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**FRAUD RISK MANAGEMENT TECHNIQUES AND FINANCIAL PERFORMANCE:
THE CASE OF SAVINGS AND CREDIT COOPERATIVE
ORGANIZATIONS IN KENYA**

The background of the page features a large, light gray watermark of the Strathmore University crest. The crest is a shield-shaped emblem. At the top, there are three hearts. Below them, the name 'Muriuki Cicily Wangu' and the number '082659' are printed. The shield itself is divided into four quadrants: the top-left contains a rose, the top-right contains a lion, the bottom-left contains a book, and the bottom-right contains a cross. Below the shield is a ribbon banner with the Latin motto 'VT OMNES VNVM SINT'.

Submitted to Strathmore University Business School in partial fulfillment of the requirements for the award of a Masters of Commerce (MCOM) Degree

**Strathmore University Business School
Strathmore University
Nairobi, Kenya**

November, 2021

DECLARATION AND APPROVAL

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis/dissertation (use as appropriate) contains no material previously published or written by another person except where due reference is made in the thesis/dissertation itself.

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LIST OF ABBREVIATION

NIM: Net Interest Margin

ROA: Return of Assets

ROE: Return on Equity

SACCO: Savings and Credit Cooperative Societies.



ABSTRACT

According to Duffield and Grabosky (2011), fraud is a deceptive act that involves the deliberate distortion of the truth or the false representation or concealment of a material fact in order to gain an unfair benefit over some other in an effort to achieve something of cost or deprive a person else of their right. The objective of the study was to investigate the effect of fraud risk management techniques on financial performance of SACCOS in Kenya. The research aimed to identify the three aspects fraud risk management techniques which include preventive, detective and responsive techniques. The researcher used descriptive research design under the positivism research philosophy. Questionnaires were employed to collect data from a sample of 545 SACCOS, 176 deposit taking saccos and 370 Non-deposit taking SACCOS. The study collected quantitative data and analyzed it using descriptive analysis methods. Inferential statistics such as correlation and regression analysis were used to show the relationship between the dependent and independent variables. The three independent variables explain 77.6% variations in financial performance. The study demonstrates a great reliance on fraud risk management techniques to curb fraud occurrence. The majority agree that applying fraud risk management techniques, controls, monitoring, and reporting supports faster fraud prevention and detection. The study's findings are that most fraud risk management techniques are believed to be closely and positively related to the competitive advantage of Non-Deposit and Deposit SACCOs in Kenya. These findings have a positive impact on the fraud lifecycle theory. Fraud in SACCOS has reduced in Deposit taking SACCOs suspected fraud is at 7.3% while Non-Deposit taking SACCOs which is at 3.8% showing financial performance has improved since in the past couple of years. In line with the important findings of the study, recommendations for policy and practice were made. Non-Deposit and Deposit SACCOs rely heavily on applied fraud risk management techniques, which they have put in place following worldwide best practices.

CHAPTER ONE: INTRODUCTION

The chapter presents a detailed background to the study and the link connecting the fraud risk management techniques and financial performance on Savings and Credit Cooperative Societies in Kenya. It is divided into sub-sections that include background to the study, problem statement, research objectives, scope of the study and significance of the study.

1.1 Background to the Study

All companies are vulnerable to fraud. Large frauds have resulted in the demise of whole enterprises, large investment losses, substantial legal expenditures, the imprisonment of important persons, and a loss of faith in financial markets. The reputations, brands and appearances of numerous corporations worldwide have been affected by publicized fraudulent behavior by key managers. According to the PKF Report(2015), The Financial Cost of Fraud, the real financial impact of fraud and error average damages were 5.47 percent of spending (Green, 2015). According to the Association of Certified Fraud Examiners (ACFE)(2017) annual fraud survey report, fraud costs businesses 5% of their sales. According to Wanjohi (2015), there has been an upsurge in reported fraud in East Africa. According to the Deloitte 2013 Financial Crimes Survey report, the rise in reported fraud in East Africa is attributed to financial institutions' inability to implement high-tech controls that match the type of innovative products put on the market. Such mistakes have cost Kenyan financial institutions more than US\$ 10 million each year.

Saccos are divided into two Deposit taking and Non Deposit taking Saccos. Deposit taking Saccos are under the regulatory board called SASRA while the Non Deposit taking are regulated by Ministry of Trade, Industry and Cooperatives.

The SACCOs had the highest number of fraud cases analysed at 17.8%. Unfortunately, there was an exponential increase in the proportion of investments classified as “other assets” which increased from Kshs 6.52 Billion in 2018 to Kshs 15.86 Billion in 2019 and accounted for 33.57% of the total PPE portfolio. The classification of assets as “other assets” in the financial statements of SACCOs have the potential of exposing SACCOs to such risks like fraudulent activities in relation to such “other assets” (SASRA S. S., 2019).

Banturaki (2012) provided that frauds such as corruption, embezzlement, and stealing of assets have resulted into high administrative costs that are detrimental to the growth of SACCOS. Fraud arises from many sources, but in particular from manual bookkeeping manipulation of entries, such as phantom withdrawals or non-crediting of customers who secure their loans and pocket the money. The absence or lack of robust internal control system in many SACCOS has made it easier for unfaithful executives and employees to abuse SACCO funds. Gakenia (2013) notes that SACCOS in Kenya needs to strengthen its internal control systems to improve economic impact / profitability and avoid losses, which can help SACCO's managers and employees comply with laws and regulations and damage its reputation and other consequences, in short, it can help SACCOS to achieve its goal, to minimize risks and to keep its members satisfied.

In Kenya, the Centre for Corporate Governance in Liaison with the Ministry of Co-operative Development and Marketing (2008) has developed guidelines that must be adhered to in the management of co-operatives with regard to specific key areas to enhance performance. For example, have regular and timely elections and allow members to participate without interference; maintain up to date and accurate records of the organizations and ensure audited accounts are presented and read to members on time and members allowed to deliberate and resolve on them among others.

1.1.1 Fraud Risk Management Techniques

The term "fraud" is derived from the Latin *fraus*, which means "deception." It is a common law word for which no detailed definition exists. The most instructive definition is provided by the New Century Dictionary (1953) as "deceit or deception purposefully used in order to achieve some benefit or end unjustly, dishonestly, or to the disadvantage of another's right or interest." According to Black's Law Dictionary, fraud in general consists of any deceptive conduct or intentional artifice used with the aim to deprive someone of his right or to injure him in some way. According to Duffield and Grabosky (2011), fraud is a deceptive act that involves the deliberate distortion of the truth or the false representation or concealment of a material fact in order to gain an unfair benefit over some other in an effort to achieve something of cost or deprive a person else of their right. It occurs when an offender delivers misleading claims with the intent of defrauding a victim of belongings or something valued (Vasiu & Vasiu, 2004).

Fraud risk management refers to the processes and procedures used to observe an organization's fraud risk, according to the Malaysian Fraud Survey Report (2015). KPMG, Fraud risk management approaches can therefore be roughly classified as preventative, detective, and response fraud management approaches.

Fraud risk management techniques need to be embedded in an organization's DNA in the form of written policies, defined responsibilities, and on-going procedures that implement an effective program (Green, 2015). There needs to be a clear role for the Board and top management in setting these policies with reporting in place to convey the required information about the program and its performance to them. The tone from the top will be reflected in the perception of fraud prevention and detection throughout the organization (Henry, 2012).

Preventive controls are intended to reduce incentive and limit prospective offenders' opportunity to streamline or rationalize their actions (Anyanwu, 2018). Controls, monitoring, and reporting promote faster detection of fraud. The discovery of fraud may point to continuing fraud or to already occurring violations. Such schemes may be unaffected by the implementation of preventive mechanisms, and even if the fraudsters are thwarted in the future, recovery of prior losses is only feasible through fraud detection (Coenen, 2008). However, the potential recovery of damages is not the main goal of a detection program, and fraudulent behavior should not be ignored simply just because losses cannot be recovered. The detection of fraud also enables enhancement of internal controls. Many fraudsters take advantage of flaws in the control systems. By identifying such flaws, regulations can be increased and potential criminals find it more difficult to take action (Ball, 2009). Responsive techniques of fraud management are designed to correct and address the harm resulting from fraud.

Fraud risk management techniques may be one of the most effective and efficient ways to reduce and prevent fraudulent activities as it is concerned with the evidentiary nature of accounting data, and as a practical field concerned with accounting fraud and forensic auditing; compliance, due diligence and risk assessment; detection of financial misrepresentation and financial statement fraud (Skousen and Wright, 2018).

According to Kinyua (2011), Internal audit provides the CEO/Board of Internal Audit with the assurance that the financial and operational controls designed to manage the risk of the entity and achieve the entity's objectives are operated efficiently, effectively and ethically. In particular,

internal audit can help a company fight fraud by offering advice on fraud risk, offering guidance on how to design appropriate internal controls to reduce the likelihood of fraud, and helping management develop fraud prevention and monitoring programs. The internal audit plan should include an assessment of the fraud controls aimed at addressing an entity's key fraud risks.

1.1.2 Financial Performance of SACCOS

According to Sollenberg and Anderson (2010), the efficiency with which resources are employed to fulfill a company's goals determines its success. There are three main scenarios that may be used to characterize a company's financial condition. It can be profitable; it can break even or it can run at loss. In most situations, the objective of an organization is to earn a profit. Profit is the ultimate goal of Savings and Credit Cooperative Societies. To measure the profitability of Savings and Credit Cooperative Societies, a range of ratios are utilized, the most significant of which are ROA, ROE AND NIM, a class (Murthy & Sree, 2003). ROA represents an institution's ability to profit from its assets. It indicates how efficiently the firm's resources are used to produce revenue. A growing trend on ROA is an indication that the financial performance of the institution is rising. A declining trend, on the other hand, indicates that financial performance is deteriorating (Crosson, JrNeedles, Needles, & Powers, 2008).

Githecha (2014), in his research on the influence of fraud risk management techniques on the financial performance of financial institutions, adopted the alternative hypothesis that methods of fraud risk management influence the financial performance of financial institutions in Kenya. The correlation study revealed that technology adoption had the most powerful positive Pearson correlation coefficient effect on the economic outcomes of commercial financial institutions. Furthermore, both governance and regulation were found to be positively connected to the financial repercussions of financial institutions as assessed by ROA.

Kuria and Moronge (2013) found in their study on the influence of fraud management measures on the growth of Kenyan insurance businesses that technology and governance, when used as a control mechanism, had a significant impact on the growth of insurance firms. The outcomes of their examine additionally confirmed that though regulating the enterprise is a noble intention as far as increase of the enterprise is concerned, it could now no longer be a prime consideration (Kuria and Moronge, 2013). Other underlying causes may come into play when it comes to the

expansion of insurance companies. Their research revealed no link between insurance business regulation and fraud risk management strategies in the sector. According to independent studies done by KPMG and EY in 2006, organizations that employ companywide fraud awareness training reduce fraud losses by 52%. According to the survey, companies are spending more time and resources on fraud management, with an emphasis on detecting and reporting fraud in general (Coenen, 2008).

Effectively managing loan default risk in financial establishments is crucial to their survival and growth (Majid, 2003). The issue of loan default is of even greater concern in the case of SACCOs due to the increased levels of perceived risk coming from some of the features of clients and business situations in which they find themselves (Maina, 2016). SACCOs, in addition to giving loans and offering investment financial services, are in the industry of protecting money and other assets for their members (Murungu, 2012). The main source of income for SACCOs is lending to members. However, both the lender and the borrower face significant risks as a result of this transaction. The possibility of a member failing to fulfill his or her contractual obligations on the due date or at any point subsequently can undermine the smooth operation of a SACCO's operations. A member's risk of failing to comply with the contract's obligations on or beyond a due date may considerably compromise the smooth operation of a SACCO operation. A SACCO with a high credit risk, on the other hand, has a significant bankruptcy risk, putting members' assets in danger and finally leading to disaster (Muriithi, 2012). If there is a lack of effective control by regulators such as SASRA, there is a high danger and impact on SACCO activities. Loan delinquency management risk is one of the hazards that SACCOs face. This is a major source of worry for most SACCOs and Government Regulators. (Kamonjo, 2014).

An institution having good asset quality, strong earnings and sufficient capital may fail if it is not maintaining adequate liquidity. That is why management of liquidity risk has become one of major success factors. In order to capture the benefits that well-organized financial system can bring, institutions have to be able to control their stability and manage risks (Crowe, 2009). In the SACCO subsector, liquidity risk management is an integral part of the overall risk management framework (Majid, 2003). As financial institutions, SACCO ought to manage the demand and supply of liquidity in an applicable manner so as to securely run their business, maintain smart relationships with the stakeholders and avoid liquidity problem. Well-managed SACCOs should

have a well-defined mechanism for the identification, measurement, monitoring and mitigation of liquidity risk. A well-established system helps the SACCOs in timely recognition of the sources of liquidity risk to avoid losses in both cases – undervalued liquidity risk and overvalued liquidity risk (Ismal, 2010).

According to Shimane (2010), the challenges that affect the growth of SACCOs in Kenya included among other things, mismanagement due to lack of adequate control and good governance, members' apathy resulting in lack of commitment to attend meetings that are critical for decision making, and competition from other financial institutions. These challenges limit co-operatives' ability to contribute to country's economic development. In the above context, an evaluation of the operational performance of selected SACCOs with a view of assessing their viability as vehicles of economic growth in Kenya proves relevant and important. While much research has been carried out in other parts of Africa on SACCOs and their operations performance (Nyambere, 2013; Miriti, 2014; Kiaritha, 2015).

1.2 Problem statement

It has been claimed by some researchers that some firms globally have collapsed due to fraudulent activities perpetrated by management and employees. Kroll (2013) reports that 70 percent of enterprises experienced at least one sort of fraud due to lack of fraud risk management techniques. This was up from the previous 61% in the year 2012. International studies have been done on fraud risk management techniques. Murray (2013) conducted research on many areas of fraud, control, and inquiry; Glover and Aono(2015) conducted research on modifying the model for fraud prevention and detection; Bishop(2014) investigated what works and what doesn't when it comes to preventing, discouraging, and detecting fraud; Holtfreter, (2010) studied on fraud in US organizations: an examination of control mechanisms; Wright (2017) examined the establishment of practical methods to reduce the risk of harm from financially motivated criminal fraud; Abiola and Idowu (2015) conducted an investigation into a fraud assessment and its management at Nigeria Commercial Bank; and Lanoue (2015) conducted a research on reducing fraud loss among Canadian enterprises.

Recent local studies in the Kenyan context carried out on the same include; Wanjohi (2015) established that fraud risk management techniques is important in reducing the audit expectation

gap. Kimani (2011) looked at fraud risk assessment plan for Barclays banks of Kenya. He found out that fraud risk assessment provided a comprehensive step by step model that could be utilized in preventing further fraudulent activities. Gakenia (2013) examine at the role of forensic accounting in combating the shortage of fraud examiners and established that knowledge of forensic accounting in Kenya can reduce corporate fraud and mismanagement. Although some studies have been done on the concept of fraud risk management techniques, none of them has focused on the effect of fraud risk management techniques on financial performance of Saccos in Kenya hence making this study justifiable as it is to address if such applications have an impact on fraud prevention and detection.

In his study Odhiambo (2013) concluded that most non deposit taking Saccos in Kenya have been grappling with the challenge of funds mismanagement from the its management team. As a result, members have been left decrying the kind of leaders they have entrusted with their funds. Misappropriation and embezzlement occur in several ways including unauthorized withdrawal, fraudulent funds transfer and even improper accounting practices.

According to Akinyomi (2012), another kind of fraud is stealing and embezzlement, which include the illicit acquisition of financial objects such as cash and traveler's cheques. In Kenya, directors have transferred money from Sacco accounts into their business accounts and claim to have obtained loans while others supply "air" to the Saccos and are paid huge sums leading to loss of cash (Muriuki, 2013). Recently, there has been a case reported where Saccos members of Busia Agricultural Training Centre stormed the Sacco offices and demanded for all their contributions. The agitated members accused the Sacco leadership of funds embezzlement and lack of accountability.

None of the above reviewed studies focused on the effect of fraud risk management techniques on financial performance of saccos in Kenya. Studies on fraud risk management methods have concentrated on fraud management strategies without tying them to financial performance. However, few studies have been conducted on the impact of fraud risk management methods on a firm's financial performance. This research intends to fill a gap in the literature by investigating the relationship of fraud risk management approaches and financial performance of Saccos in Kenya. As a result, this study will fill a gap in the literature by answering the following research

question: "What is the effect of fraud risk management approaches on financial performance of SACCOs in Kenya?"

1.3 Objective of the study

1.3.1 General objective

The objective of this study was to investigate the effect of fraud risk management techniques on Financial Performance of SACCOs in Kenya.

1.3.2 Specific Objectives

- i. To investigate effects of preventive fraud risk management techniques on financial performance in SACCOS in Kenya.
- ii. To investigate effects of detective fraud risk management techniques on financial performance in SACCOS in Kenya.
- iii. To investigate effects of responsive fraud risk management techniques financial performance in SACCOs in Kenya.

1.4 Research Questions

This research proposed to consider the following research questions:

- i. What is the effect of preventive fraud management techniques on financial performance of SACCOS in Kenya?
- ii. What is the effect of detective fraud management techniques on financial performance of SACCOS in Kenya?
- iii. What is the effect of responsive fraud management techniques on financial performance of SACCOS in Kenya?

1.5 Scope of the study

The scope of the study was to find out the effects of fraud risk management techniques on financial performance among deposit and non-deposit taking SACCOs in Kenya. This will involve obtaining primary data on the fraud risk management techniques. The study will be conducted in Savings & Credit Cooperative Societies in Kenya. The study was conducted from October to November 2020.

1.6 Significance of the study

1.6.1 Management

This research will be beneficial to managers since it will investigate the increased efficiency associated with using various fraud risk management approaches. These findings may assist managers in prioritizing investment decisions about effective fraud risk management approaches in the setting of limited financial resources.

1.6.2 Investors

The study will be valuable to present and future investors who intend to participate in SACCOs since it will provide them with information of various fraud risk management approaches used in the business. Before placing their money into a certain venture, investors must thoroughly research all aspects of it.

1.6.3 Policy Makers

The study's findings will be of great interest to policymakers, notably SASRA, in their attempts to discourage, prevent, and, at worst-case scenario, discover fraud in a timely way, as the danger of fraud in Kenya may be reduced by following the proper processes. The regulator must be vigilant in order to ensure that all SACCOs establish proper controls and regulations, analyze their operation and efficacy, foster a positive workplace environment, and sustain an anti-fraud culture.

1.6.4 Other Researchers

Our findings will be useful to other academics because they will demonstrate the economic effects of fraud risk management approaches on Kenyan Saccos. The findings will also serve as the foundation for future research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter offered information from publications on subjects connected to the problem statement. It investigates what many researchers and publications have claimed regarding the implications of fraud risk management strategies on SACCO financial performance. This chapter is divided into the following main areas: theory review, empirical study review, Preventive fraud risk management techniques, Detective fraud risk management techniques, Responsive fraud risk management techniques and financial performance of Saccos.

2.2 Review of Theories

Effective management of the fraud management lifecycle starts with a common understanding or definition of the stages in the lifecycle. Without this awareness and understanding, fraud management professionals are unlikely to communicate effectively with each other, with their peers in other industries, and within their respective businesses. This study was founded on two theories, the fraud triangle theory and fraud management lifecycle, which explain how SACCOs are affected by fraud risk management techniques.

2.2.1 Fraud Management Lifecycle Theory

Wesley (2004) relates fraud management lifecycle to a network lifecycle. A lifecycle is defined by Webster's Dictionary as "a succession of stages in form and useful activity through which an organism goes between serial recurrences of a specific primary stage" while a network is defined as "an interconnected or interrelated chain, cluster, or system."

The life cycle of fraud management consists of eight stages: dissenting and detecting, mitigating, analyzing, policy-making, investigating and prosecuting. The hypothesis shows that all achievements and failures in fraud management are the climax of the final step of the lifecycle that is prosecution. Failures occur because the fraud was successful, while successes occur because the fraud was uncovered, the identification of a suspect who is apprehended and charges were brought. The prosecution stage comprises recovery of assets, criminal reparation and conviction with its corresponding disruptive value (Wesley 2004). The links between the different

stages or nodes in the fraud management network form the foundations of the fraud management lifecycle theory.

The theory is essential since Githecha (2013) clearly illustrates the steps of managing risk of fraud in a sequential manner. Furthermore, the theory demonstrates what institutional processes should be put in place to successfully manage fraud. However, the explanation does not explain the causes of fraud within the SACCO. This theory presupposes consistent cultural, regulatory, and technical applications in fraud control. This theory makes no effort to explain fraud management measures in situations where such systems and procedures fail. This theory assists to show the various techniques that have been implemented in SACCO and how effective they are.

2.2.2 The Fraud Triangle Theory

It is the most common theory of fraud. It was developed by Donald Cressey in 1971. According to Cressey, there are three factors which make people to commit fraud. These are: Perceived Pressure, Perceived Opportunity and Perceived Rationalization which make up a triangle. Cressey further describes that every fraud executor is confronted by perceived pressure either work related or personal. The pressures then motivate the individual to commit fraud to meet the expectations of the pressure at hand. The executor of fraud must then believe that he/she can commit fraud without being caught. The opportunity to commit fraud present itself through weak internal controls and inadequate punishment if found. The proposition of this theory is that fraud is perpetrated by individuals who are working for the organization who are able to realize the opportunity and take advantage of. The theory implies that fraud can be reduced significantly if the pressures, opportunities and rationalization of individuals are addressed by the organization.

This study is primarily based on this theory as a result of the fraud triangle theory is the formal study of decision making in which different parties must make decisions that may affect the interests of the other players. Governance in SACCO is a vital component that requires techniques and sensible decisions, because there are many players in the industry, each trying to outsmart the other for personal reasons. A company's goal is to increase shareholders' wealth while management is to maximize their wealth. Employees, on the other hand, can be involved without knowledge of this topic. In the end it will be a game. Dixit and Nalebuff (1960) point out that the theoretical concept always applies when the actions of several agents are interdependent. These

agents agree with the theory. These can be individuals, groups, companies or any combination of these. This theory fits in well with this study because in order for the industry to grow between all of these other stakeholders, there must be good governance. Dixit and Nalebuff (1960) clearly showed that finite games must always have a balance point at which all players choose the actions that work best for them given the choice of opponents.

2.3 Preventive Fraud Risk Management Techniques

Preventive risk management procedures are the strategies intended to first and foremost reduce fraud and misconduct. Examples include conducting a fraud risk assessment, establishing robust internal controls, a code of conduct and associated standards, worker and third-party due diligence, communication and training, and the implementation of regulations and processes.

According to Paul (2013) it is important to have a responsible person with adequate resources and access to top management running the program. This person should be charged with designing and evaluating the program, and for communicating it throughout the organization as appropriate. Since organizations vary greatly in complexity, inherent risk, and size, there is no one-size-fits-all program, but all programs will address issues such as: Roles and responsibilities, Fraud awareness, Conflict disclosure, Fraud risk assessment and On-going monitoring.

James (2011) asserts that the foundation for the prevention and detection of fraud is a structured risk assessment that addresses the actual risks faced by the organization as determined by its purpose, industry (products or services), complexity, scale, and exposure to network risks. The goal of the assessment is to determine the type, likelihood, and potential cost of risks in a traditional expected value framework. This allows the organization to tailor program efforts toward cost effective mitigation, which may include a greater or lesser toleration of a specific risk.

Assessing fraud risks necessarily involves looking at how employees including top management interact with the resources of the organization. Their incentives and opportunities compose one of the legs of the Fraud Triangle that is mostly determined by the organization itself. As such, the risk assessment effort has to be very clear and detailed about how controls, policies, and procedures interact with specific roles. It is important to note that the sources of these risks may be external as well as internal, especially in highly networked and data dependent operations (Green, 2015).

Khrawish (2014), argue that preventing fraud is far preferable to detecting it after the fact. In practice, the same systems and controls established to prevent fraud may help in detecting it (e.g., segregation of duties for a certain procedure may help boost the chances that someone will be in place to report potential fraud). Khrawish (2014) further asserts that prevention is rooted in a culture of fraud awareness, understanding common policies and procedures, a safe harbor for whistleblowers, and continuous communication about the importance of fraud prevention from the top on down. When everyone knows that fraud is possible and a serious problem for which the organization has developed detection mechanisms, it is less likely to occur.

According to Odera (2012), financial management problems specific to deposit taking SACCOs pose challenges not faced by many other forms of organizations. However, when a number of controls are brought to bear on the problems including; well-defined financial reporting procedures, internal controls, service adequacy, prudential management disciplines and external supervision, the problems can be overcome to produce a stable and balanced financial management hence preventing fraud from occurring.

SASRA that regulates deposit taking Saccos unfortunately has not put-up fraud risk management framework that can be used by Saccos but they have created rules and regulations that deter fraud from occurring. One regulation state that Saccos require to have an audit committee whose roles among the many includes ensuring that policies and control procedures are established and are sufficient to safeguard against fraud. Corporate governance plays a big role in every organization and SASRA has not only taken notice but created regulations around it to discourage top management from conducting fraudulent activities using their position in power. Regulations ensure there is a board of directors whose role is to ensure that there is a code of conduct and it is adhered to by all employees and third party if anyone violates the code of conduct, they commit a crime and are liable. The code of conduct has to be approved by the Authority. The board also ensures that the Sacco has an effective internal control system. Saccos are not allowed to employ any person who has been charged or convicted with a crime involving fraud, that also applies to them engaging with any business that has been charged with a fraud crime. Saccos are required to also have risk management policies and internal control systems (SASRA, 2010). In return their financial performance have been in a constant rise with a lower case of fraud reports.

The duty for preventing fraud is with each employee, seller, supplier, contractor, service provider, consultant or other agency engaged with the Company to ensure that fraudulent behavior is not committed in its own areas of activity/responsibility. Once they become aware of any fraud or suspect it, they must promptly report it in accordance with the method outlined in the memorandum of association (Kasum, 2016).

2.4 Detective Fraud Risk Management Techniques

As fraud prevention efforts may not deter all prospective criminals, companies should ensure that procedures are in place that will detect and report instances of fraud in a timely manner. That is accomplished through fraud detection. Methods of fraud detection are designed to discover fraud as soon as it takes place (Anyanwu, 2018). A fraud detection plan ought to include the usage of analytical and different techniques to identify abnormalities, as well as the implementation of reporting channels that allow for the transmission of suspected fraudulent activity. Key components of a robust fraud detection system would encompass exceptional reporting, data mining, trend analysis and a continuous risk assessment (Coenen, 2008). The key detection measures include a whistleblower policy, reports designed to highlight potential and common indicators of non-standard outcomes over time, and other controls that alert people to potential fraud. It goes without saying that installing these indicators will have no effect if they are not monitored. Creating information that does not get to the right person to take action is useless (James, 2011). One of the key elements in the initial planning for a fraud prevention program is to set up responsibilities and processes to ensure that timely information is reported to someone who can address a problem. These systems trigger responses that have strong legal implications, so one of the essential components is review for legal rights of affected parties and compliance with applicable law (Davis, 2014).

Non-Deposit taking Saccos use the cooperative societies act of 2008 which does not have a fraud risk management guideline or any regulations that in some way deter or detect fraud other than them performing audit which can only detect anomalies in the financial accounts but does not discourage fraudulent activities from occurring hence member can easily be defrauded although in April 2019 draft regulations was put out for stakeholders to comment on it but is yet to be enacted

2.5 Responsive Fraud Risk Management Techniques

Responsive techniques of fraud management are designed to correct and address the harm resulting from fraud. Due to the common nature of the various definitions reside in the areas of litigation services, accounting investigation and preparing court ready evidence all of which are of great importance to SACCOs. The forensic accountants draw conclusions, calculate values and identify irregular patterns or suspicious transactions by critically analyzing the financial data. It provides an accounting analysis to the court for dispute resolution in certain cases and it also provides the courts with explanation the fraud that has been committed (Adrian, 2019). This is the reason why fraud risk management techniques may play a vital role in detecting and reducing accounting frauds in SACCOs and as he says Jeyarathmm (2018), quality influences greater efficiency, higher productivity and high-quality goods and services. It means that less time is actually spent reworking and correcting mistakes that were committed earlier due to carelessness or negligence.

In each case where fraud is identified, Line Management should examine the adequacy of the current internal control environment, particularly those controls that have a direct impact on the fraud incidence, and determine the need for adjustments. Line Management of the division concerned is responsible for ensuring that the internal control environment is reviewed and that the suggestions resulting from this evaluation are implemented (Toby, 2010).

In an examination on the utilization of fraud risk management techniques in new item improvement, Ampomah (2018) found that the key drivers for new items advancement was to address fraud issues despite the fact that a competitive environment and the need to be inventive likewise contributed. In the process of fraud risk management techniques, there are some methodical advances to be taken. Each progression in the improvement procedure prompts and advises the following stage and gives a reality awakening that disconnects the establishment from ensuing issues (Wright et al, 2017). Appropriate administration is critical to facilitate these exercises to satisfy the ideal objective of what the new items or administrations bring to the table.

The economic repercussions of an organization and fraud risk management approaches are linked. This is due to the fact that a firm's economic effects are assessed by its ROA, deposits volume, and membership number. Idowu (2009) described fraud as a deliberate misrepresentation,

disguise or omission of the truth to deceive an individual or an organization that includes misappropriation, thefts or any attempt to rob, abuse or harm the bank's assets illegally.

Boards of Directors in SACCOs are empowered to make decisions they believe will benefit the organization (section 28 of the Co-operative Societies Act CAP 490). They must be held accountable and responsible for performance results.

2.6 Financial performance of fraud risk management techniques in Kenya

In 1979, the United States federal agencies created the CAMELS rating to study the overall health of financial institutions. Camel is an acronym that represents five components of performance, namely capital adequacy, asset quality, management quality, earnings quality and liquidity. Sufficient capital to cushion the shocks that financial institutions can experience (Nwankwo, 1991). Despite the fact that it is acknowledged to have a key role in reducing the frequency of SACCO failures and losses to stakeholders, the capital structure of SACCOs is not strictly controlled. According to Hardy and Patti (2001) and Nwankwo (1991), capital adequacy is a generally recognized important component in measuring and evaluating the performance of financial institutions. In 1990, the capital adequacy measuring ratio was implemented in the Nigerian financial institution. It is the capital-to-weighted-assets ratio of financial institutions (i.e., Tier 1 and Tier 2 capital). The financial institutions must meet the minimum requirements stipulated by the regulator.

The level of financial soundness and risk in a financial institution's assets, which include loans and investments, is referred to as asset quality. SACCOs' financial health deteriorates when the value of their assets erodes over time. Non-performing loans provide the greatest risk to SACCOs (Dang, 2011). The lower the ratio, the greater the performance of the SACCO (Sangmi and Nazir, 2010). A detailed examination of asset quality trends is a valuable technique of detecting asset quality trends as well as those that are likely to generate challenges for SACCOs (Ailkeli, 2008).

The quality of management is critical in deciding the future of SACCOs. The management oversees the SACCO's activities, controls loan quality, and must guarantee that the SACCO is profitable. Management capacity performance is usually qualitative and may be understood through subjective analysis of management systems, organizational culture, and control mechanisms, among alternative things. Management quality, on the other hand, may be quantified

using a variety of financial measurements. In this view, the amount of operational expenditures is determined by management quality, which in turn determines financial performance (Athanasoglou et al. 2015). The operational profit to income ratio is one of the ratios used to assess managerial quality (Rahman et al. in Ilhomovich, 2009, Sangmi and Nazir, 2010).

Liquidity refers to a SACCO's capacity to meet its commitments as it develops. According to Dang (2011), a sufficient amount of liquidity is favorably associated to the profitability of SACCOs. Adequate liquidity also enhances trust in the whole financial arrangement, therefore SACCOs must have adequate liquid assets to fulfil their commitments. Ilhomovich (2009) utilized the cash-to-deposit ratio to assess the liquidity of Malaysian SACCOs. The liquid assets to total assets ratio and the loans to deposits ratio are two more liquidity measures. However, according to research done in China and Malaysia, SACCO liquidity levels have no relationship with financial institution performance (Tumin & Mohd-Said, 2010).

Table 1.1 Financial performance trends of Deposit Taking SACCOS

Parameter	2017	Change in % (2017/18)	2018	Change in % (2018/19)	2019
No of Sacco	174		174		172
Financials	Kshs in billions		Kshs billions		Kshs billions
Total Assets	442.28	11.98%	495.25	12.41%	556.71
Total deposits	305.30	11.99%	341.91	11.27%	380.44
Gross loans	331.21	13.01%	374.29	12.09%	419.55
Allowance for loan loss	10.72	42.46%	15.27	26.95%	19.38

Net loans & advances	320.49	12.02%	359.02	11.46%	400.16
Capital reserve	72.33	15.80%	83.76	16.47%	97.55
Core capital	64.25	15.75%	74.37	6.49%	79.20

Source: The SACCO Supervision Annual Report (2019)

Fraud and company's financial performance are related (Green, 2015). This is because the financial performance of many Saccos is measured by Return on Assets, Volume of deposits and number of members. Fraud is defined as the intentional deception, concealment, or omission of the truth with the intent of deceiving an individual or an organization, and includes embezzlement, larceny, or any effort to rob or illegally gain, abuse, or destroy a SACCO's asset. In his study on the implications of fraud on firm performance, Nwankwo(2013) discovered a strong positive relationship between cheque clearing fraud and SACCO profitability, whereas Chiezey and Onu(2013) discovered that fraud and fraudulent activities cause severe difficulties for financial institutions and their customers.

According to SASRA report of 2019, the total assets portfolio crossed the half-trillion mark to reach Kshs 556.71 Billion representing a 12.41% increase from Kshs 495.25 Billion recorded in 2018. Total gross loans were 419.55 billion a percentage increase of 12.09%. In 2018, total SACCO assets reached at Kshs 495.25 billion, an increase of 11.97 percent from Kshs 442.27 billion in 2017. These total assets were mainly composed of loans and other credit advances which grew by 13% to reach Kshs 374.28 billion from Kshs 331.21 recorded in 2017. It is important to note that the rate of growth of total loans at 13%, slightly exceeded the rate of growth of the total deposits, which goes to show that there is a higher demand for loans in SACCOs than the rate of mobilization of deposits ((SASRA), 2019). The total number of saccos is 5000, with only 176 Deposit taking registered in SASRA and the rest 4824 are Non Deposit taking.

Deposit taking SACCOs in Kenya are those which perform front office services and act more like banks whilst non-depositing SACCOs receive money from the public through the manner of contribution and lend out cash to the members in form of credit, loan or advances. All non-deposit taking operate on the system of back-office activities (BOSA). This emphasizes the notion that

the primary function of SACCOs is to lend to its members. Economic repercussions of deposit-taking SACCOs are assessed by the SACCO's loan portfolio, member deposits, and members' trust in the Sacco. Financial ratios are also used to assess it. Return on Assets (ROA) ratios can be used to assess the SACCO's profitability. The ratio is calculated by dividing the SACCO's profits by its total assets. The report reinforces that SACCOs should be protected at all cost from fraudsters who would want to take advantage and get away with the assets in this sector (Kiaritha, 2015). In 2019 the return on assets percentage in saccos was 2.60% an increase from 2018 but the percentage in 2018 had dropped to 2.40% from 2.69% in 2017.

2.7 Summary of Literature

Olodi et al.(2014) focus at the causes, types, detection, and prevention of frauds and forgeries in the Nigerian banking system in their studies on Bank Frauds and Forgeries in Nigeria. Data collection from 81 branches of banking in the South-West were conducted through questionnaires. Their research has shown that the major element involved is the difficulty of an effective system of internal monitoring and strong adherence enforcement. They advised that banks establish a robust system of internal controls and implement strict compliance.

In his research on decreasing frauds in Canadian institutions, Dominic (2015) investigated the impact of various internal controls (along with hotlines, regular ethics (fraud) training, unexpected audits, internal and external audits, and background checks) on decreasing occupational fraud losses by victim companies. In his study, based on statistics from an occupational fraud record jointly authored by the Association of Certified Fraud Examiners (ACFE) and Peltier-Rivest, he carried out a multivariate regression analysis to assess the effectiveness of various internal controls on reducing fraud losses (2007). The statistics confirmed that when employed individually, hotlines, frequent ethical (fraud) training, surprise audits, and internal audits all lessen fraud losses. When allowing for the possible association among all internal controls, however, hotlines and unexpected audits were the only statistically relevant controls. Hotlines were related with a 54% decrease in median fraud losses, whereas unexpected audits were related with a 69% decrease in median losses.

In its 2014 Global Economic Crime Survey, which was performed between August 2013 and February 2014, WC classified the manner of fraud detection into three categories: corporation

controls, company culture, and coincidence. According to their research, 16 percent of Kenya participants believe that suspicious transaction reporting is still an effective means of detecting fraud, followed by 14 percent who believe that normal internal audits are effective, 13 percent who believe that fraud risk management is effective, and 14 percent who believe that external and internal tip offs are effective. According to the research, more focus should be focused on enhancing internal audit activities and conducting frequent fraud risk assessments as a means of early identification or prevention of economic crimes.

Kuria and Moronge, (2013) did a study with a focus on Kenyan insurance companies regarding the impact of the insurance fraud control mechanism on insurance growth. To achieve its objective, a descriptive research design was employed for the study. The data was mostly acquired from the business' claim managers and risk managers. The 49 insurance companies in Kenya were the target population. Due to the tiny size of the target population, a census was used. Questionnaires were employed as a data collection method. The analysis was carried out with the help of a spreadsheet tool, and the results have been provided in the shape of tables and charts. The study discovered that law had little impact on the improvement of the insurance sector and did not no longer help to lessen fraud. Technology and governance, on the opposite hand, have been used to combat insurance fraud, which not only decreased fraud however additionally boosted sector growth.

Githecha (2013) carried out study on the impact of fraud risk control strategies on Kenyan business banks' economic performance. He used a descriptive research approach in his study, and his target group included all 43 commercial banks. He drew on both primary and secondary sources of information. Microsoft Excel and SPSS were used for the analysis. The findings of this research revealed that fraud risk management measures had a favorable and statistically significant influence on the financial performance of Kenyan commercial banks. Legislative, governance, and technology adoption were favorably connected with financial performance, and fraud risk management strategies implemented by commercial banks explained 77.6 percent of the variance or change in financial results as evaluated by ROA.

Mbuguah (2013) discovers that the pressures that frequently encourage fraud are employee dissatisfaction, poor/lack of controls, and a lack of product expertise in his study on response tactics to fraud by Kenya's listed commercial banks. The survey also revealed that all banks

mentioned employed preventative, training, detection, prosecution, and investigative methods to handle the fraud threat. It was observed that law enforcement agencies play an essential role in fraud control. The study employed a descriptive research approach. A semi-structured questionnaire was used to collect raw data, while secondary data was collected through a study of reports from the Central Bank's Bank Fraud Investigation Department and a study of monthly reports submitted by listed firms.

2.8 Conceptual Framework

A conceptual framework is an analytical instrument that can be used to make conceptual distinctions and to arrange ideas with many variants and contexts. Strong conceptual frameworks capture something real and try this in manner that is simple to recall and practice (Robinson, 2009). However, if one variable depends upon or is a consequence of the other variable, it is termed as a dependent variable, and the variable that is antecedent to the dependent variable is termed as an independent variable (Kothari, 2004).

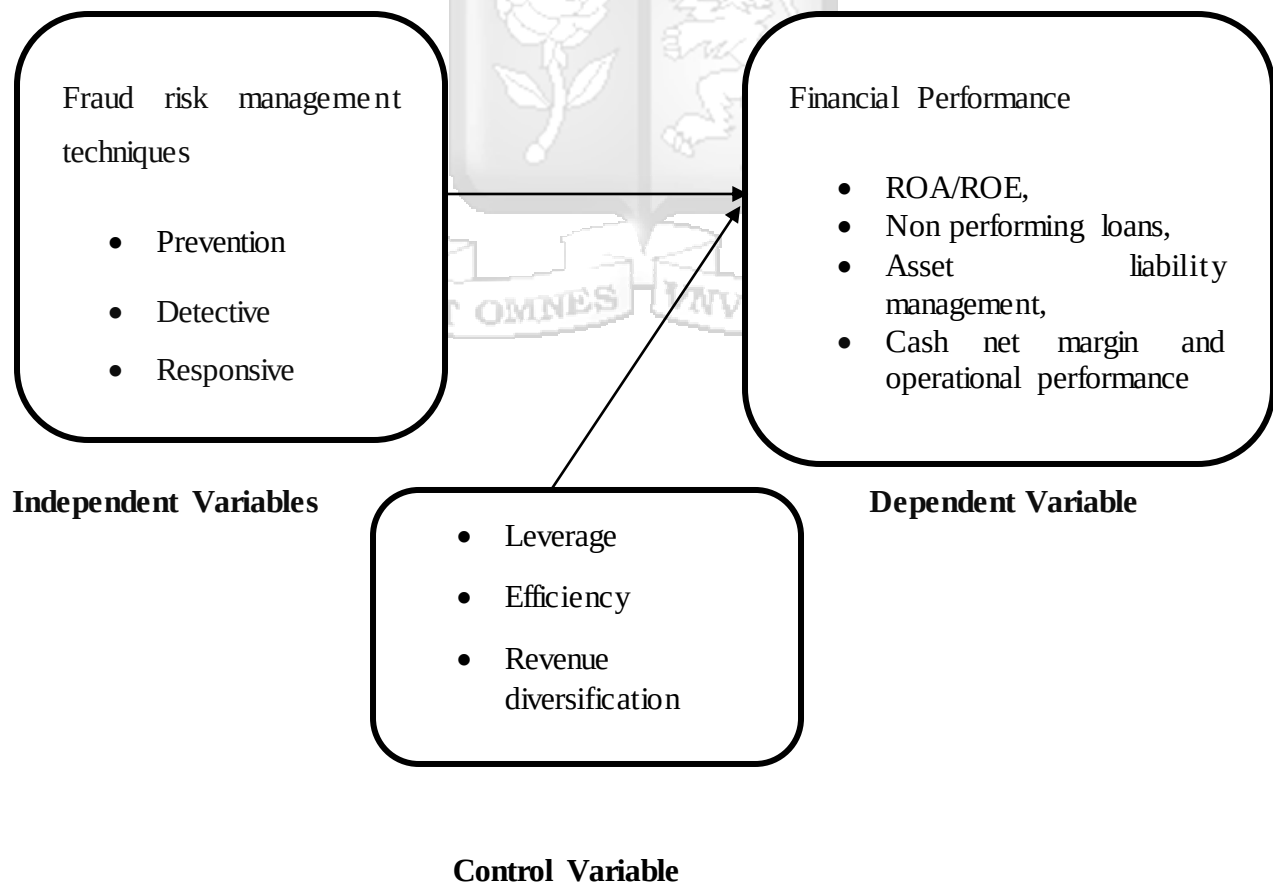


Figure 1: Conceptual Framework

2.8.1 Financial Performance

In this study, the financial performance is a dependent variable. It is a subjective assessment of how well a corporation can employ assets from its principal mode of operation to create revenues, which are mostly determined by the firm's total financial health during a specific period of time. It is measured using ROA/ROE, non-performing loans, asset liability management and cash net margin and operational performance. The economic implications that SACCOs face are becoming more severe by the day, and these problems are both internal and external. These economic repercussions are hindering many SACCOs from meeting the expectations of their members, which led them to establish SACCOs in the first place. The feasible impacts of such economic consequences are; inadequate delivery of financial services, loss members' money, members' low engagement and dedication, withdrawal of members who end up using services of other financial firms, failure compete, internal disputes, loss of SACCOS autonomy and excessive external reliance and a sense of lack of control and ownership among SACCOS members.

2.8.2 Fraud Risk Management Techniques

The independent variable in this study is fraud risk management techniques which is measured using its efficiency of prevention, detective and responsiveness. It is vital to an organization, large or small, to have a fraud risk management technique in place. The fraud cases studied in the ACFE 2014 Report revealed that the fraudulent activities studied lasted an average of 18 months before being detected. Imagine the type of loss your SACCOs could suffer with an employee committing fraud for a year and a half. Luckily, there are ways you can minimize fraud occurrences by implementing different fraud risk management technique. Internal controls are the plans and programs implemented to safeguard your firm's assets, ensure the integrity of its accounting records, and deter and detect fraud and theft. Documentation is another internal control that can help reduce fraud. In addition to prevention strategies, you should also have detection methods in place and make them visible to the employees. These plans take external information into consideration to link with internal data. The results of your fraud detection plans should enhance your prevention controls. It is important to document your fraud detection strategies including the individuals or teams responsible for each task. Once the final fraud detection plan has been

finalized, all employees should be made aware of the plan and how it will be implemented. Communicating this to employees is a prevention method in itself. Knowing the company is watching and will take disciplinary action can hinder employees' plans to commit fraud.

2.8.3 Control Variables

The control variables in this study include revenue diversification, efficiency, and leverage and which are measured in; revenue diversification which is generally measured on how a SACCO generates its revenue e.g., investing in different sectors such as offering services and owning real estate assets. Efficiency is one of the pillars of a SACCO it is measured on how it provides financial services, minimizes loss of members funds and minimizing withdrawal of members.



CHAPTER THREE RESEARCH METHHODOLOGY

3.1 Introduction

This chapter explained the approach utilized by the research to attain its stated goal. The philosophy of research is presented in Section 3.2. The study design is presented in Section 3.3. Section 3.4 presents a description of the study population. Section 3.5 shows the sample size. Section 3.6 deals with data collection. Section 3.7 deals with the validity and reliability of the data. Section 3.8 deals with data analysis.

3.2 Research Philosophy

Research philosophy is the approach to understand and write the knowledge that is gained by conducting research. Three types of research philosophies will be used in this research paper. These are positivism and interpretive (Mackenzie & Knipe, 2006). Each of these philosophies represents a model that is known as the paradigm for research.

In the positivism paradigm, the researcher works with observable social reality, rationale and experiences to reach an end result of the research. According to Burke (2007), the positivism paradigm is used to understand the World of human experiences. In the positivism paradigm, researcher will recognize the impact on research of their background and experience (Burke, 2007). The critical paradigm researcher will use concepts such as deposit on non depositing Saccos (Mackenzie & Knipe, 2006). According to Mackenzie & Knipe (2006), the positivism paradigm is most commonly aligned with quantitative methods of data collection and analysis (Easterby-Smith, Thorpe & Lowe, 2002). On the other hand, the interpretive paradigm and the critical paradigm are aligned with mixture of both qualitative and quantitative methods that is known as mixed method (Burke, 2007).

The philosophy that best fits this research is Positivism. It involves researchers to interpret elements of the study using the quantitative methods and variables.

3.3 Research Design

Different approaches were employed in solving various problems in an attempt to successfully complete a research study. Research design is a guide on what and how to make observation and analysis of the quantitative representation of the observed facts (Kerlinger, 1964).

As defined by Kothari (2000), A research design is the arranging of settings for data collection and analysis in a way that tries to combine relevance to the study purpose and efficiency in method. It is conceptual structure within which research is conducted. The design serves as the blueprint for data gathering, measurement, and analysis.

The study used a descriptive research design, this type of research design accommodates research instruments such as questionnaire, interview questions, observation guide and documentary analysis. Moreover, data collected through this is comprehensive and reliable because of their ability to explore instance in-depth. In light of this the descriptive research design is a popular form of qualitative and quantitative analysis and involve a careful and complete observation of a social unit. It accounts for social factors for the behavioral pattern for a given unit. The design was also argumentative as it offers facilitation to the management of the units so enquired.

3.4 Population

According to Ngechu (2004), a population is a clearly-defined collection of people, services, elements, and events, as well as a group of objects or homes that are being studied. The population was 5000 deposit taking and non deposit taking Saccos.

Table 3. 1: Target population

Type of Sacco	Total number of Saccos	Percent
Deposit taking saccos	176	3.5
Non-depositing saccos	4824	96.5
Total	5000	100

Source: Primary Data (2020)

3.5 Sample

A sample size is the number of people chosen from a population for research in such a manner that they reflect the broader group from which they were chosen. The features of the sample might then be generalized to the population. The researcher targeted all 176-deposit taking SACCOs registered with SASRA and Use cluster method of sampling to randomly select 370 non deposit taking Saccos. The sample size was calculated using Yamane's (1967) formula for estimating sample size.

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

Where n = sample size,

N = population size

e = error term (0.05)

Hence, $n = 5000 / [1 + 4824 (.05)^2] = 370$

The study sample size will be 370 respondents. This will be 7.4%

Table 3. 2: Sample size

Category	Frequency	Sample	Sample size
Deposit taking saccos	176	100%	176
Non-deposit taking	4824	7.4%	370
Total	5000	-	546

Source: Primary Data (2020)

3.6 Data Collection

The study used primary data. Self-administered questionnaires were used to obtain primary data. The questionnaires asked closed-ended questions. Structured questions were utilized to save time and money while also facilitating a simpler analysis because they were immediately useable.

Because of the pandemic, the questionnaires were distributed via email and office drop in. Questionnaires were utilized because they allowed the participants, who were top executives in the risk management department, to answer freely. The researcher had five assistants who helped in distribution of the questionnaires via emails, calls and drop ins. Questionnaires were distributed to internal auditors and staff in the financial department. total question distributed were 1200. 1092 were sent via email to the Saccos while the rest were drop n to Sacco that didn't respond to the email.

3.7 Data Analysis

The data collected was analyzed using mainly quantitative approaches to analyses as described in the followings sub-sections. Descriptive analysis techniques. SPSS 1.0.0.1406 was used to characterize the data and determine the amount to which it was used using the descriptive statistical approach. To report and display information, descriptive statistics such as frequencies, percentages, means, and standard deviation were employed (Kothari 2004).

To investigate the impact of independent variables on the dependent variable, a multiple regression analysis model was used. To study how the independent components interact with the dependent variable, the correlation coefficient was employed. Analysis of variance (ANOVA) was employed in the multiple regression analysis to investigate the influence of independent variables on the dependent variable.

The multiple regression analysis will take the following form:

$$FIN_PERFORMANCE_{it} = \beta_0 + \delta_n \sum_{t=1}^n FRM_{it} + \beta_n \sum_{t=1}^n SACCO_Controls_{it} + \varphi_i + \eta_t + \varepsilon_i$$

Whereby;

$FIN_PERFORMANCE_{it}$ = the financial performance of SACCO i in time t measured by ROA, ROE, non-performing loans to assets ratio, asset liability management, net interest margin ratio and operational performance;

FRM_{it} = fraud risk management techniques encompassing detective (DET), preventive ($PREV$) and response ($RESP$) techniques adopted by SACCOs;

$SACCO_Controls_{it}$ = SACCO controls including age, size, leverage, efficiency and revenue diversification.

φ_i, η_t and ε_i represent cross section, firm year and the error term, respectively.

3.8 Research Quality

3.8.1 Validity

Validity is an important element for research instruments. According to Bryman (2008), an instrument is valid if it measures the concept that it is supposed to measure. Then, an instrument is valid if it actually measures the concept it is meant to measure (Gatara 2010). According to Polit & Beck (2003), once the questionnaire has been finalized, it should be tried out on the field. This is called pre-testing the questionnaire. The practice of pre-testing the questionnaire is very important because of the following reasons: Comments and suggestions made by respondents during the pre-testing should be seriously considered and incorporated. Such comments help to improve the questionnaire. Questions which are vague will be revealed in the sense that the respondents will interpret them differently. When this happens, the researcher should rephrase the questions until they convey the same meaning to all subjects (Polit & Beck, 2003). The questionnaire was discussed with the supervisor as an expert in research to enhance validity. Also, two randomly selected managers of two SACCOs were requested to review the questionnaire to improve on its content validity. The comments from both the supervisor and the two SACCOs managers was incorporated to improve the content validity of the questionnaire.

3.8.2 Reliability

The information gathered from the pilot test were subjected to a statistical reliability test to ensure the questionnaire meets the minimum acceptable reliability correlation coefficient. A variable is reliable if it is consistent. A Reliability test provide answers to the consideration whether the procedures of data collection and analysis generated the same results on other occasions or would other observers make similar observations and arrive at the same conclusions from the raw data (Smith et al., 2002 and Saunders et al 2007). It means that repeat observations give similar results. The comments and responses of the pre-test respondents were used to adjust the questionnaire to improve its reliability.

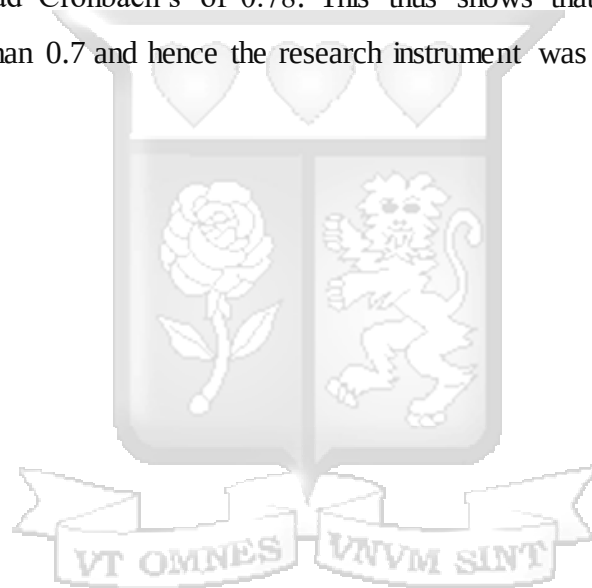
3.8.3 Diagnostic Tests

The study conducted diagnostic tests to test reliability and validity of the research instrument.

Table 3. 3:Reliability test results

Construct	Cronbach (α)	Number of Items
Formulation of Fraud Risk Management	0.75	5
Implementation of Fraud Risk Management	0.73	6
Fraud Risk Management Techniques	0.78	7

As shown in Table 4.2, formulation of fraud risk management techniques had a cronbach's alpha of 0.75, implementation of fraud risk management techniques had a cronbach's of 0.73 and fraud risk management techniques had Cronbach's of 0.78. This thus shows that all the variables had a Cronbach alpha greater than 0.7 and hence the research instrument was reliable and valid.



CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

Interpretation and presentation of the results are discussed in this chapter. This chapter includes data analysis on the effects of fraud risk management techniques on financial performance of SACCOs in Kenya. Substantive findings as per the objectives of the study are then presented and explained, followed by the discussion, which compares the study findings with the relevant body of knowledge.

4.2 Response Rate

The researcher sought to determine the response rate of the respondents as presented on table 4.1 below.

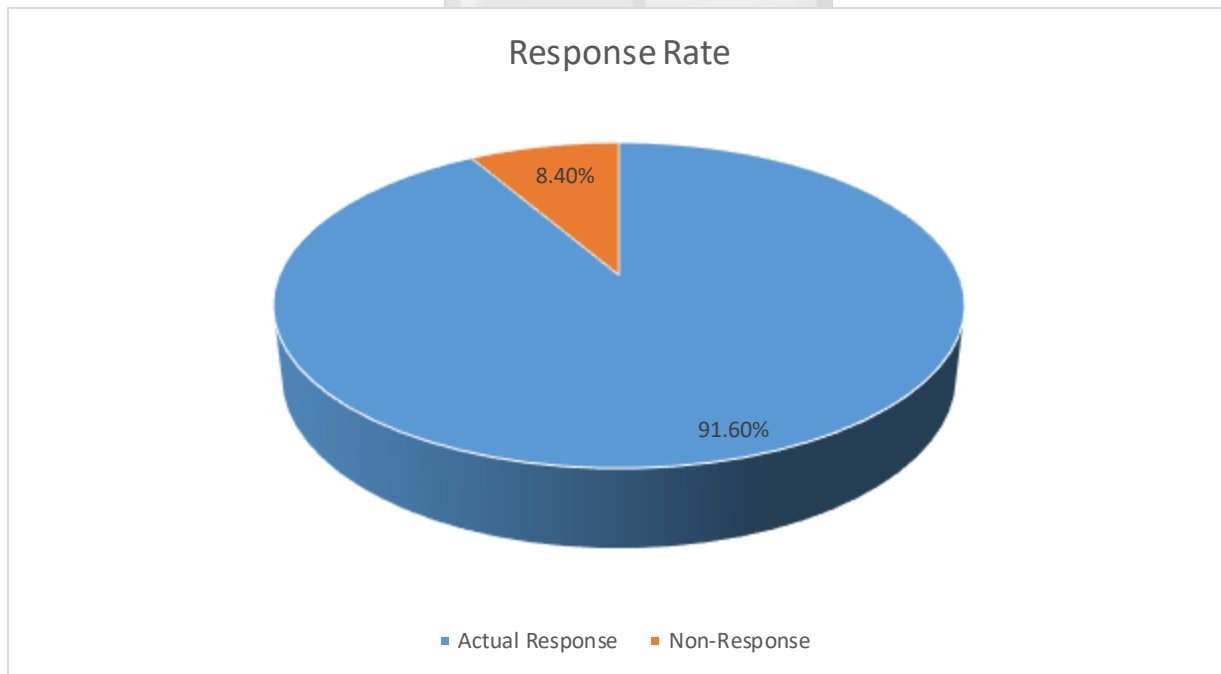


Figure 2: Response Rate

Source: Field Data (2020)

The study had a sample size of 545 respondents, of which 500 completed and returned questionnaires, yielding a response rate of 91.7 percent. This response rate was good and 30

representatives, and it adheres to Kothari's (2000) recommendation that a response rate of 50% is appropriate for analysis and reporting, a rate of 60% is good, and a rate of 70% or above is exceptional. A high response was driven by high levels of motivation to complete the survey and a strong personal relationship between the researcher and the respondents.

4.3 Respondents' Demographics

This section presents the results of the respondents' demographics. Given the nature of the study, the demographics for which data were captured include gender of respondents, level of education, respondents company, respondent's department and years in the current position. These demographics were important because they helped understand the composition of respondents whose perceptual inclinations were the subject of the study as well as the factors behind such perceptions. The respondents were asked to indicate an analysis of background information, and the study's findings are presented in Table 4.1.

Table 4. 1: Analysis of Background Information

Type of Saccos		Frequency	Percent
	Non-deposit taking	360	72
	Deposit taking	140	28
	Total	500	100%
Estimate membership of SACCOs		Frequency	Percent
	Less than 1000	48	9.6
	2000-5000	202	40.4
	5000-10000	146	29.2
	More than 10000	104	20.8
	Total	500	100%

Number of Employees in a SACCO		Frequency	Percent
	0-100	176	35.2
	101-200	150	30
	201-300	120	24
	More than 301	54	10.8
	Total	500	100.0
Number of Branches		Frequency	Percent
	0 - 5	267	53.4
	6 - 15	123	24.6
	16 - 30	65	13
	More than 31	45	9
	Total	500	100.0
Years of operation		Frequency	Percent
	Less than 5 Years	40	8
	5 – 10 years	145	29
	10 - 15 years	215	43
	More than 15 years	100	20
	Total	500	100.0

Source: Field Data (2020)

The researcher sought to find out if a SACCO was deposit or Non-deposit taking and the results in table 4.1 shows that majority of the SACCOs are non-deposit taking. There is a slightly higher number of non-deposit than deposit taking SACCOs which were more open to giving the researcher effective feedback. This was important for this study to know fair views of non-deposit and deposit taking SACCOs on effects of fraud risk management techniques on financial performance of SACCOs in Kenya. Another insight from researchers' forms is that a number of non-deposit taking did not give clarifications or extra answers on optional questions. All the deposit taking SACCOs did.

The researcher sought to find out the Estimate membership of the SACCOs and the results in shows that many SACCOs have an estimated membership of 2000-5000. The willingness of the SACCOs to work with the researcher contributed to the high response of the respondents.

The researcher sought to find out how many employees does the SACCOs have and the results in uncovered that majority of SACCOs 35.2% have employees of 0 - 100, 30% have employees of 101 – 200, 24% have employees of 201 – 300 while 10.8% have employees of more than 301.

The researcher sought to find out how many branches does the SACCOs have and the results from reveals that 53.4% of the SACCOs indicated that they have branches of 0 - 5, 24.6% indicated that they have branches of 6 - 15, 13% indicated that they have branches of 16 – 30 while minority of 9% indicated that they have branches of more than 31. So, this directly points to the huge growth of SACCOs in Kenya.

The researcher sought to find out how long has the SACCOs been in operation and the results reveals that most of the SACCOs indicated that they have been in operation between 5 to 15 years. So, this directly suggests the huge growth of SACCOs in Kenya.

4.4 Preventive Fraud Risk Management Techniques

The study sought to establish preventive fraud risk management techniques that SACCOs in Kenya have in place and how aligned are they with best practice, respondents were presented with descriptive statements on fraud risk management techniques.

Table 4. 2 : Preventive Fraud Risk Management Techniques among Non-Deposit and Deposit taking SACCOs

Descriptive Statement	N	Mean	Std. Dev.	t-value
Employees are trained on anti-fraud mechanisms upon hiring	500	4.2533	.79003	13.739
Training of staff on anti-fraud mechanisms	500	3.9200	1.12418	7.087
Close watch on the lifestyle of staff	500	4.1600	.88593	11.339
Integrity check on Hiring	500	4.2133	.81029	12.968
Verification of signatures	500	4.2000	.83827	12.397
Controls of dormant accounts	500	3.2400	.99784	6.596
Segregation of Duties	500	4.0800	.88164	10.609

Source: Primary Data (2020)

The results on preventive fraud risk management techniques that SACCOs in Kenya have in place and how aligned are they with best practice as presented in table 4.2 show that majority of the statements have mean scores above 4.00 with positive t-values. The results depict a huge reliability of fraud risk management techniques that SACCOs in Kenya have in place and how aligned they are with best practice among the SACCOs. The findings also show statistically significant variation of the reported means from the test value of 3 but the variation among the respondents was minimal as depicted by low standard deviations.

From the findings, the respondents' views on fraud risk management techniques that SACCOs in Kenya have in place varied according to the above table: In an ascending order for the case of employees are trained on anti-fraud mechanisms upon hiring a mean of 4.2533 and std. Deviation of 0.79003. For the case of integrity check on hiring a mean of 4.2133 and std. Deviation of 0.81029. For the case of verification of signatures, a mean of 4.2000 and std. Deviation of 0.83827. For the case of close watch on the lifestyle of staff mean of 4.1600 and std. Deviation of 0.88593. For the case of training of staff on anti-fraud mechanisms a mean of 3.9200 and std. Deviation of 1.12418 and for the case of controls of dormant accounts a mean of 3.2400 and std. Deviation of 0.99784. From the results it is apparent that majority relatively agreed that there are fraud risk management techniques that SACCOs in Kenya have in place that are aligned with the best practices.

4.5 Detective of Fraud Risk Management Techniques

The study sought to establish detective fraud risk management techniques that SACCOs in Kenya have in place and how aligned are they with best practice, respondents were presented with descriptive statements on fraud risk management techniques.

Table 4. 3 : Detective Fraud Risk Management Techniques among Non-Deposit and Deposit taking SACCOs

Descriptive Statement	N	Mean	Std. Dev.	t-value
Risk responses are effectively executed based upon policies and procedures established and implemented through the assessment process	500	4.1467	.65126	15.248
Fraud risk management program is monitored and reviewed to provide evidence of effectiveness as well as to support improvement programs	500	4.0000	.90045	9.618

Management reviews fraud risks for inclusion in objective setting or strategic planning	500	4.6533	0.55742	3.142
A firm understanding of the internal environment at the firm must be developed to establish the current state of the way risk is viewed	500	4.3467	0.53616	2.844
The organization is a very controlled and structured place with formal procedures generally govern what people do	500	4.3600	.67062	17.563

Source: Primary Data (2020)

The results on SACCOs formulation of detective fraud risk management techniques as presented in table 4.3 show that majority of the statements have mean scores above 4.00 with positive t-values. The results depict an enormous formulation of fraud risk management techniques among the SACCOs in Kenya and how they assist in detection of fraud. The findings also show statistically significant variation of the reported means from the test value of 3 but the variation among the respondents was minimal as depicted by low standard deviations.

From the findings, the respondents' views on formulation of fraud risk management techniques in SACCOs varied according to the above table: In an ascending order for the case of a firm understanding of the internal environment at the firm must be developed to establish the current state of the way risk is viewed a mean of 5.1467 and std. Deviation of 0.53616. For the case of management reviews fraud risks for inclusion in objective setting or strategic planning a mean of 4.6533 and std. Deviation of 0.55742. For the case of the organization is a very controlled and structured place with formal procedures generally govern what people do a mean of 4.1867 and std. Deviation of 0.78316. For the case of risk responses are effectively executed based upon policies and procedures established and implemented through the assessment process a mean of 4.1467 and std. Deviation of 0.65126 and for the case of fraud risk management program is monitored and reviewed to provide evidence of effectiveness as well as to support improvement programs, a mean of 4.0000 and std. Deviation of 0.90045. From the results it is apparent that

majority relatively agreed that SACCOs are continuously formulating fraud risk management techniques to curb fraud.

4.6 Responsive Fraud Risk Management Techniques

The study sought to establish the responsive fraud risk management techniques in SACCOs, respondents were presented with descriptive statements on responsive fraud risk management techniques.

Table 4. 4 : Responsive Fraud Risk Management Techniques among Non-Deposit and Deposit taking SACCOs

Descriptive Statement	N	Mean	Std. Dev.	t-value
Changes during the implementation are well communicated to all staff on time	500	4.1333	.81096	12.103
A strategy steering committee has been appointed to steer the process of implementing fraud risk management techniques at the SACCO	500	4.2400	.75050	14.309
There is a team leader who oversees the developments during implementation of fraud risk management techniques	500	4.0333	.82396	12.103
Frequent meetings are held to assess the progress of implementing fraud risk management techniques	500	4.2900	.80270	13.378
The actual results are always compared with the set objectives	500	4.3200	.68102	16.786
Top management is always informed about the progress of implementing fraud	500	4.2533	.79003	13.739

risk management techniques at the
SACCO

Source: Primary Data (2020)

The results on responsive fraud risk management techniques in SACCOs as presented in table 4.4 show that majority of the statements have mean scores above 4.00 with positive t-values. The results depict a great process of implementation of fraud risk management techniques especially in response to fraud occurrence in SACCOs. The findings also show statistically significant variation of the reported means from the test value of 3 but the variation among the respondents was minimal as depicted by low standard deviations.

From the findings, the respondents' views on responsive fraud risk management techniques in SACCOs in Kenya have in place varied according to the above table: In an ascending order for the case of the actual results are always compared with the set objectives a mean of 4.3200 and std. Deviation of 0.68102. For the case of frequent meetings are held to assess the progress of implementing fraud risk management techniques a mean of 4.2900 and std. Deviation of 0.80270. For the case of top management is always informed about the progress of implementing fraud risk management techniques at the SACCO a mean of 4.2533 and std. Deviation of 0.79003. For the case of a strategy steering committee has been appointed to steer the process of implementing fraud risk management techniques at the SACCO a mean of 4.2400 and std. Deviation of 0.75050. For the case of changes during the implementation are well communicated to all staff on time a mean of 4.1333 and std. Deviation of 0.81096 and for the case of there is a team leader who oversees the developments during implementation of fraud risk management techniques a mean of 4.0333 and std. Deviation of 0.75050. From the results it is apparent that majority relatively agreed that there is a huge implementation of fraud risk management techniques in SACCOs in Kenya.

4.7 T-test analysis for deposit taking and non-deposit taking

The study makes it viable to conduct a T-test analysis for deposit taking and non-deposit taking Saccos. The findings were established as shown below.

Table 4. 5:T-test analysis for deposit taking and non-deposit taking

SACCOs		Mean	N	Std. Deviation
Pair	Deposit Taking SACCOs	4.36	140	.631
	Non-Deposit taking SACCOs	4.17	360	.771

Source: Primary Data (2020)

Table 4.5 presents results of Paired Samples Statistics and it indicates that the mean for the deposit taking SACCOs is 4.36. The mean for non-deposit taking SACCOs is 4.17. The standard deviation for the deposit taking SACCOs is 0.631 and for the non-deposit taking SACCOs, also 0.771. The number of participants in deposit taking SACCOs (N) is 140 and for Non-Deposit taking SACCOs (N) is 360. A very high mean scores report fairly high negative t-values that are statistically significant ($p \leq 0.05$). The results mean that the fraud risk management techniques presented to non-deposit and deposit taking SACCOs do play a significant role in preventing and detecting fraud.

4.8 Factor analysis for deposit taking and non-deposit SACCOs

4.8.1 Deposit Taking SACCOs

Kaiser Meyer-Olkin and Bartlett test of Sphericity were generated by SPSS and helped to assess the factorability of data for structure detection (Pallant, 2010). Kaiser-Meyer-Olkin (KMO) test was used to assess sampling adequacy. The index ranges from 0 to 1. For adequate sample, KMO test statistic should be greater than 0.5. The world-over accepted index is 0.6 or higher to proceed with factor analysis.

Table 4. 6 :KMO and Bartlett's Test of Deposit Taking SACCOs

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.748
Bartlett's Test of Sphericity	Approx. Chi-Square	1829.334
	Df	139

	Sig.	.000
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Source: Primary Data (2020)

Table 4.6 shows KMO statistics of 0.748 which is greater than the convectional probability value of 0.5 and over .60 for a satisfying sample. This implies an acceptable degree of sample adequacy for factor analysis.

4.8.2 Non-Deposit Taking SACCOs

Table 4. 7 :KMO and Bartlett's Test of Non-Deposit Taking SACCOs

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.839
Bartlett's Test of Sphericity	Approx. Chi-Square	1649.33
	Df	359
	Sig.	0.000

Source: Primary Data (2020)

Table 4.7 shows KMO statistics of 0.839 which is greater than the convectional probability value of 0.5 and over .60 for a satisfying sample. This implies an acceptable degree of sample adequacy for factor analysis.

Table 4. 8: Loadings for Preventive Fraud Risk Management Techniques

	Deposit Taking		Non-Deposit	
Statements	Factor Loading	Final Status	Factor Loading	Final Status
Employees are trained on anti- fraud mechanisms upon hiring	.577	Retained	.724	Retained

Training of staff on anti-fraud mechanisms	.741	Retained	.706	Retained
Close watch on the lifestyle of staff	.714	Retained	.812	Retained
Integrity checks on Hiring	.612	Retained	.565	Retained
Verification of signatures	.730	Retained	.753	Retained
Controls of dormant accounts	.659	Retained	.741	Retained
Segregation of Duties	.575	Retained	.748	Retained

Source: Primary Data (2020)

Table 4.8 shows results of factor analysis which clearly shows that all the items had factor loadings on non-deposit and depositing taking SACCOs is greater than 0.5 and as such, all the items were retained.

Table 4.9 :Loadings for Detective Fraud Risk Management Techniques

	Deposit Taking		Non-Deposit	
Statements	Factor Loading	Final Status	Factor Loading	Final Status
Risk responses are effectively executed based upon policies and procedures established	0.621	Retained	0.746	Retained

and implemented through the assessment process.				
Fraud risk management program is monitored and reviewed to provide evidence of effectiveness as well as to support improvement programs	0.632	Retained	0.546	Retained
Management reviews fraud risks for inclusion in objective setting or strategic planning	0.605	Retained	0.547	Retained
A firm understanding of the internal environment at the firm must be developed to establish the current state of the way risk is viewed	0.581	Retained	0.582	Retained
The organization is a very controlled and structured place with formal	0.663	Retained	0.588	Retained

procedures generally govern what people do				
Loadings for Responsive Implementation of Fraud Risk Management Techniques				
	Deposit Taking		Non-Deposit	
Statements	Factor Loading	Final Status	Factor Loading	Final Status
Changes during the implementation are well communicated to all staff on time	.665	Retained	.544	Retained
A strategy steering committee has been appointed to steer the process of implementing fraud risk management techniques at the SACCO	.636	Retained	.787	Retained
There is a team leader who oversees the developments during implementation of fraud	.701	Retained	.622	Retained

risk management techniques				
Frequent meetings are held to assess the progress of implementing fraud risk management techniques	.804	Retained	.795	Retained
The actual results are always compared with the set objectives	.624	Retained	.774	Retained
Top management is always informed about the progress of implementing fraud risk management techniques at the SACCO	.645	Retained	.719	Retained

Source: Primary Data (2020)

Table 4.9 shows results of factor analysis showed that all the items had factor loadings on non-deposit and depositing SACCOs taking is greater than 0.5 and as such, all the items were retained. It also shows results of factor analysis showed that all the items had factor loadings deposit and depositing SACCOs taking is greater than 0.5 and as such, all the items were retained.

4.9 Correlation Analysis

Correlation refers to the strength of an association between two variables. A strong or high correlation means that two or more variables have a strong relationship with each other while a

weak or low, correlation means that the variables are hardly related. Correlation coefficient can range from -1.00 to +1.00. The value of -1.00 represents a perfect negative correlation while a value of +1.00 represents a perfect positive correlation. A value of 0.00 means that there is no relationship between variables being tested (Orodho, 2003).

Table 4. 10: Correlations Analysis Results

		Financial Performance	Formulation of Detective Fraud Risk Management Techniques	Implementation of Responsive Fraud Risk Management Techniques
Financial performance	Pearson	1		
	Correlation			
	Sig. (2-tailed)			
Formulation of	Pearson	.748**	1	
detective Fraud	Correlation			
Risk Management				
Techniques	Sig. (2-tailed)	.000		

Implementation of Responsive Fraud Risk Management Techniques	Pearson Correlation	.777**	.805**	1
	Sig. (2-tailed)	.000	.002	.001
	Valid N	500	500	500

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

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

It showed that formulation of detective fraud risk management techniques was strongly positively and statistically significant correlated to financial performance ($r=0.748$, $p<0.01$). The study findings further revealed that implementation of responsive fraud risk management techniques was positive and strongly correlated with financial performance ($r=0.777$, $p<0.01$). This gave an implication that all the study variables were positively correlated to financial performance. This further implies that formulation of fraud risk management techniques contributes 74.8% to financial performance. Implementation of fraud risk management techniques contributes 77.7% to financial performance.

4.10 Regression Analysis

The study conducted a linear regression model for deposit taking and non-deposit taking SACCOs in order to establish the financial performance of fraud risk management techniques on deposit taking and non-deposit taking SACCOs in Kenya. Coefficient of determination describes the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (financial performance) that is explained by all the four independent variables (fraud risk management techniques).

4.10.1 Regression Analysis for Overall Model for Deposit Taking SACCOs

Table 4. 11 Multiple Regression Model Summary for Deposit Taking SACCOs

R	R Square	Adjusted R Square	Std. Error of the Estimate
.776 ^a	.602	.587	.35693

Source: Primary Data (2020)

In table 4.11 prevention, detective and responsive were found to be satisfactory variables in influencing the financial performance since coefficient of determination (R^2) has a value of 0.776. This means 77.6% variations in financial performance can be explained by the three independent variables. The adjusted R^2 indicates that 60.2% of the changes in financial performance are explained by the model after adjusting for errors. Therefore, one unit of fraud risk management techniques would lead to 0.776 units of financial performance in Deposit Taking SACCOs.

Table 4. 12 :Summary of ANOVA results of effect of fraud risk management techniques on financial performance on Deposit Taking SACCOs in Kenya

	Sum of Squares	DF	Mean Square	F	Sig
Regression	20.072	2	10.036	371.7037	.000a
Residual	13.249	497	.027		
Total	33.321	499			

Source: Primary Data (2020)

The results table 4.12 indicate that the overall model was statistically significant as supported by a p value of 0.000 which is lesser than the critical p value of 0.05. In addition, the findings indicate that the independent factors are good predictors of financial performance. This was corroborated by a F statistic of 371.7037 and a reported p value (0.000) which were less than the usual probability of 0.05 significance level.

Table 4. 13: Regression Analysis Coefficient of Deposit Taking SACCOs in Kenya

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.083	.266		4.069	.000
Prevention	.127	.063	.161	2.031	.045
Detective	.218	.077	.252	2.815	.006
Responsive	.174	.058	.230	3.017	.003

Source: Primary Data (2020)

Regression of coefficients results in Table 4.13 shows that prevention has a positive and significant influence on financial performance ($\beta_1=0.127$, $p=0.045$). It was further established that detective has a positive and significant influence on financial performance ($\beta_2=0.218$, $p=0.006$). Responsive was found to have a positive and significant influence on financial performance ($\beta_3=0.174$, $p=0.003$). Therefore, the overall regression results imply that there is a positive and significant relationship between fraud risk management techniques and financial performance in deposit taking SACCOs in Kenya.

4.10.2 Regression Analysis for Overall Model Non-Deposit SACCOs

Table 4. 14 : Multiple Regression Model Summary for Non-Deposit Taking SACCOs

R	R Square	Adjusted R Square	Std. Error of the Estimate
.911	.830	.821	.338

Source: Primary Data (2020)

In table 4.14 prevention, detective and responsive were found to be satisfactory variables in influencing the financial performance since coefficient of determination (R^2) has a value of 0.939. This means 93.9% variations in financial performance can be explained by the three independent variables. The adjusted R^2 indicates that 88.1% of the changes in financial performance are explained by the model after adjusting for errors. Therefore, one unit of fraud risk management techniques would lead to 0.939 units of financial performance in Non-Deposit Taking SACCOs.

Table 4. 15: Summary of ANOVA results of effect of fraud risk management techniques on financial performance among Non-Deposit Taking SACCOs in Kenya

	Sum of Squares	DF	Mean Square	F	Sig.
Regression	146.175	2	73.0875	403.798	.000a
Residual	89.729	497	0.181		
Total	165.904	499			

Source: Primary Data (2020)

The results in table 4.15 indicate that the overall model was statistically significant as supported by a p value of 0.000 which is lesser than the critical p value of 0.05. Further, the findings indicate that the independent variables are good predictors of financial performance. This was supported by an F statistic of 403.798 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 4. 16: Regression Analysis Coefficient of Non-Deposit Taking SACCOs in Kenya

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.231	.120		1.929	.056
Prevention	.112	.025	.136	4.461	.000

Detective	.522	.074	.527	7.048	.000
Responsive	.363	.070	.378	5.180	.000

Source: Primary Data (2020)

Regression of coefficients results in Table 4.16 shows that prevention has a positive and significant influence on financial performance ($\beta_1=0.112$, $p=0.000$). It was further established that detective has a positive and significant influence on financial performance ($\beta_2=0.522$, $p=0.000$). Responsive was found to have a positive and significant influence on financial performance ($\beta_3=0.363$, $p=0.000$). Therefore, the overall regression results imply that there is a positive and significant relationship between fraud risk management techniques and financial performance in Non-Deposit Taking SACCOs in Kenya.



CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary, conclusions, recommendations and limitations of the study and its findings. This study focused on effects of fraud risk management techniques on financial performance of deposit and non-deposit taking SACCOs in Kenya.

5.2 Summary of Findings

The objectives of the research were; To investigate effects of preventive fraud risk management techniques on financial performance in SACCOS in Kenya, to investigate effects of detective fraud risk management techniques on financial performance in SACCOS in Kenya and to investigate effects of responsive fraud risk management techniques financial performance in SACCOs in Kenya.

5.2.1 Preventive Fraud Risk Management Techniques of Non-Deposit and Deposit taking SACCOs

In relation with the T-test analysis results that was generated from the findings the study shows that there is a huge reliability on preventive fraud risk management techniques that are in place are aligned with best practice among Non-Deposit taking and Deposit taking SACCOs. From the findings it is apparent that majority relatively agreed that there are fraud risk management techniques in place. Fraud risk management techniques need to be embedded in an organization's DNA in the form of written policies, defined responsibilities, and on-going procedures that implement an effective program. There's no skirting around the fact that fraud risk management techniques are a SACCOs expense. While cost should be kept in mind when choosing fraud risk management techniques, investing in some could help businesses save billions of money a year on losses. At the very minimum, a solution tailored to your specific requirements will always pay for itself. From the findings key preventive measures in saccos include: employees training on anti-fraud mechanisms upon hiring, integrity check on hiring, verification of signatures, watch on the lifestyle of staff, controls of dormant accounts.

Fraud risk management techniques can also save you time. Though manual reviews continue to play an important role in fraud prevention, they might be costing your team more time and effort than they should. Solutions that are powered by artificial intelligence and machine learning can recommend and make decisions in real time, thus greatly reducing the need for manual reviews. Fraud risk management techniques have straightforward integration processes, allowing businesses to get them up and running in minutes. This said, depending on factors such as the size of your company, product roadmap, and customization requirements, integration times can vary. Even if this is the case for your business, most fraud risk management techniques can be integrated in stages. It's normal for businesses to have misconceptions of fraud. However, as long as these myths persist, fraudsters will continue to outpace any SACCO.

5.2.2 Formulation of Detective Fraud Risk Management Techniques in Non-Deposit and Deposit taking SACCOs

In relation with the T-test analysis results that was generated from the findings the study established that formulation of fraud risk management techniques has largely been embraced in Non-Deposit taking and Deposit taking SACCOs. Management is even reviewing fraud risks for inclusion in objective setting and strategic planning. Apparently, majority of Non-Deposit taking and Deposit taking SACCOs are continuously formulating fraud risk management techniques to curb fraud. In practice, the same systems and controls established to prevent fraud may help in detecting it. When everyone knows that fraud is possible and a serious problem for which the organization has developed detection mechanisms, it is less likely to occur.

Making employees aware of their obligations to mitigate the risks of fraud and misconduct begins with practical communication and training. While many SACCOs communicate on such issues in an ad hoc manner or by using a one-size-fits-all approach, such efforts may fail to educate employees or provide them with a clear message that their control responsibilities are to be taken seriously. In formulating a comprehensive training and communications plan, management should consider developing fraud and misconduct awareness initiatives. SACCOs have a better chance of detecting fraud and misconduct early when they have built a culture where firstly, employees believe they have a stake in the company or see that integrity is a key element of their organization and secondly, that they have the affirmative obligation to raise their hands and report

improper conduct. It is important to understand that employees are more likely to raise concerns when they know where to turn for help, feel comfortable doing so without fear of retaliation and believe that management will be responsive to their concerns.

5.2.3 Implementation of Responsive Fraud Risk Management Techniques in Non-Deposit and Deposit taking SACCOs

The study established that there is a great process of implementation of fraud risk management techniques in Non-Deposit taking and Deposit taking SACCOs this is clearly visible from the T-test analysis results. Majority relatively agreed that implementation of fraud risk management techniques controls, monitoring, and reporting promote faster detection of fraud. Key techniques protection of whistleblower, provision of policies, reports designed to highlight potential and common indicators of non-standard outcomes over time, and other controls that alert people to potential fraud. It goes without saying that installing these indicators will have no effect if they are not monitored. Hence, creating information that does not get to the right person to take action is useless.

Management should seek to ensure that the risk assessment is conducted across the entire SACCO, taking into consideration the entity's significant business units, processes and accounts. Throughout this process, subject matter professionals and various control owners provide input as to the relevant risks to achieving SACCOs objectives as well as the resources and action steps management can use to mitigate such risks. With the oversight and guidance of senior management, SACCOs can provide employees with a variety of ways to report concerns, typically requesting that employees follow a process that begins with alerting their own managers, if possible, or a designated human resources or compliance officer. While many SACCOs offer employees telephone or web-based 'hotlines' that can be used at any time, research suggests that they are often used when normal communication channels are deemed to be impractical or ineffective.

5.3 Conclusions

The fraud risk management techniques among deposit and non depositing saccoes are very similar even if their operating structures are different which shows in their constant improvement in the financial performance, increase in members, increase in volume of deposits and decrease of reports of suspect fraud as seen in SASRA annual report. Deposit taking SACCOs suspected fraud is at 7.3% as compared to Non-Deposit taking SACCOs which is at 3.8%. this shows that when fraud risk management techniques are formulated and implemented the fraud occurrences and complaints goes down so significantly where its stops being a major concern. Non deposit taking SACCOs have had a laid-back regulation but many took up the mantle and implanted the best practice for fraud management to ensure their clients could fully trust them with their deposits although in 2020 there was a publication of Sacco societies regulations which are meant for non deposit taking Sacco that are not registered under SASRA this is to curb fraud occurrences since many people used non depositing saccoes to carry out fraud due to the laid-back regulations.

The findings harmonize with that of James (2011) argue that controls, monitoring, and reporting promote faster detection of fraud. One of the key elements in the initial planning for a fraud prevention program is to set up responsibilities and processes to ensure that timely information is reported to someone who can address a problem. Key detection measures include a whistleblower policy, reports designed to highlight potential and common indicators of non-standard outcomes over time and other controls that alert people to potential fraud. It goes without saying that installing these indicators will have no effect if they are not monitored. Creating information that does not get to the right person to take action is useless. These systems trigger responses that have strong legal implications, so one of the essential components is review for legal rights of affected parties and compliance with applicable law.

Based on the objectives, the conclusion of the study is therefore that majority of Saccos rely on fraud risk management techniques and have implemented them in their system and day to day running to curb fraud occurrences. Training of staff is top most in the prevention measure while internal control system that can detect anomalies and fraud is highly used in fraud detection hence a solid and comprehensive fraud risk management strategy will not only prevent fraud, but will also identify it at an early stage.

5.4 Contribution to knowledge

The findings of the study are that most elements of fraud risk management techniques are believed to be closely and positively related to non-Deposit taking and Deposit taking SACCOs in Kenya competitive advantage, and these findings has a positive implication with fraud management lifecycle theory. Obviously, based on the link between fraud risk management techniques and management of fraud at non-Deposit taking and Deposit taking SACCOs, the study's result indicates the stages of fraud risk management in chronological order. Furthermore, the theory demonstrates what institutional mechanisms need be put in place to properly address fraud. Therefore, fraud risk management techniques are essential in conveying governance in the non-Deposit taking and Deposit taking SACCOs is a crucial part that necessitates techniques and effective decision making. This is due to the industry's large number of players, each of which is attempting to outsmart the other for personal advantage. The findings of the study are that fraud risk management techniques encompasses the concept in the psychology of the organization, it traverses all sectors of the organization and thus affects how a manager perceives fraud.

5.5 Recommendations of the Study

5.5.1 Recommendations to policy

Recommendations for policy and practice have been formed in line with the crucial findings of the study. It is evident that Non-Deposit taking and Deposit taking SACCOs have a great deal of confidence in the applied fraud risk management techniques they have put in place in accordance with best practice worldwide. From these findings, it is clear that the majority agree that fraud risk management techniques are in place. Prevention stems from a culture of awareness of fraud, understanding of general policies and procedures, a secure stop for whistleblowers and communicates the importance of preventing fraud from above. The majority agree that the implementation of fraud risk management, control, monitoring, and reporting techniques will promote faster fraud detection. Key techniques protect whistleblowers, provide policies and reports designed to highlight potential and dissemination indicators of non-standard results over time, and other controls in the scene inform people about the possibility of cheating. It goes without saying that the installation of these indicators will have no effect if they are left unattended in both Non-Deposit taking and Deposit taking SACCOs. Hence the fraud

management techniques should continue to be used as observed with the new public policy for non depositing where they have to follow the techniques which are considered best practice.

5.5.2 Recommendations to practice/managerial recommendations

This study sought to establish fraud risk management techniques if any, that Non-Deposit taking and Deposit taking SACCOs in Kenya have in place. The study recommends that Non-Deposit taking and Deposit taking SACCOs should enhance fraud risk management techniques. They should also ensure that there is enough training, efficient internal controls and effective monitoring and evaluation. This takes more than simply sound judgment and proactive action; it demands commitment, which can only be obtained if management ensures the effective implementation of fraud risk management approaches. A thorough attention that takes nothing for granted, as well as a knowledge that trust may be misplaced, is required for this attentive and thorough approach.

5.5.3 Recommendations to academia/research

The findings of the study are that most elements of fraud risk management techniques are believed to be closely and positively related to non-Deposit taking and Deposit taking SACCOs, and these findings have a positive implication with fraud management lifecycle theory. Obviously, based on the importance of fraud risk management techniques on non-Deposit taking and Deposit taking SACCOs in Kenya, the results of research demonstrate that fraud risk management techniques need to be embedded in an organization's DNA in the form of written policies, identified responsibilities, and the procedures in place to implement an effective program. Apparently, the majority of non-Deposit taking and Deposit taking SACCOs are continually developing fraud risk management techniques to limit fraud, a business needs to be able to define its capabilities and uniqueness of its fraud risk management techniques. Research should continue to create even more policies that will tighten a noose around those trying to commit fraud this will be possible with research from the academia department and industry researchers who can see which policy would suit SACCOs best.

5.6 Limitations of the study

There were a lot of difficulties faced when doing the study investigation, particularly throughout the data collection phase. I had to work under several constraints such as time and finances. Time for collecting and analyzing data was very short while the finances needed were insufficient. The respondents had to be persuaded to assist with primary data which they considered sensitive and private, at first, they were reluctant to assist so numerous follow up calls and building trust had to be created. Another disadvantage is the inability to develop a model that would enable a researcher to explore the relationship between the various elements. Furthermore, due to a weakness in the regression models, the model may be inaccurate. Due to the limits of regression models, other models can be used to explain the various relationships between variables. It was important to determine the dependent and independent variables when developing this model. If the model is incorrect, the analytical method may fail to yield the expected results. Multiple regression was employed in this situation due to the large number of variables to be examined. The data was difficult to get and compute since it was in extremely raw form due to a lack of standardized financial records from multiple Non-Deposit Taking and Deposit Taking SACCOs, thus complicating data processing.

5.7 Suggestions for Further Research

The framework utilized in this study assessed the effect of fraud risk management techniques on financial performance on Non-Deposit taking and Deposit taking SACCOs in Kenya based on only three variables as were captured in the research instrument. Researchers can further determine the suitability and effectiveness of this model especially as to whether it captures the financial performance of fraud risk management techniques on Non-Deposit taking and Deposit taking SACCOs in Kenya. This can further stimulate the growth of the frontiers of knowledge concerning effects of fraud risk management techniques on Non-Deposit taking and Deposit taking SACCOs in Kenya.

Further research should be done on the effect of having a Sacco Fraud Investigation Unit and how having such a unit will impact the way SACCOs operate, also with the new regulations where non depositing saccos have to register and adhere to SASRA regulations how will such a

requirement deter fraudsters who register Saccos in order to steal from the public and how will this affect SACCO performance in the coming year.

The descriptive research design used in the study cannot be used to test or verify the research problem statistically. Further, research results may reflect certain level of bias due to the absence of statistical tests. The majority of descriptive studies are not 'repeatable' due to their observational nature they are also not helpful in identifying cause behind described phenomenon.



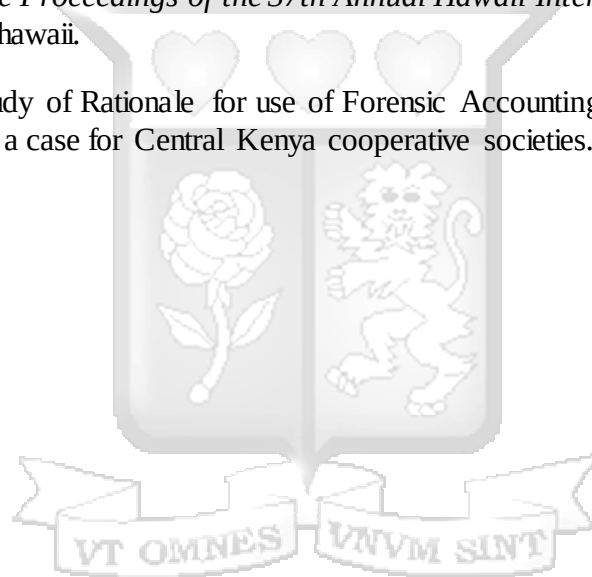
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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

My name is Miss. Muriuki Cicily Wangu. I am a student at Strathmore University Business School in my final year studying Masters of Commerce (MCOM) Degree. I am kindly requesting you to assist in providing responses to the questions contained in the questionnaire investigating effect of Fraud Risk Management Techniques on financial performance of Saccos in Kenya. All information provided will be treated strictly as confidential and purely for academic purpose. Looking forward to your favorable response and cooperation.

Contact me through:

Email: cicily.wangu@strathmore.edu



APPENDIX II: QUESTIONNAIRE

INSTRUCTION: Please answer all the questions honestly and exhaustively by putting a tick (✓) in the appropriate box that closely matches your view or alternatively writing in the spaces provided where necessary.

PART 1:

A) GENERAL INFORMATION ABOUT THE ORGANISATION:

1. Name of the organization

2. Please indicate the Deposit or Non-deposit taking SACCOs?

Non-deposit taking ☐

Deposit taking ☐

3. How many employees does the organization have?

0 - 100 ☐

201 - 300 ☐

101 - 200 ☐

More than 301 ☐

4. What is the estimate membership of the Sacco?

Less than 1000 ☐

2000 - 5000 ☐

5000 - 10000 ☐

More than 10000 ☐

5. How many branches does the organization have?

0 - 5 ☐

16 - 30 ☐

6 - 15 ☐

More than 31 ☐

6. How long has the Sacco been in operation?

Less than 5 years ☐

5 – 10 years ☐

10 - 15 years ☐

More than 15 years ☐

PART 2: PREVENTIVE FRAUD RISK MANAGEMENT TECHNIQUES

This section has statements regarding the preventive fraud risk management techniques in SACCOS by ticking the number besides the question where 5= Strongly Agree (VLE)], [4= Agree], [3=Undecided (U)], [2= Disagree], [1= Strongly Disagree]:

	Rating:				
Statements	5	4	3	2	1
Employees are trained on anti- fraud mechanisms upon hiring					
Training of staff on anti-fraud mechanisms					
Close watch on the lifestyle of staff					
Integrity check on Hiring					
Verification of signatures					
Controls of dormant accounts					
Segregation of Duties					

PART 3: FORMULATION OF DETECTIVE FRAUD RISK MANAGEMENT TECHNIQUES

Please answer the following questions by ticking the number besides the question where 5=Very Large Extent (VLE)], [4=Some Extent (SoE)], [3=Undecided (U)], [2= Small Extent (SmE)], [1=Not at All (NT)]:

	Rating:				
Statements	5	4	3	2	1
Risk responses are effectively executed based upon policies and procedures established and implemented through the assessment process.					
Fraud risk management program is monitored and reviewed to provide evidence of effectiveness as well as to support improvement programs					
Management reviews fraud risks for inclusion in objective setting or strategic planning					
A firm understanding of the internal environment at the firm must be developed to establish the current state of the way risk is viewed					
The organization is a very controlled and structured place with formal procedures generally govern what people do					

PART 4: IMPLEMENTATION OF RESPONSIVE FRAUD RISK MANAGEMENT TECHNIQUES

Below is a list of statements concerning implementation of fraud risk management techniques at your SACCO. On a scale of 1 -5, please indicate the extent of your agreement with each statement as regards fraud risk management techniques, 1 stands for ‘not at all’ and 5 stands for ‘to a very great extent’ or providing a written down statement where necessary:

Statements	Rating				
	5	4	3	2	1
Changes during the implementation are well communicated to all staff on time					
A strategy steering committee has been appointed to steer the process of implementing fraud risk management techniques at the SACCO					
There is a team leader who oversees the developments during implementation of fraud risk management techniques					
Frequent meetings are held to assess the progress of implementing fraud risk management techniques					
The actual results are always compared with the set objectives					
Top management is always informed about the progress of implementing fraud risk management techniques at the SACCO					

THANK YOU SO MUCH FOR YOUR TIME

APPENDIX IV: ETHICAL APPROVAL



Strathmore
UNIVERSITY

15th December 2020

Ms Muriuki, Cicily
cicily.wangu@strathmore.edu

Dear Ms Muriuki,

RE: Economic Consequences of Fraud Risk Management Techniques on Saccos In Kenya

This is to inform you that SU-IERC has reviewed and **approved** your above research proposal. Your application reference number is **SU-IERC0908/20**. The approval period is **15th December 2020 to 14th December 2021**.

This approval is subject to compliance with the following requirements:

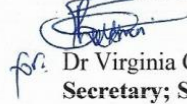
- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification



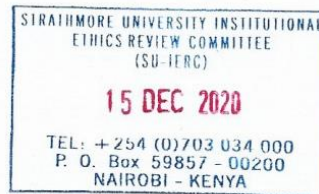
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

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

Yours sincerely,


Dr Virginia Gichuru,
Secretary; SU-IERC

Cc: Prof Fred Were,
Chairperson; SU-IERC



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Email info@strathmore.edu www.strathmore.edu

APPENDIX V: NACOSTI CLEARANCE FORM





REPUBLIC OF KENYA

Ref No: 511403

RESEARCH LICENSE



This is to Certify that Miss. Cicily Muriuki of Strathmore University, has been licensed to conduct research in Nairobi on the topic: **ECONOMIC CONSEQUENCES OF FRAUD RISK MANAGEMENT TECHNIQUES ON SACCOS IN KENYA** for the period ending : 24/November/2021.

License No: NACOSTI/P/20/7907



**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION.**

Date of Issue: 24/November/2020

Walter Wambui

