented in tables and graphical formats, such as bar graphs and pie charts, to facilitate straightforward interpretation.

3.8.1 Regression Model

Ordinal regression is a regression analysis approach used for predicting ordinal variables. In ordinal regression data is described and explained in terms of the relationship between the dependent and independent variables in this study's case, the relationship between fraud

management strategies adopted and the performance of micro-financial institutions (MFBs) in Kenya.

In this study's ordinal regression analysis, the dependent variable is ordinal and the independent variables are continuous (interval). The regression model was derived from:

$Y= \beta_0 + \beta_1 X_{i2} + \beta_2 X_{i2} + \ldots + \beta_p X_{in}$

The study will use the following multivariate regression model;

$NFP= \beta_0 + \beta_1 FRDr + \beta_2 FRP + \beta_3 FRDt + \beta_4 FRM + \varepsilon$

NFP= Non-Financial Performance of MFBs (Dependent Variable)

FRDr= Fraud Risk Deterrence (Independent Variable One)

FRP= Fraud Risk Prevention (Independent Variable Two)

FRDt=Fraud Risk Detection (Independent Variable Three)

FRM= Fraud Risk Mitigation (Independent Variable Four)

β_0 – The constant of the model

$\beta_1 – \beta_4$ are regression coefficients

ε = Stochastic error term estimate

The coefficients will be reported at a 95% confidence interval and p-values

3.8.2 Diagnostic Tests

Several diagnostic tests will be done to examine the robustness of the regression model used. The tests include Linearity Test, Collinearity Test and Auto-correlation

3.8.2.1 Linearity Test

Linear test is done to ascertain whether one or more independent variables explain the dependent variable. The linearity test was done to determine whether the relationship is linear

through producing scatter plots diagram of the relationship then an examination of residual plots was done with the assistance of the SPSS Software.

3.8.2.2 Collinearity Test

A collinearity test is used to determine if two variables are almost perfect linear combinations of each other. In this study, multicollinearity was assessed using tolerance and Variance Inflation Factor (VIF) values. VIF is the reciprocal of the tolerance statistic (Field, 2009). For each independent variable, tolerance measures the proportion of variability in that variable that is not explained by its linear relationships with the other independent variables in the model. A tolerance value of zero indicates high multicollinearity with other independent variables, leading to unstable beta coefficients. A tolerance value below 0.10 or a VIF value greater than 10 indicates a significant multicollinearity issue (Kothari, 2004).

3.8.2.3 Heteroscedasticity Test

According to Astivia and Zumbo (2019), heteroscedasticity refers to the notion that, following the inclusion of the predictors in the regression model, the remaining residual variability changes are dependent on factors that are not included in the model. It occurs when a predicted variable's standard deviations when observed over different values of an independent variable are not constant. Heteroscedasticity seeks to disapprove the inherent regression assumption of homoscedasticity, that the variance of the error term is consistent across all measures of the model. It can be tested visually through the use of scatter plots by observing the pattern the data will take such that data which follows a cone shape is deemed to heteroscedastic. When the data takes on such a shape it cannot be used to perform a normal type of linear regression owing to the lack of constancy in the value of the variance. It can be tested using the Breusch-Pagan test which uses a normal chi square test where a significant result is said to be heteroscedastic. This method requires the data to be normally distributed otherwise it will yield false results. This study used the Breusch-Pagan test of heteroscedasticity.

3.8.2.4 Normality Test

Ghasemi and Zahediasl (2013) explained that normality tests are used in establishing whether the assumption of normality, that the data follows a normal distribution, holds. Normality can

be undertaken using visual methods by visually inspecting the distribution of the data in histograms, stem-and-leaf plot, boxplot, probability-probability (P-P) plot, and quantile-quantile (Q-Q) plot. Thus, if the shape of the distribution of the data is construed to be bell shaped then this is a normal distribution. However, owing to the inherent inaccuracies in the visual methods, more accurate statistical normality tests can be conducted including the Kolimogorov-Smirnov (K-S) test, Lilliefors corrected K-S test, the Shapiro-Wilk test, the Anderson-Darling test, just to name a few. The most popular of these are the K-S and the Shapiro-Wilk test. These tests make comparisons between sample scores and a set of normally distributed scores with identical mean and standard deviation. The data is interpreted to be not normally distributed if the test is significant. The K-S test is usually applied when the sample size is more than 50 while the Shapiro-Wilk test is used when the sample size is less than 50. The study used the Shapiro-Wilk test (due to the small sample size) to test normality.

3.8.2.5 Autocorrelation Test

According to Huitema and Laraway (2006) autocorrelation occurs when the errors of models used in parametric procedures are not independent of one another. Thus, autocorrelation can lead to misleading results and conclusions unless corrective action is taken. The most popular method of measurement of autocorrelation is through the computation of the lag-1 autocorrelation coefficient which signifies the correlation between residuals at their associated time *t* and adjusting the same residuals ahead by one unit of time which is denoted by r_1. The value of the autocorrelation coefficient varies between -1.0 and +1.0.

3.9 Ethical Considerations

The prospective participants were invited to participate in the study voluntarily without coercion, deception, or force and with a clear understanding that they were under no obligation to participate. The prospective participants were also informed that they can withdraw from the exercise if they feel uncomfortable participating. There were no negative consequences for them if they did so. The researcher also made the prospective participants understand the research's reason and assured them that the information they provided will be used for academic purposes only and treated with confidentiality.

The respondents' answers will be kept confidential and anonymous through the researcher separating herself from the respondents so that responses are anonymous and confidential. A research assistant not affiliated with any of the MFBs was also appointed to help collect and code the data to maintain confidentiality and anonymity. The researcher maintained integrity and professionalism when engaging in the study and offering the data. The interpretations and findings of the research were also executed objectively and truthfully. The study results were utilised for academic purposes only which was relayed to the respondents.

The researcher applied for ethical approval from the Ethics Review Committee of Strathmore University to acquire a Research Permit from the National Commission for Science, Technology, and Innovation (NACOSTI).

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The chapter presented the research findings which included the response rate, pilot test results, background information, descriptive statistics and inferential statistics.

4.2 Response Rate

A response rate is a determination of how many questionnaires have been completed when compared to the total number of people who were contacted (Morton *et al.*, 2012). There were 198 questionnaires which were administrated through the Google Forms platform, but only 180 were responded to representing a response rate of 91% which was way above the 60-70% threshold recommended by Morton *et al.* (2012) for social research studies. This information is presented in Table 4.1.

Table 4. 1: Response Rate

Category	Response	Percentage
Questionnaires that were responded to	180	91%
Questionnaires that were not responded to	18	9%
Total	**198**	**100%**

4.3 Background Information on Respondents

The background information of the respondents was captured in Table 4.2. According to the results, out of 180 respondents, 89 were male while 91 were female, representing 49% and 51% respectively. This was a reflection of the fact that licensed MFBs in Kenya have a fairly good gender diversity which affirmed the findings of Adusei and Obeng (2019). Additionally, out of 180 respondents, 52 were between the ages of 18-25; 61 were between the ages of 26-35; 50 were between the ages of 36-45; and 17 were 46 years and above, representing 29%, 34.4%, 27.5%, and 9.2%, respectively. This is an indicator that the majority of staff in licensed MFBs in Kenya were mature in age and that there was a fairly good age diversity in these institutions, which was consistent with the findings of Ouma and Webi (2017). Further, out of 180

respondents, 66 had attained up to college level education while 114 had attained up to university education, representing 36.6% and 63.4%, respectively. This is a reflection of the fact that licensed MFBs in Kenya had prioritised high academic credentials among their staff which was consistent with the findings of Ombongi (2017).

The results also showed that out of 180 respondents, 52 had been employed for less than 1 year; 68 for between 1 to 5 years; 43 for between 6 and 10 years; and 17 for above 10 years, representing 29%, 38.2%, 23.7%, and 9.2%, respectively. This is an indicator that there is a fairly good experience diversity in licensed MFBs in Kenya which corroborated the findings of Tanui *et al.* (2017). Lastly, out of 180 respondents, 26 were in accounting, 23 in operations, 43 in administration, 32 in sales and marketing, 41 in risk and compliance, and 15 in other roles, representing 14.5%, 13%, 23.7%, 17.9%, 22.5%, and 8.4%, respectively. This signified that there was a good composition of expertise amongst the respondents, particularly in administration, and risk and compliance which are critical towards the purpose of the study. This was aligned with the findings of Gachuru (2020).

Table 4. 2: Background Information of the Respondents

Demographic	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	89	49.2	49.2	49.2
	Female	91	50.8	50.8	100.0
	Total	180	100.0	100.0	
Age	Between 18-25	52	29.0	29.0	29.0
	Between 26-35	61	34.4	34.4	63.4
	Between 36-45	50	27.5	27.5	90.8
	46 & above	17	9.2	9.2	100.0
	Total	180	100.0	100.0	
Education	College	66	36.6	36.6	36.6
	University	114	63.4	63.4	100.0
	Total	180	100.0	100.0	
Length	Less than 1 year	52	29.0	29.0	29.0
	1 - 5 years	68	38.2	38.2	67.2
	6 – 10 years	43	23.7	23.7	90.8
	Above 10 years	17	9.2	9.2	100.0
	Total	180	100.0	100.0	
Role	Accounting	26	14.5	14.5	14.5
	Operations	23	13.0	13.0	27.5

Administration	43	23.7	23.7	51.1
Sales and marketing	32	17.9	17.9	69.1
Risk and compliance	15	8.4	8.4	77.5
Other roles	41	22.5	22.5	100.0
Total	180	100.0	100.0	

4.4 Pilot Test Results

4.4.1 Reliability of Pilot Test Results

The reliability analysis featured the Cronbach's Alpha scores for all the study variables, which were captured in the Table 4.2.

Table 4. 3: Reliability Statistics

Reliability Statistics

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Combined	.880	.879	20
Fraud Risk Deterrence	.730	.727	4
Fraud Risk Prevention	.720	.703	4
Fraud Risk Detection	.709	.693	4
Fraud Risk Mitigation	.731	.740	4
Non-financial Performance	.701	.693	4

According to the results in Table 4.2, each of the variables had Cronbach's Alpha scores above the 0.7 threshold indicating that they all had acceptable levels of internal consistency.

4.4.2 Validity of Pilot Test Results

Criterion Validity

The questionnaire was validated by the supervisor in terms of various criteria as shown and it was determined that the instrument's contents were acceptable.

Table 4. 4: Criterion Validity of Pilot Test Results

	No extent	Little extent	Moderate extent	Great extent	Very Great extent
Issue of fraud risk management strategies has been adequately captured				50%	50%
Number of questions are sufficient for research				20%	80%
Non-financial performance is well captured by the questions				60%	40%
Demographic Questions add value to the research				30%	70%
The questions are well articulated				70%	30%
Likert Scale is appropriate for the study				40%	60%

Construct Validity

The results presented in Table 4.4 show that all items addressing each variable had a factor loading value of above 0.4 implying that all the items were valid thus none was deleted. The items were considered valid for collecting data for the main study.

Table 4. 5: **Communalities for Exploratory Component Factor Analysis**

Communalities

	Initial	Extraction
Good or bad financial performance of a company is influenced by cases of fraud that occur in the company if fraud is not detected.	1.000	.911
Preventive and control strategies that had been adopted by the organisation were successful in reducing the occurrence of fraud.	1.000	.932
Fraud investigation and detection significantly influence internal audit quality in the organisation.	1.000	.957
Using tools to detect and prevent job fraud and fraud reduction are effective fraud risk deterrence strategies.	1.000	.887
The company has invested in the training of employees in fraud risk management.	1.000	.891
The more stringent fraud prevention measures are, the more likely the firm is to experience greater growth in terms of profitability.	1.000	.874

Thanks to well-established and frequent risk monitoring, the organisation was able to prevent major occurrence of fraud risk events.	1.000	.910
The organisation had established and executed a fraud risk management plan which was an indicator of the strong commitment by the senior management and board members to high and ethical standards pertaining to risk prevention management.	1.000	.876
The fraud risk detection mechanisms that had been instituted had enabled faster and more frequent identification of potential fraud risk.	1.000	.875
The improved fraud detection expertise of fraud inspectors owing to the extra training that they had undergone had enabled them to identify fraud risk early and take the necessary action.	1.000	.809
There was a high incidence of fraud amongst the mobile money system operators owing to a lack of understanding of fraud risk assessment which made them vulnerable to attack by fraudsters.	1.000	.847
The MFB had majorly instituted financial accountability through the adoption of audit efficiency and fraud detection where emphasis was made on the regular conduct of fraud risk assessments.	1.000	.976
The fraud risk mitigation measures that were employed included the vetting of new employees prior to hiring them so as to establish their performance history and avoid hiring potential fraudsters.	1.000	.735
Profitability and debt positions of the company are impacted by its fraud mitigation level.	1.000	.926
The organisation has employed fraud risk management strategies such as the provision of continuous anti-fraud training of MFB personnel.	1.000	.951
The organization has established an enabling environment for trust that engenders confidence by employees to act as whistle blowers of fraud.	1.000	.799
The company has adopted internal business processes as one of the non-financial performance metrics.	1.000	.760
Additionally, the non-financial performance metrics adopted the MFB included strategic alignment and integration.	1.000	.884
The MFB has instituted the customer experience dimension which included indicators such as customer satisfaction and retention rate.	1.000	.891
The strategic innovation orientation enabled the enhancement of the product and service offering of the MFB.	1.000	.751

Extraction Method: Principal Component Analysis.

4.5 Descriptive Statistics

4.5.1 Fraud Risk Deterrence Strategies and Non-Financial Performance

The findings of the descriptive statistics relating in Fraud Risk Deterrence are presented in Table 4.5. According to the findings, the statement “whistleblowing policies have succeeded in enhancing the deterrence of fraud risk” had a mean of 3.1908. This showed that the majority were in agreement with the statement. Additionally, that the statement “punitive penalties that had been adopted by the organisation were successful in reducing the occurrence of fraud” had a mean of 3.0382. This showed a fairly positive affirmation of the statement by most of those that participated.

The results further showed that that the statement “the organisation has institutionalised effective controls” had a mean score of 2.8931. This is a marginal level of agreement. Lastly, that the statement “fraud risk awareness initiatives have led to the deterrence of fraud.” had a mean of 3.5344. This was an indicator that the majority of those who participated agreed with the statement. Further, an assessment of the standard deviations of all the statements indicates that the statements had standard deviations ranging from 0.49977 and 1.4091 showing that there was little variation between each of the responses and the mean responses.

Table 4. 6: Descriptive Statistics of Fraud Risk Deterrence Strategies

	N	Minimum	Maximum	Mean	Std. Deviation
Whistleblowing policies have succeeded in enhancing the deterrence of fraud risk.	180	1.00	5.00	3.1908	1.40941
Punitive penalties that had been adopted by the organisation were successful in reducing the occurrence of fraud.	180	2.00	5.00	3.0382	.93796
The organisation has institutionalised effective controls.	180	2.00	5.00	2.8931	.83736
Fraud risk awareness initiatives have led to the deterrence of fraud.	180	3.00	4.00	3.5344	.49977
Valid N (listwise)	180				

4.4.2 Fraud Risk Prevention Strategies and Non-Financial Performance

The findings of the descriptive statistics of Fraud Risk Prevention Strategies are captured in Table 4.6. According to the findings, that the statement “the company has invested in the training of employees in fraud risk management” had a mean of 3.6985. This showed that there was a marginally positive endorsement of the statement by those who participated. Further, that the statement “the more stringent fraud prevention measures are, the more likely the firm is to experience greater growth in terms of profitability” had a mean of 3.3550 indicating that most of those who participated affirmed it.

Additionally, that the statement "thanks to well-established and frequent risk monitoring, the organisation was able to prevent major occurrence of fraud risk events” had a mean of 3.6985. This reflected that most of them were in agreement with the statement. Lastly, that the statement “the organisation had established and executed a fraud risk management plan which was an indicator of the strong commitment by the senior management and board members to high and ethical standards pertaining to risk prevention management” had a mean of 3.4504. This showed that there was only a marginal level of agreement amongst those that participated. The standard deviations of all the statements ranged from 0.49200 to 1.02831 indicating that there was little variation between each response and the mean response.

Table 4. 7: Descriptive Statistics of Fraud Risk Prevention Strategies

	N	Minimum	Maximum	Mean	Std. Deviation
The company has invested in the training of employees in fraud risk prevention.	180	2.00	5.00	3.6985	.76107
The more stringent fraud prevention measures are, the more likely the firm is to experience greater growth in terms of profitability.	180	2.00	5.00	3.3550	1.02831
Thanks to well-established and frequent risk monitoring, the organisation was able to prevent major occurrence of fraud risk events.	180	2.00	5.00	3.6985	.49200
The organisation had established and executed a fraud risk management plan which was an indicator of the strong commitment by the senior management and board members to high and ethical standards pertaining to risk prevention management.	180	3.00	5.00	3.4504	.64581
Valid N (listwise)	180				

4.4.3 Fraud Risk Detection Strategies and Non-Financial Performance

The findings pertaining to the descriptive statistics of Fraud Risk Detection Strategies are presented in Table 4.7. According to the findings, that the statement "the fraud risk detection mechanisms that had been instituted had enabled faster and more frequent identification of potential fraud risk" had a mean of 3.2137. This indicated that the majority were in agreement with the statement. Additionally, that the statement "the improved fraud detection expertise of fraud inspectors owing to the extra training that they had undergone had enabled them to identify fraud risk early and take the necessary action" had a mean of 3.1870. This showed that there was only a moderately positive endorsement of the statement among the respondents.

Further, that the statement "there was a high incidence of fraud amongst the mobile money system operators owing to a lack of understanding of fraud risk assessment which made them

vulnerable to attack by fraudsters" had a mean of 2.6489. This was a marginal level of agreement among those who participated. Lastly, that the statement "the MFB had majorly instituted financial accountability through the adoption of audit efficiency and fraud detection where emphasis was made on the regular conduct of fraud risk assessments" had a mean of 2.7901. This was a marginal level of agreement among those who participated. The standard deviations of all the statement ranged between 0.71609 and 0.91696 indicating that there was little variation between each response and the mean response.

Table 4. 8: Descriptive Statistics of Fraud Risk Detection Strategies

	N	Minimum	Maximum	Mean	Std. Deviation
The fraud risk detection mechanisms that had been instituted had enabled faster and more frequent identification of potential fraud risk.	180	2.00	4.00	3.2137	.79276
The improved fraud detection expertise of fraud inspectors owing to the extra training that they had undergone had enabled them to identify fraud risk early and take the necessary action.	180	2.00	5.00	3.1870	.71609
There was a high incidence of fraud amongst the mobile money system operators owing to a lack of understanding of fraud risk assessment which made them vulnerable to attack by fraudsters.	180	2.00	5.00	2.6489	.72634
The MFB had majorly instituted financial accountability through the adoption of audit efficiency and fraud detection where emphasis was made on the regular conduct of fraud risk assessments.	180	2.00	5.00	2.7901	.91696
Valid N (listwise)	180				

4.4.4 Fraud Risk Mitigation Strategies and Non-Financial Performance

The findings of the descriptive statistics of Fraud Risk Mitigation Strategies are presented in Table 4.8. Accordingly, that the statement "the fraud risk mitigation measures that were employed included the vetting of new employees prior to hiring them so as to establish their performance history and avoid hiring potential fraudsters" had a mean of 3.4656. This fairly strong affirmation by those who participated. Additionally, the statement "that profitability and debt positions of the company are impacted by its fraud mitigation level" had a mean of 2.9885. This was a marginal level of agreement.

Further, that the statement "the organisation has employed fraud risk management strategies such as the provision of continuous anti-fraud training of MFB personnel" had a mean of 3.1221. This was an indicator that most of those who participated were in agreement with the statement. Lastly, that the statement "the organization has established a policy of targeted friction which has led to effective fraud risk mitigation" had a mean of 3.3779. This indicated that the majority of those who participated were in agreement with the statement. All the standard deviations of the statements ranged between 0.64799 and 1.22704 indicating that there was little variation between each response and the mean response.

Table 4. 9: Descriptive Statistics of Fraud Risk Mitigation Strategies

	N	Minimum	Maximum	Mean	Std. Deviation
The fraud risk mitigation measures that were employed included the vetting of new employees prior to hiring them so as to establish their performance history and avoid hiring potential fraudsters.	180	1.00	5.00	3.4656	.73027
Profitability and debt positions of the company are impacted by its fraud mitigation level.	180	1.00	5.00	2.9885	1.22704
The organisation has employed fraud risk mitigation strategies such as the provision of continuous anti-fraud training of MFB personnel.	180	2.00	5.00	3.1221	.77334
The organization has established a policy of targeted friction which has led to effective fraud risk mitigation.	180	2.00	5.00	3.3779	.64799
Valid N (listwise)	180				

4.4.5 Non-Financial Performance

The findings of the descriptive statistics of Non-financial Performance are presented in Table 4.9. According to the findings, that the statement "the company has adopted internal business processes as one of the non-financial performance metrics" had a mean of 3.1679. This indicated that most of those who participated endorsed the statement. Additionally, that the statement "the non-financial performance metrics adopted the MFB included strategic alignment and integration" had a mean of 3.4351. This is a relatively high level of agreement.

Further, that the statement "the MFB has instituted the customer experience dimension which included indicators such as customer satisfaction and retention rate" had a mean of 3.9504. This was a strong level of affirmation of the statement. Lastly, that the statement "the strategic innovation orientation enabled the enhancement of the product and service offering of the MFB" had a mean of 3.8092. This was a high level of agreement. The standard deviations of all the statements ranged between 0.50438 and 1.00308 indicating that there was little variation between each response and the mean response.

Table 4. 10: Descriptive Statistics of Non-Financial Performance

	N	Minimum	Maximum	Mean	Std. Deviation
The company has adopted internal business processes as one of the non-financial performance metrics.	180	1.00	5.00	3.1679	1.00308
Additionally, the non-financial performance metrics adopted the MFB included strategic alignment and integration.	180	2.00	4.00	3.4351	.50438
The MFB has instituted the customer experience dimension which included indicators such as customer satisfaction and retention rate.	180	3.00	5.00	3.9504	.64432
The strategic innovation orientation enabled the enhancement of the product and service offering of the MFB.	180	2.00	5.00	3.8092	.87200
Valid N (listwise)	180				

4.5 Diagnostic Test Results

4.5.1 Linearity Test

The results pertaining to the linearity test for the study are presented in Table 4.11. According to the results, the level of significance for the relationship between Fraud Risk Deterrence Strategies and Non-Financial Performance was 0.000 while the deviation from linearity is also 0.000 indicating the presence of a linear relationship as well as a significant deviation from linearity. Additionally, the level of significance for the relationship between Fraud Risk Prevention Strategies and Non-Financial Performance was 0.000 while the deviation from linearity is also 0.000 indicating the presence of a linear relationship as well as a significant deviation from linearity. Further, the level of significance for the relationship between Fraud Risk Detection Strategies and Non-Financial Performance was 0.000 while the deviation from linearity is also 0.000 indicating the presence of a linear relationship as well as a significant deviation from linearity. Lastly, the level of significance for the relationship between Fraud Risk Mitigation Strategies and Non-Financial Performance was 0.000 while the deviation from linearity is also 0.000 indicating the presence of a linear relationship as well as a significant deviation from linearity.

Table 4. 11: Linearity Test Results

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Non-Financial Performance * Fraud Risk Deterrence Strategies	Between Groups	(Combined)	83.363	3	27.788	143.210	.000
		Linearity	70.945	1	70.945	365.633	.000
		Deviation from Linearity	12.417	2	6.209	31.998	.000
	Within Groups		50.061	258	.194		
	Total		133.424	261			
Non-Financial Performance * Fraud Risk Prevention Strategies	Between Groups	(Combined)	78.133	2	39.067	183.001	.000
		Linearity	71.101	1	71.101	333.063	.000
		Deviation from Linearity	7.032	1	7.032	32.939	.000
	Within Groups		55.291	259	.213		
	Total		133.424	261			

Non-Financial Performance * Fraud Risk Detection Strategies	Between Groups	(Combined)	73.827	3	24.609	106.536	.000
		Linearity	.065	1	.065	.280	.597
		Deviation from Linearity	73.763	2	36.881	159.664	.000
	Within Groups		59.596	258	.231		
	Total		133.424	261			
Non-Financial Performance * Fraud Risk Mitigation Strategies	Between Groups	(Combined)	50.936	3	16.979	53.105	.000
		Linearity	.000	1	.000	.001	.009
		Deviation from Linearity	50.936	2	25.468	79.657	.000
	Within Groups		82.488	258	.320		
	Total		133.424	261			

4.5.2 Collinearity Test

The results relating to the Multicollinearity tests are shown in Table 4.12. The Variance Inflation Factor (VIF) is the reciprocal of the Tolerance and is always greater than or equal to 1. Values of VIF that exceed 10 are considered to indicate Multicollinearity and can amplify the standard errors of the regression coefficients. Additionally, Multicollinearity presents the problem of strong relationships between the predictor variables and the outcome variable, which is indicated by p-values that exceed 0.05. According to the results, the VIFs for four independent variables were 1.444, 1.800, 1.444 and 1.875, for Fraud Risk Deterrence, Fraud Risk Prevention, Fraud Risk Detection, and Fraud Risk Mitigation, respectively. Given that these values were greater than 1 and less than 10 then it is apparent that there is no Multicollinearity. In other words, there is no strong relationship between each of the independent variables and the dependent variable and are, thus statistically significant meaning that they contribute significantly to the model when each of them is included. This confirms the suitability of the multiple regression model.

Table 4. 12: Multicollinearity Test

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Fraud Risk Deterrence	.693	1.444
	Fraud Risk Prevention	.556	1.800
	Fraud Risk Detection	.693	1.444
	Fraud Risk Mitigation	.533	1.875

a. Dependent Variable: Non-Financial Performance

4.5.2 Heteroscedasticity Test

The findings relating to the Heteroscedasticity Test are shown in Table 4.13. According to the results, using the Breusch Pagan test, it can be observed that the p-value was 0.201 which is above 0.05 indicating that it is not statistically significant and confirming the absence of heteroscedasticity. This means that the standard errors that are in the output table of the regression are reliable.

Table 4. 13: Heteroscedasticity Statistics

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.913	3	.638	11.174	.201[b]
	Residual	.742	13	.057		
	Total	2.655	16			

a. Dependent Variable: sqres

b. Predictors: (Constant), Fraud Risk Deterrence, Fraud Risk Prevention, Fraud Risk Detection, Fraud Risk Mitigation

4.5.2 Normality Test

The results of the normality test for the pilot study are presented in Table 4.14. It should be noted that since the sample size for the pilot was only 10, the K-S test applied rather than the Shapiro-Wilk test. According to the results, the p-values for Fraud Risk Deterrence were 0.005 and 0.004 indicating that it was statistically significant and, therefore, not normally distributed. Additionally, the p-value for Fraud Risk Prevention was 0.000 for Agree indicating that it was statistically significant and, therefore, not normally distributed but the p-value for Strongly Agree was 0.119 indicating that it was not statistically significant and, therefore, normally distributed. The p-values for Fraud Risk Detection was 0.020 and 0.001 for Agree and Strongly

Agree, respectively indicating it was statistically significant and, therefore, not normally distributed. Finally, the p-values for Fraud Risk Mitigation were 0.119 for Neutral indicating lack of statistical significant and evidence of normal distribution; and 0.004 for strongly agree indicating that it was statistically significant and, therefore, not normally distributed.

Table 4. 14: Normality Test Results

Tests of Normality

			Kolmogorov-Smirnov			Shapiro-Wilk		
			Statistic	df	Sig.	Statistic	df	Sig.
Fraud Deterrence	Risk	Agree	.223	9	.200	.838	9	.045
		Strongly Agree	.319	6	.056	.683	6	.004
Fraud Prevention	Risk	Neutral	.260	2				
		Agree	.433	10	.000	.594	10	.000
		Strongly Agree	.241	5	.200	.821	5	.119
Fraud Detection	Risk	Agree	.186	10	.111	.462	10	.020
		Strongly Agree	.121	5	.024	.356	5	.001
		Neutral	.241	5	.200	.821	5	.119
Fraud Mitigation	Risk							
		Strongly Agree	.319	6	.056	.683	6	.004

Dependent Variable:Non- Financial Performance

4.6 Inferential Statistics

4.6.1 Pearson Correlation Analysis

Pearson correlation coefficients signify the strength of the linear association of two or more variables (Benesty *et al.*, 2009). The results of the Pearson correlation are shown in Table 4.13 indicate that all the four independent variables, Fraud Risk Deterrence Strategies, Fraud Risk Prevention Strategies, Fraud Risk Detection Strategies, and Fraud Risk Mitigation Strategies

had positive correlations of r = 0.729; r = 0.730; r = 0.582 and r = 0.611, respectively with the dependent variable of Non-Financial Performance. Therefore, a change of one unit in Fraud Risk Deterrence Strategies will result in a corresponding change of 0.729 in the Non-Financial Performance; a change of one unit in Fraud Risk Prevention Strategies will lead to a corresponding change of 0.730 in Non-Financial Performance; a change of one unit in Fraud Risk Detection Strategies will result in a corresponding change of 0.582 in Non-Financial Performance; and a change of unit in Fraud Risk Mitigation Strategies will result in a corresponding change of 0.611 in Non-Financial Performance.

Additionally, the p-values for all the independent variables were below 0.05 indicating that there was a statistically significant association between each of them and Non-Financial Performance.

Table 4. 15: Correlation Analysis

Correlations

		FRD	FRP	FRDET	FRM	NFP
FRD	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	180				
FRP	Pearson Correlation	.774**	1			
	Sig. (2-tailed)	.000				
	N	180	180			
FRDET	Pearson Correlation	.587**	.247**	1		
	Sig. (2-tailed)	.000	.000			
	N	180	180	180		
FRM	Pearson Correlation	-.018	.232**	-.152*	1	
	Sig. (2-tailed)	.766	.000	.013		
	N	180	180	180	180	
NFP	Pearson Correlation	.729**	.730**	.582	.611	1
	Sig. (2-tailed)	.000	.000	.003	.000	
	N	180	180	180	180	180

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Key: FRD – Fraud Risk Deterrence Strategies; FRP – Fraud Risk Prevention Strategies; FRDET – Fraud Risk Detection Strategies; FRM – Fraud Risk Mitigation Strategies; NFP – Non-Financial Performance

4.6.2 Multiple Regression Analysis

The multiple regression model summary of the study is shown in Table 4.14. According to the Table, the Adjusted R Square value is 0.851 indicating that the model can be used to forecast any changes in Non-Financial Performance 85.1% of the time whenever there is a one unit change in the independent variables. The model attained the 0.7 threshold that was recommended by Hamilton *et al.* (2015), demonstrating a very strong goodness-of-fit.

Table 4. 16: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.924[a]	.853	.851	.27594

a. Predictors: (Constant), Fraud Risk Mitigation Strategies, Fraud Risk Deterrence Strategies, Fraud Risk Detection Strategies, Fraud Risk Prevention Strategies

Analysis of Variance (ANOVA) is a statistical method used to assess differences among means of experimental groups with one or more independent variables and a dependent variable (Sawyer, 2009). The ANOVA results presented in Table 4.15 reveal a significant relationship between all independent variables and the dependent variable of Non-Financial Performance. The calculated F-test score, Fcal, at a 5% significance level is 574.594, surpassing the critical F value (Fcrit) of 2.45. This indicates a statistically significant association between the independent variables and project implementation, as suggested by Kao and Green (2008). The p-value of 0.000, lower than 0.05, further confirms the statistical significance of the relationship between each independent variable and project implementation, validating the model's goodness of fit (Sawyer, 2009; Kao & Green, 2008).

Table 4. 17: Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113.855	4	43.750	574.594	.000[b]
	Residual	19.568	175	.076		
	Total	133.424	179			

a. Dependent Variable: Non-Financial Performance

b. Predictors: (Constant), Fraud Risk Mitigation Strategies, Fraud Risk Deterrence Strategies, Fraud Risk Detection Strategies, Fraud Risk Prevention Strategies

Beta coefficients are unknown constants estimated from the data, associated with specific predictors or independent variables (Peterson & Brown, 2005). These coefficients measure the extent of change in an independent variable and its impact on the dependent variable, assuming all other independent variables remain constant. Table 4.16 presents the results of the Beta coefficients for the study variables. The constants and coefficients values allowed for the creation of the following multiple regression model:

$$NFP = \beta_0 + \beta_1 FRDr + \beta_2 FRP + \beta_3 FRDt + \beta_4 FRM + \varepsilon$$

$$= 2.258 + 0.887\ FRDr + 0.144\ FRP + 0.526\ FRDt + 0.100\ FRM + 0.116$$

According to the equation, if all independent variables are set to zero, the Non-Financial Performance will have a constant value of 2.258. The findings indicate that a unit increase in Fraud Risk Deterrence Strategies results in a 0.887 increase in Non-Financial Performance, assuming all other independent variables remain constant. Similarly, a unit increase in Fraud

Risk Prevention Strategies leads to a 0.144 increase in Non-Financial Performance, with all other independent variables held constant. Additionally, a unit increase in Fraud Risk Detection Strategies results in a 0.526 increase in Non-Financial Performance, when all other independent variables are held constant. Lastly, a unit increase in Fraud Risk Mitigation Strategies leads to a 0.100 increase in Non-Financial Performance, assuming all other independent variables remain constant. The p-values for all variables are below 0.05, indicating their statistical significance.

Table 4. 18: Beta Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.258	.116		19.457	.000
	Fraud Risk Deterrence Strategies	.887	.045	1.013	19.921	.000
	Fraud Risk Prevention Strategies	.144	.047	.137	3.098	.002
	Fraud Risk Detection Strategies	.526	.025	.668	20.691	.000
	Fraud Risk Mitigation Strategies	.100	.023	.114	4.377	.000

a. Dependent Variable: Non-Financial Performance

4.7 Chapter Summary

This chapter presented the research findings. The findings included the response rate which captured the proportion of the administered questionnaires which were returned. It then presented the pilot test results which included the reliability and validity tests. The results pertaining to the background information of the respondents were then presented which included the gender, age, highest level of education, duration of employment, and role in the organisation. The descriptive statistics were then presented which featured the frequency distribution tables of responses to the various questions on the study variables. Finally, it covered the inferential statistics which included the results of the Pearson Correlation Analysis and Multiple Regression Analysis.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter features the summary of the findings, an articulation of the resultant conclusions; and a description of the recommendations that will be derived from the conclusions. It will also include suggestions for further studies, implication of the study, and limitations of the study.

5.2 Discussion

The Pearson Correlation analysis revealed positive correlations between all independent variables and the dependent variable, with a statistically significant relationship for each. An adjusted R value of 85.1% suggested that the regression model could explain 85.1% of the changes in the dependent variable, indicating a relatively strong goodness of fit. The ANOVA statistics confirmed both a significant relationship and a statistically significant relationship between the study variables. The beta coefficient analysis identified fraud risk deterrence strategies as the most crucial determinant of non-financial performance, followed by fraud risk detection, fraud risk prevention, and fraud risk mitigation, respectively.

5.2.1 Fraud Risk Deterrence Strategies and Non-Financial Performance of MFBs

The findings of the descriptive statistics relating in Fraud Risk Deterrence are presented in Table 4.5. According to the findings most respondents felt that the good or bad financial performance of a company is influenced by cases of fraud that occur in the company if fraud is not detected. This showed that the majority were in agreement with the statement and corroborated Meiryani *et al.* (2021). Additionally, majority of those who responded felt that preventive and control strategies that had been adopted by the organisation were successful in reducing the occurrence of fraud. This showed a fairly positive affirmation of the statement by most of those that participated and was aligned with the findings of Mwangi and Ndegwa (2020).

The results further showed that there was only a moderate level of agreement that fraud investigation and detection significantly influence internal audit quality in the organisation. This was consistent with the findings Jannopat and Phornlaphatrachakorn (2021). Lastly, most

of the participants agreed that using tools to detect and prevent job fraud and fraud reduction are effective fraud risk deterrence strategies. This was an indicator that the majority of those who participated agreed with the statement and affirmed the findings of Amuna and Mouamer (2020).

The study found a positive correlation between Fraud Risk Deterrence strategies and Non-Financial Performance of MFBs in Kenya. The implication is that MFBs which have adopted fraud risk deterrence strategies are able to enhance their non-financial performance. By leveraging on fraud risk deterrence strategies, MFBs experienced improved financial performance. This is consistent with the Fraud Triangle theory which argued that the commission of fraud can lead to reduced organisational performance, thus strategies that deter the commission of fraud will lead to improved organisational performance. This is consistent with Meiryani et al. (2021); Mwangi and Ndegwa (2020); and Ndurumo (2018). However, the findings were not consistent with Alatawi *et al.* (2023) who found that apart from financial performance, fraud also affects non-financial performance through metrics such as corporate social responsibility where potential recipients of support from corporates would rather be associated with firms which has established a good name through high levels of integrity; Omidiji *et al.* (2024) who found that MFBs that are not operationally efficient are less inclined to invest in an internal auditing function owing to agency concerns that are based on misaligned priorities between managers and owners; and Sama and Niba (2016) determined that the lack of resources has handicapped many MFBs and prevented them from institutionalising appropriate fraud reduction techniques.

5.2.2 Fraud Risk Prevention Strategies and Non-Financial Performance of MFBs

The findings of the descriptive statistics of Fraud Risk Prevention Strategies are captured in Table 4.6. According to the findings, majority of the respondents felt that the company has invested in the training of employees in fraud risk management. This showed that there was a marginally positive endorsement of the statement by those who participated which confirmed the findings of Meiryani *et al.* (2021). Further, most of the participants were in agreement with the assertion that more stringent fraud prevention measures are, the more likely the firm is to experience greater growth in terms of profitability. This corroborated the findings of Agwor (2017).

Additionally, there was a high level of agreement amongst the respondents that thanks to well-established and frequent risk monitoring, the organisation was able to prevent major occurrence of fraud risk events. This confirmed the findings of Kimathi (2018). Lastly, there was a moderate level agreement amongst the majority of participants that the organisation had established and executed a fraud risk management plan which was an indicator of the strong commitment by the senior management and board members to high and ethical standards pertaining to risk prevention management. This showed that there was only a marginal level of agreement amongst those that participated and partially affirmed the findings of Apreku-Djan *et al.* (2022).

The study found a positive correlation between fraud risk prevention strategies and non-financial performance of MFBs in Kenya. The implication is that MFBs which embrace fraud risk prevention strategies are able to improve their non-financial performance. These results are aligned with the Fraud Triangle theory which argued that the commission of fraud can lead to reduced organisational performance, thus strategies that prevent the commission of fraud will lead to improved organisational performance. Additionally, given that fraud prevention strategies include structural mechanisms, it can be argued that there a congruence with the Institutional theory. These findings are consistent with Meiryani et al. (2021); Agwor (2017); and Kimathi (2018) but contradicted the findings of: Bell (2017) who found that MFBs in certain jurisdictions encounter debilitating challenges including complicated legal issues, poor infrastructure, deficiencies in training, and misaligned organisational structures which limit the effectiveness of fraud detection; Mukiti (2013) who found that many MFBs were resource constrained and so were unable to carry out regular fraud risk monitoring; and Njuguna *et al.* (2017) who established that smaller less-resourced MFBs were unable to conduct comprehensive fraud risk prevention owing to the lack of a proper fraud risk management plan.

5.2.3 Fraud Risk Detection Strategies and Non-Financial Performance of MFBs

The findings pertaining to the descriptive statistics of Fraud Risk Detection Strategies are presented in Table 4.7. According to the findings, the majority of those who responded agreed that the fraud risk detection mechanisms that had been instituted had enabled faster and more frequent identification of potential fraud risk. This indicated that the majority were in agreement with the statement which confirmed the findings of Chelangat (2014). Additionally,

most of those who participated felt a moderate extent that the improved fraud detection expertise of fraud inspectors owing to the extra training that they had undergone had enabled them to identify fraud risk early and take the necessary action. This showed that there was only a moderately positive endorsement of the statement among the respondents which partially affirmed the findings of Githecha (2013).

Further, there was a low level of agreement among those who participated that there was a high incidence of fraud amongst the mobile money system operators owing to a lack of understanding of fraud risk assessment which made them vulnerable to attack by fraudsters. This contradicted the findings of Matsoro (2020). Lastly, majority of those who participated did not agree that the MFB had majorly instituted financial accountability through the adoption of audit efficiency and fraud detection where emphasis was made on the regular conduct of fraud risk assessments. This contradicted the findings of Linus and Wamugo (2022).

The study established a positive and significant correlation between fraud risk detection and non-financial performance of MFBs in Kenya. The implication is that MFBs which are able to adopt appropriate fraud risk detection are able to improve their non-financial performance. These results are aligned with the Fraud Triangle theory which argued that the commission of fraud can lead to reduced organisational performance, thus strategies that detect the commission of fraud will lead to improved organisational performance. Additionally, given that fraud detection strategies include structural mechanisms, it can be argued that there a congruence with the Institutional theory. These results are consistent with Chelangat (2014); Githecha (2013); and Matsoro (2020), but they were inconsistent with the findings of: Ndurumo and Kihara (2016) who found that technical and financial challenges were at the heart of the inability of many MFBs to effectively implement fraud risk detection practices; Kabue (2015) established that specialised training in fraud risk detection was only possible in larger more financially resourced MFBs; and Shaikh *et al.* (2022) who determined that advances in digital security protocols had enabled improved fraud risk detection and prevention amongst mobile financial service providers.

5.2.4 Fraud Risk Mitigation Strategies and Non-Financial Performance of MFBs

The findings of the descriptive statistics of Fraud Risk Mitigation Strategies are presented in Table 4.8. Accordingly, there was a fairly strong level of agreement among those that

participated that the fraud risk mitigation measures that were employed included the vetting of new employees prior to hiring them so as to establish their performance history and avoid hiring potential fraudsters. This corroborated the findings of Sadique *et al*. (2019). Additionally, there was a fairly good level of agreement amongst those who participated that profitability and debt positions of the company are impacted by its fraud mitigation level. This confirmed the findings of Birol (2019).

Further, most of those who participated were in agreement with the statement that the organisation has employed fraud risk management strategies such as the provision of continuous anti-fraud training of MFB personnel. This was aligned with the findings of Boateng *et al.* (2014). Lastly, there was a marginal level of agreement amongst the majority of those who participated that the organization has established an enabling environment for trust that engenders confidence by employees to act as whistle blowers of fraud. This partially affirmed the findings of Boateng *et al.* (2014).

The study found that there was a positive and significant correlation between fraud risk mitigation strategies and non-financial performance of MFBs in Kenya. The implication is that MFBs which have instituted fraud risk mitigation strategies are more inclined to improve their non-financial performance. These results are aligned with the Fraud Triangle theory which argued that the commission of fraud can lead to reduced organisational performance, thus strategies that mitigate against the adverse effects of the commission of fraud will lead to improved organisational performance. Additionally, given that fraud mitigation strategies include structural mechanisms, it can be argued that there a congruence with the Institutional theory. This is consistent with Sadique et al. (2019); Birol (2019); and Dzomira (2015). However, it contrasted with: Boateng (2014) who found that one aspect of fraud risk mitigation that MFBs had been unable to address was the proliferation of new fraud schemes due to their inability to keep updating their knowledge on fraud risk management; and Abi *et al.* (2018) who established that many MFBs had failed to institutionalise effective fraud risk mitigation strategies owing to resource constraints.

5.3 Conclusions

The MFBs have adopted a number of effective fraud deterrence strategies including the use of fraud detection tools, preventive and control strategies, and fraud investigation and detection.

Fraud prevention strategies at the various MFBs have also been relatively successful particularly: well-established and frequent risk monitoring; and training of employees in fraud risk management. However, more clarity is needed in establishing whether the fraud risk prevention strategies are stringent enough.

There was only a marginal level of investment in training of employees in fraud risk management by the majority of MFBs. There was also a general consensus amongst the participants that the more stringent fraud prevention measures are, the more likely the firm is to experience greater growth in terms of profitability. Well-established and frequent risk monitoring had enabled MFBs to prevent major occurrences of fraud risk events. The MFBs have established and executed a fraud risk management plan which was an indicator of the strong commitment by the senior management and board members to high and ethical standards pertaining to risk prevention management.

Fraud risk detection mechanisms that had been instituted had enabled faster and more frequent identification of potential fraud risk by the MFBs. The improved fraud detection expertise of fraud inspectors owing to the extra training that they had undergone had enabled them to identify fraud risk early and take the necessary action. There was a lack of consensus amongst the majority of respondents regarding whether there is a high incidence of fraud amongst the mobile money system operators owing to a lack of understanding of fraud risk assessment which made them vulnerable to attack by fraudsters. The MFB had majorly failed to institute financial accountability through the adoption of audit efficiency and fraud detection where emphasis was made on the regular conduct of fraud risk assessments.

The fraud risk mitigation measures that were employed by the MFBs included the vetting of new employees prior to hiring them so as to establish their performance history and avoid hiring potential fraudsters. The profitability and debt positions of the MFBs are impacted by the fraud mitigation level. The MFBs have employed fraud risk management strategies such as the provision of continuous anti-fraud training of MFB personnel. There was only a moderate level of consensus amongst the respondents that the MFBs had established an enabling environment for trust that engenders confidence by employees to act as whistle blowers of fraud.

The MFBs have adopted internal business processes as one of the non-financial performance metrics. The non-financial performance metrics adopted the MFB included strategic alignment

and integration. The MFBs have instituted the customer experience dimension which included indicators such as customer satisfaction and retention rate. The strategic innovation orientation enabled the enhancement of the product and service offering of the MFBs.

Given that the results have highlighted the need for capacity by the MFBs to carry out the various fraud risk management strategies, it clear that the most appropriate theory that underpins this study is the fraud Diamond theory. Additionally, the institutional theory provides the structural foundation for the effective establishment of all the examined fraud risk management strategies.

Both the Fraud Triangle theory and the Institutional theory were validated by the results for each objective.

5.4 Recommendations

5.4.1 Policy Recommendations

The MFBs can ensure effective fraud risk deterrence by instituting punitive penalties for staff who are caught engaging in fraud. Additionally, the study recommends enhancing fraud risk prevention strategies by formulating clear and specific fraud prevention policies and procedures tailored to the unique risks and needs of each MFB. These policies should define acceptable conduct, reporting mechanisms, and the consequences of fraudulent behavior. MFBs should ensure that all employees are informed about and understand these policies through regular training and communication. MFBs need to establish an enabling environment for trust that engenders confidence by employees to act as whistle blowers of fraud by ensuring the formulation and implementation of accountability policies that protect whistle blowers from victimisation, subsequent discrimination or disadvantage in addition to the companies' complaints or grievance procedures.

5.4.2 Managerial Recommendations for Practitioners

MFBs should invest more resources in training of employees in fraud risk management such as the enrolment of managers on risk management training so that they can come and train the subordinate employees as a cost-cutting mechanism. MFBs need to invest in more robust delinquency detection mechanisms so as to minimise the recurrence of fraud commission by

loan officers. More effective fraud risk mitigation strategies should be employed including monitoring of the rate of insurance claims, falling of staff productivity, and the identification of lower portfolio quality.

5.4.3 Implications for Academia and Research

The findings have underscored the importance of fraud risk management in MFBs as a research subject given the increased likelihood of commission of fraud and the widening scope for the prevalence of fraud in MFBs. More specifically, the four fraud risk management strategies are only part of the available fraud risk management strategies so there is still scope for further development of the body of knowledge.

5.5 Suggestions for Further Studies

This study has only investigated fraud risk deterrence strategies, fraud risk prevention strategies, fraud risk detection strategies and fraud risk mitigation strategies, this is by no means exhaustive in terms of fraud risk management strategies, so the study recommends that further research be conducted on other fraud risk management strategies.

Additionally, the indicators under each variable are not exhaustive, so there is still scope for identifying other indicators. The study also limited itself to 13 licensed MFBs, there are still many more MFBs that can be examined in terms of the relationship of the study variables.

5.6 Limitations of the Study

In attempting to achieve its research objectives, the study encountered the following limitations. Firstly, some of the respondents were unwilling to participate in the study. To mitigate against this, the researcher provided the assurance that this study was only for academic purposes. Secondly, the study was restricted to 13 licensed MFBs. To mitigate against this, the researcher recommends that further research be conducted on unlicensed MFBs in order to determine whether the findings will be different using the same constructs. Thirdly, the study also limited itself to the four fraud risk management strategies. To mitigate against this, further research should be conducted on other fraud risk management strategies.

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APPENDIX

Appendix I: QUESTIONNAIRE

INSTRUCTIONS:

Please answer the following questions by placing a mark (✓) or (x) in the appropriate boxes.

SECTION A: GENERAL INFORMATION

1. Gender

Male [ ] Female [ ]

2. Age

Between 18-25 [ ] Between 26-35 [ ]

Between 36-45 [ ] 46 & above [ ]

3. Highest level of education attained.

Primary [ ] Secondary [ ]

College [ ] University [ ]

4. How long have you been in this position?

Less than 1 year [ ] 1 - 5 years [ ]

6 – 10 years [ ] Above 10 years [ ]

5. What is your role in the organization? (You can mark more than one answer)

Finance [ ] Accounting [ ]

Auditing [ ] Operations [ ]

Administration [ ] Sales and marketing [ ]

Human resources [ ] Risk and compliance [ ]

ICT [ ] Other roles (specify)……

SECTION B: FRAUD RISK DETERRENCE STRATEGIES

To what extent do you think the following statements concerning **FRAUD RISK DETERRENCE STRATEGIES** apply to your organization? Tick as appropriate using the following Likert scale of 1-5 where: 1= No Extent; 2= Little Extent; 3= Moderate Extent; 4= Great Extent; 5=Very Great Extent.

		Respondents Ratings				
	Statements	**1**	**2**	**3**	**4**	**5**
1	Good or bad financial performance of a company is influenced by cases of fraud that occur in the company if fraud is not detected.					
2	Preventive and control strategies that had been adopted by the organisation were successful in reducing the occurrence of fraud.					
3	Fraud investigation and detection significantly influence internal audit quality in the organisation.					
4	Using tools to detect and prevent job fraud and fraud reduction are effective fraud risk deterrence strategies.					

SECTION C: FRAUD RISK PREVENTION STRATEGIES

To what extent do you think the following statements concerning **FRAUD RISK PREVENTION STRATEGIES** apply to your organization? Tick as appropriate using the following Likert scale of 1-5 where: 1= No Extent; 2= Little Extent; 3= Moderate Extent; 4= Great Extent; 5=Very Great Extent.

		Respondents Ratings				
	Statements	**1**	**2**	**3**	**4**	**5**
1	The company has invested in the training of employees in fraud risk management.					
2	The more stringent fraud prevention measures are, the more likely the firm is to experience greater growth in terms of profitability.					
3	Thanks to well-established and frequent risk monitoring, the organisation was able to prevent major occurrence of fraud risk events.					
4	The organisation had established and executed a fraud risk management plan which was an indicator of the strong commitment by the senior management and board members to high and ethical standards pertaining to risk prevention management.					

SECTION D: FRAUD RISK DETECTION STRATEGIES

To what extent do you think the following statements concerning **FRAUD RISK DETECTION STRATEGIES** apply to your organization? Tick as appropriate using the following Likert scale of 1-5 where: 1= No Extent; 2= Little Extent; 3= Moderate Extent; 4= Great Extent; 5=Very Great Extent.

		Respondents Ratings				
	Statements	**1**	**2**	**3**	**4**	**5**

1	The fraud risk detection mechanisms that had been instituted had enabled faster and more frequent identification of potential fraud risk.					
2	The improved fraud detection expertise of fraud inspectors owing to the extra training that they had undergone had enabled them to identify fraud risk early and take the necessary action.					
3	There was a high incidence of fraud amongst the mobile money system operators owing to a lack of understanding of fraud risk assessment which made them vulnerable to attack by fraudsters.					
4	The MFB had majorly instituted financial accountability through the adoption of audit efficiency and fraud detection where emphasis was made on the regular conduct of fraud risk assessments.					

SECTION E: FRAUD RISK MITIGATION STRATEGIES

To what extent do you think the following statements concerning **FRAUD RISK MITIGATION STRATEGIES** apply to your organization? Tick as appropriate using the following Likert scale of 1-5 where: 1= No Extent; 2= Little Extent; 3= Moderate Extent; 4= Great Extent; 5=Very Great Extent.

		Respondents Ratings				
	Statements	**1**	**2**	**3**	**4**	**5**
1	The fraud risk mitigation measures that were employed included the vetting of new employees prior to hiring them so as to establish their performance history and avoid hiring potential fraudsters.					

2	Profitability and debt positions of the company are impacted by its fraud mitigation level.					
3	The organisation has employed fraud risk management strategies such as the provision of continuous anti-fraud training of MFB personnel.					
4	The organization has established an enabling environment for trust that engenders confidence by employees to act as whistle blowers of fraud.					

SECTION C: NON-FINANCIAL PERFORMANCE OF MFBs

14. To what extent do you agree with the following statements concerning the non-financial performance of Microfinance banks? Using a scale of 1 to 5 where: 1= Strongly Disagree; 2= Disagree; 3= Not Sure; 4= Agree; 5=Strongly Agree.

	Statements	**Respondents Ratings**				
	Internal Operating Measures	**1**	**2**	**3**	**4**	**5**
1	The company has adopted internal business processes as one of the non-financial performance metrics.					
2	Additionally, employee oriented measures including training in fraud management have been adopted by the MFB.					
3	The MFB has instituted the customer experience dimension which included indicators such as customer satisfaction and retention rate.					
4	The MFB has experienced learning and growth opportunities.					

THANK YOU FOR PARTICIPATING

Appendix II: Licensed Microfinance Banks in Nairobi City County

MFBs	Number of employees in the MFB's Nairobi Office
1. Kenya Women Microfinance Bank Limited	138
2. Maisha Microfinance Bank Limited	22
3. Uwezo Microfinance Bank Limited	18
4. U & I Microfinance Bank Limited	23
5. Sumac Microfinance Bank Limited	40
6. SMEP Microfinance Bank Limited	260
7. Remu Microfinance Bank Limited	50
8. Rafiki Microfinance Bank Limited	170
9. Faulu Microfinance Bank Limited	900
10. Daraja Microfinance Bank Limited	16
11. Choice Microfinance Bank Limited	18
12. Century Microfinance Bank Limited	53
13. Caritas Microfinance Bank Limited	44
Total no. of Employees	**1752**

(Source: CBK, Directory of Licensed Microfinance Banks, 2021)

Appendix III: Budget

Description	Quantity	Unit Cost	Total Cost
Printing Letters	20	50	1,000.00
Pre-test Questionnaires	20	60	1,200.00
Final Questionnaires	198	60	11,880.00
Binding Reports	10	60	600.00
Data collection costs			40,000.00
Printing Reports	10	1,000.00	10,000.00
Internet costs	2	5,000.00	10,000.00
Transport costs	10	1000	10,000.00
Pilot study	10	1,500.00	15,000.00
Miscellaneous			30,000.00
TOTAL			**129,680.00**

Appendix IV: Summary of Literature and Research Gap

Table 2. 2: Summary of Literature and Research Gaps

Author	Findings	Research Gaps
Rohman et al. (2021)	The researchers also found that good corporate governance could minimize the influence of opportunity and rationalization on fraud, but good corporate governance strengthens the competence Impact on Fraud.	The study variables were limited to Corporate governance alone. The study also focused on a different context other than MFBs.
Tetteh et al. (2022)	The researchers found a significant relationship between internal control systems (control activity, control environment, information, and communication) and the company's performance, measured by its profitability.	The study used a Cross-Sectional survey design differs from the design this study intends to use. The study context also differs.
Birol (2019)	The results reveal that the new regulations about corporate governance principles and their applications in Turkey have not made the expected effect on fraud risk yet.	Based on its scope of Istanbul.
Amuna & Mouamer (2020)	There is a positive relationship between using tools to detect and prevent job fraud and fraud reduction at the MOH.	The study focused on other contexts other than MFBs which may not display the same results.

Jannopat, Phornlaphatrachakorn (2021)	The findings revealed that fraud investigation and detection have significantly influenced internal audit quality, accounting information transparency, and financial effectiveness.	The study focused only on fraud investigation strategy, not other strategies, which this strategy will review.
Ndurumo (2018)	Anti-fraud strategy affects the performance of selected Microfinance banks in Kenya to a great extent.	The study used different fraud management strategies other than those used by this study.
Kanana (2018)	The researcher found that anti-fraud policies, fraud deterrence, and fraud detection significantly impact the financial performance of the Nairobi-based NGOs.	The study's context differs significantly from the context of this study which means that the study's findings cannot be generalized to this study.
Muhunyo (2018)	The study established that the indicators of internal control systems, including; control environment, control activities, risk assessment, and information and communication, significantly influence the financial performance of the institutions of higher learning in Nairobi City County, Kenya.	The context of the study differs significantly from the context of this study in terms of operations, sectors, and other aspects; as such, the study's findings could not be generalized to this study.

Appendix V: Ethics Approval Letter

Strathmore UNIVERSITY

31st October 2023

Ms Wamboi Lucy Anita,
lucy.wamboi@strathmore.edu

Dear Ms Wamboi,

RE: The Effect of Fraud Risk Management Strategies on the Non-Financial Performance of Microfinance Institutions (MFI's) in Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC1883/23.** The approval period is from **31st October 2023 to 30th October 2024.**

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 72 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 72 hours.
v. Clearance for the 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 the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before 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,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

STRATHMORE UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE
(SU-ISERC)
31-Oct-2023
Email:ethicsreview@strathmore.edu
P.O BOX 59857-00200
NAIROBI-KENYA

Appendix VI: NACOSTI License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **176452**

Date of Issue: **09/November/2023**

RESEARCH LICENSE

This is to Certify that Miss.. Lucy Anita Wamboi of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: The Effect of Fraud Risk Management Strategies on the Non-Financial Performance of Microfinance Institutions (MFI's) in Kenya for the period ending : 09/November/2024.

License No: **NACOSTI/P/23/31227**

176452

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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See overleaf for conditions