IMPACT OF FORENSIC ACCOUNTING PRACTICES ON FRAUD DETECTION AND PREVENTION AMONG DEPOSIT TAKING SACCOS IN NAIROBI COUNTY

BY

ARTHUR NGUGI MBUGUA

D61/71210/2014

A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (FINANCE),

SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

JULY, 2020

DECLARATION

The research project is my original work and has not been presented for examination in any other University or institution of Knowledge.

Signature…… Date……

ARTHUR NGUGI MBUGUA

REGISTRATION No: D61/71210/2014

This research project has been submitted for examination with my approval as the:

University Supervisor

Signature…… Date……

DR. LUTHER OTIENO

Lecturer

Department of Finance and Accounting

University of Nairobi Kisumu Campus

ACKNOWLEDGEMENT

Thanks to God for ability and opportunity to enroll on this Master's Degree and who gave me guidance throughout the entire course and to my family members who accorded me the moral support.

Appreciation to all the professional fraternity who enabled the completion of this research with special thanks to all Deposit taking Saccos who allowed their employees to participate as respondents of this study.

Finally, I acknowledge the help of my supervisor together with other teaching fraternity of the University of Nairobi whose input enabled successful completion of this research.

DEDICATION

This work is dedicated to all forensic accounting professionals with passion in fraud detection and prevention.

ABSTRACT

The study's objective was to establish the impact of Forensic accounting practices on fraud detection and prevention among Deposit taking SACCOs in Nairobi County. The study was guided by forensic accounting practices that comprised of litigation support, fraud investigation, and dispute resolution. Fraud Triangle theory, Rational Choice Theory, and Routine Activity Theory guided the study in building theoretical constructs. Both cross sectional survey and descriptive research design was adopted in this study aimed at describing the current affairs as they exist and entailed data collection which was used to draw conclusions. The population constituted of 42 deposit taking SACCOs that have been operational within Nairobi County as at December 2018. Census technique was applied to solicit data from the entire population since the population was relatively small and accessible. The study collected data from 37 deposit taking SACCOs out of 42. A structured questionnaire was used in data collection through a drop and pick approach. Both inferential and descriptive statistics were employed in data analysis, where descriptive statistics encompassed frequencies and percentages, while inferential statistics encompassed use of multiple linear regression. Analysis of collected data established that forensic accounting practices have a moderate and positive impact relation on fraud detection and prevention among deposit taking SACCOs in Nairobi County ($p<.05$). Litigation support has a statically significant relationship with fraud detection and prevention ($P< .05$). The study established that fraud investigation and dispute resolution impacts fraud detection and prevention although the relationship was not statistically significant ($p>.05$). The study recommends that Deposit Taking SACCOs in Nairobi County should leverage litigation support with a view of detecting and preventing fraud since the approach enhances discovery of information through document examination to unearth important facts, which will aid fraud detection and eventual prevention. Further research should be done to determine how other factors such as Strong Internal Controls, Fraud risk assessment strategy, Organizational Culture and adoption of technology may impact fraud detection and prevention since forensic accounting practices considered in this study explained a positive significant impact of only 28.5%.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS AND ACRONYMS

ACFE: Association of Certified Fraud Examiners

ANOVA: Analysis of Variance

ATM: Automated Teller Machines

BFID: Banking Fraud Investigations Department

FBI: Federal Bureau of Investigations

GDP: Gross Domestic Product

ICPAK: Institute of Certified Public Accountants

KES: Kenya Shillings

PWC: Price Warehouse Coopers

SACCO: Savings and Credit Cooperative Organizations

SASRA: Sacco Societies Regulatory Authority

UK: United Kingdom

USA: United States of America

USD: United States Dollars

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Considering that fraud has become a global concern Kenya not being an exception, deployment of forensic accounting services play an important role in detection and prevention of such frauds. Forensic accounting entails the application of analytical and investigation skills with an aim of solving financial matters in a way that suits prescribed threshold needed by law courts (Tommie 2010). Forensic accountants deploy specialized techniques in auditing, Financial accounting, quantitative techniques, Law and Investigation skills to collate and examine evidence and interpret and communicate findings (Hoopwood, Leiner & Young 2008). Fraud detection and prevention on the other hand refers to set of policies and procedures (broadly referred as controls) which in their aggregate minimize the likely hood of fraud happening and maximize the possibility of detection in the event fraud transpires (Blount and Ernest 2003).

Donald Cressey (1950) author of the Fraud Triangle theory, cited "Opportunity" as a requisite for fraud to occur. He argued that opportunity occurs when organization's internal controls or system of governance is ineffective hence allowing individuals to perpetrate fraud. According to this theory three elements of (Pressure, Opportunity and Rationalization) must exist for fraud to occur and therefore this theory presupposes that fraud can reduce significantly if the three factors within organizations are well handled and managers should be aware such factors. Rational Choice Theory (1964) by Cesare Beccaria described white collar crime as a life of balancing choices and determining which among the choices offers the best reward. In his theory, Beccaria alluded that individuals are motivated to commit crimes when they perceive low likely hood that they will be caught

and even if they are caught the benefits of those crimes outweigh the costs. When organizations adopt swift and severe actions towards crime, the greater the possibility that penalties will curb criminal behavior. Therefore punitive measures instituted by organizations towards perpetrators of fraud can be a measure to prevent fraud. Gollwitzer (1990) argued that forensic accountants have professional skepticism which prompts them to investigate existence of fraud in an organization. In his study, he stated that people are afraid to commit fraud when they perceive that a forensic audit could be done to expose their fraudulent actions.

Routine Activity Theory by Felson and Cohen (1979) argued that crimes are an outcome of convenience and therefore individuals would commit white collar crimes at work since they have easy access to commit them. The theory alludes that individuals become vulnerable to commit criminal activities due to their situation and by virtue that they have the opportunity to perpetrate the crimes. Organizations can therefore contend crime by ensuring that they close all the loopholes that create convenience for employees to commit fraud. Kanu and Okarafor (2013) found in their study that the root cause of fraud depends on the environment. Organizations can reduce losses significantly by enhancing their capacity to prevent, detect and response to fraud. Entities can prevent fraudulent activities and improve productivity by implementing more robust anti-fraud measures. Houck et all (2006) averred that forensic accountant techniques and skills can be of great help to forensic accountants in detecting fraudulent practices and in identifying and preserving evidence.

The research will focus on how adoption of forensic accounting practices will impact fraud detection and prevention within deposit taking SACCOs in Nairobi County. The term

SACCO stands for Savings and Credit Cooperative Organization. Deposit Taking-SACCOs are those that accept demand deposits hence they offer savings accounts with withdraw-able services just like banking institutions. According to SASRA, the SACCO supervision annual report for 2017 indicated that 8.64% of suspected fraud was reported within Deposit Taking SACCOs. Furthermore, 20% of the complaints raised by the public to SASRA related to giving of non-authorized loans, fraudulent or erroneous or non-consented loan deductions and the calculation of interests and other levies paid in relation credit advances and other loans facilities.

Recently, major deposit taking SACCOs in Kenya such as Mwalimu Sacco, Stima Sacco and Harambee Sacco among others have hit headlines with fraud related incidents. As a result of this challenge, Deposit taking SACCOs have embraced forensic accounting practices to prevent and detect fraud. DT SACCOs have adopted Data-mining techniques in the investigation of fraud to identify relationships or transactions with anomalies within a set of data being reviewed. Due to the huge number of deposit and other transactional accounts, Data mining technique is useful in Anti Money Laundering assignments to unearth suspicious transactions and relationships between accounts, and related questionable entities. Ratio and trend analysis techniques have also been useful to detect sudden and abnormal changes within financial statements. To enhance integrity of financial statements and reporting requirements, DT SACCOs compare ratios of prior years to the current period and any abnormal trend is further investigated to establish whether financial statement fraud has occurred. Such unusual trends may include, abnormal increase in nonperforming loans, Increased Loan Write-offs, declined liquidity ratios, unauthorized withdrawals among others. Leading SACCOs such as Mwalimu, Stima and Harambee

SACCO have established fraud Investigation units to analyze any suspected transactions and implement remedies that will prevent a comparable breach from occurring in the future. The adoption of forensic accounting practices within deposit taking SACCOs has further been enhanced through the Presidential direction during the 97th International Cooperative day where the Ministry in charge of Co-operatives was tasked to speed up the formation of the National Co-operative Policy and implement the proposed Investigation Unit for Sacco Societies (Sacco Societies Fraud Investigation Unit) within SASRA.

1.1.1 Forensic Accounting Practices

Forensic accounting involves the application of finance, accounting, and auditing techniques to analyze and investigate matters in civil and criminal law with the aim to obtain the truth (Zia, 2010). Forensic accounting practices entails application of investigative skills and specialized techniques shown by forensic accountants in collation, analysis and assessment of evidence and thereafter interpret and present the facts in a court of law or alternative law enforcement forums (Durkin and Ueltzen, 2009). These services include Fraud Investigation, Litigation support and Dispute resolution.

Fraud investigation entails use of forensic techniques and tools to examine if fraud has been perpetrated and collect factual evidence to support the finding (Silverstone, Horward & Michael, 2004). Digital Investigation Manager (DIM) is a document management tool used in digital Investigations. The tool was developed to support and preserve digital evidence during computer forensic and incident response operations (Accountant Search 2011). DIM allows the investigation process to be arranged and organized on a "case by case" according to the host i.e. Workstation or laptop. It further allows forensic accountants to summarize all material information collected during investigations. Encase Tool is a

holistic forensic toolkit used by forensic accountants to analyze digital media such as Hard drives, networks, Database servers, flash discs among others during investigations. The tool has successfully been used in various court systems around the globe and it is globally known as a world leader in digital forensic, cyber security and e-discovery (Oliver & Shanoi, 2006). Data mining can be defined as the practice of searching huge volumes of data to establish patterns (Wells & Joseph 2006). This is a technique used by forensic accounting practitioners that provides models of database for the purpose of identifying trends and relationships among the data. For any organization, data plays invaluable importance and can give significant insight and information when analyzed and interpreted by an expert. For an organization, data can be for customers, suppliers, Bank accounts, reports from Surveys and other transactions. Investigators apply four steps in Data mining namely; Classify data, Cluster data, Regression and Association rule learning. From the data analysis, forensic accountants can develop fraud profiles from the patterns existing within the database and through interpretations of such patterns the investigator may uncover fraudulent activity. The use of this technique also provides opportunity to set up automatic red flags that will detect discrepancies in data that should be uniform (Ekeigwe, 2010). Other techniques used by forensic accountants to analyze financial data include Ratio and trend analysis. Ratio analysis examines data patterns to identify possible fraudulent transactions and further reveal anomalies in large volumes of data. Ratio analysis also detects specific transactions which are not familiar compared to the previous trends established.

Trend analysis is useful to investigators when analyzing movement of inventories vis a vis sales revenue. Outlier detection is a technique used by forensic accountants to establish the

difference between normal and abnormal transactions where patterns are developed based on information gathered. From the patterns observed, investigators would then identify and generate normal and abnormal behavior in the system where conclusions can be made in regards to various transactions. The technique is commonly used by financial institutions to detect money laundering activities. For instance a bank accounts holder who is a salaried worker receives salary on the 1st day of every month and suddenly his/her bank account receives a huge amount over and above the regular salary. Such a transaction becomes a matter of scrutiny and hence any unusual transactions or behavioral changes and patterns will attracts the attention of the fraud examiner. Outlier detection technique allows the investigator to scrutinize critical data instead of wasting time reviewing transactions that are normal. This techniques can be used by organizations to follow and study the behavior of suspected employees over a period of time.

Litigation support refers to the process by which accountants familiar with the commercial disputes provide consultation and advice to lawyers or assist attorneys to prosecute or defend a case in a court of law (National Association of Academics Journal, 2009). In some instances the support may relate to providing of relevant information and documentation and in some cases in involves evaluating the magnitude of losses upon conclusion of a court case. Litigation support requires a variety of skills but predominantly it ends by forensic accountants giving an opinion in a legal system as an expert witness on whether fraud has occurred. Omoniyi (2004), stated that the purpose of an expert witness is to help the court to draw a conclusion on a matter on which the court on its self may not have the required knowledge to decide. Document examination is a common service given under litigation support where forensic accountants mostly analyze handwriting and signatures

to determine cases of forgeries and alterations on documents. Once conclusions have been drawn the forensic expert would then give his expert opinion on how fraud was perpetrated through document forgery or alteration of material facts. In summary, a forensic accountant offer litigation support in the following ways; help in obtaining major documents to be used as evidence which is necessary when preparing to approve or disapprove a claim. Evaluation of relevant documents in the initial review of the case in order to determine possible areas of loss. To brief the attorney on monetary and financial implications about the case before trial begins. Advising the attorney during trials, specifically during cross examination of the opposing expert witness. Evaluating the expert reports of the opposing party and advice on the strengths and weakness of the position taken. Assist in negotiating settlement discussions and providing oral evidence during trial if the case must be determined in a court of law.

Dispute resolution refers to the process by which parties are encouraged to resolve their disputes without necessarily going through a trail (Fraud Examiners Manual, 2017). Dispute resolution has merits over the conventional litigation approach since it helps to protect business reputation between parties and provides a flexible and less costly solution to settle matters. In fraud cases, dispute resolution normally involves mediation or arbitration. Mediation refers to the process of using an independent third party who encourages the parties to arrive at a mutually agreed settlement on the matter of dispute (Christopher Moore, 2014). The fraud examiners manual, 2017 refers to arbitration as the process where a dispute is placed before an independent third party (arbitrator) who determines the outcome of the case. The arbitrator plays the role of a Judge/Jury by determining the case on its merits. Christopher Moore in his text entitled “The Mediation

process" alludes that use of experts is key to provide all parties with information that will be of value in resolving their differences. He further alludes that a forensic accountant can be appointed the role of a third party as "Data provider" or the role of a "Data arbiter" (an expert retained by one or more disputing parties to provide answers to fundamental questions on which the parties are disputing which they believe will be key to resolve their disagreements. A forensic accountant role in dispute resolution would involve identification of the various heads of loss and computation of the same and further be able to reduce data conflicts which usually deters the parties from reaching an agreed position.

1.1.2 Fraud Detection and Prevention

Fraud detection and prevention are set of policies and procedures which in their aggregate minimize the probability of fraud happening and maximize the possibility of detection in the event fraud transpires (Blount and Ernest C, 2003). As a result of significant increase in fraud resulting to loss of billions of dollars globally each year, different modern techniques for fraud detection and prevention are being developed and employed in many business sectors. The Fraud Examiners manual, 2017 refers to detection programs as those that maximize the likelihood of determining that fraud is occurring while preventive programs are those that minimize the likelihood of fraud occurring. Detective programs begin by identifying symptoms, indicators, or red flags which provides signals for the occurrence of fraud. They Include; Proactive audit procedures, Effective management oversight, and Reporting channels.

Proactive Audit Procedures illustrates the intention of management to aggressively point out possible fraudulent actions rather than waiting for cases to come to management's attention. These techniques include among others; Analytical review of red flags, Fraud

assessment questionnaire and Surprise audits, Wealth declaration by staff and lifestyle Audit, Close monitoring of dormant and suspense accounts.

Most of the employees involved in theft utilize the proceeds to improve their life. Such may include acquisition of luxurious vehicles, extravagant holidays, expensive clothes, holiday homes etc. Managers should be keen of such signs through effective management oversight. Furthermore, to increase the deterrent effect, workers should know that managers are watching for any unexplained or suspicious behavior of such nature. Reporting channels like an ethics hotline can be an integral tool of an anti-fraud control system. It is paramount that employees are made aware of existing reporting mechanisms, how to use them and be able to trust that they will report suspicious activities and remain anonymous without fear of victimization. Furthermore, employees should be made aware that reports of suspicious activities will be dealt with expeditiously.

Preventive programs under consideration includes; Background checks, Anti-fraud policy and Tone at the top. The most effective way to prevent employee fraud is to avoid hiring employees who have committed fraud in the past by conducting background checks. Prior to hiring, management should conduct a background check to gather detailed information about the employee being considered for hire and how his/ her past track record has been with employers and law enforcement agents. To have an effective fraud prevention programme, organizations should establish a well-documented Anti-fraud policy that explicitly outlines the person with the responsibility of handling fraud related matters in the organization. Operationalization of a formal anti-fraud policy communicates a strong message to workers that fraud will not be tolerated within the organization and further creates a platform where management can explicitly communicate its values, culture and

philosophy to implement a successful ethics program. The commitment and dedication of the Board and Senior Management forms the epicenter of an effective fraud prevention program which sets the "Tone at the Top". The commitment and dedication sets the foundation of the organization's antifraud and ethics culture. Notably, organizations may still experience corrupt culture despite having good policies and therefore there is need to implement a corporate culture founded on strong values and integrity. Implementation of an ethics and compliance culture goes beyond having a mere checklist of programs and requires the Board and senior management to demonstrate to employees through words and deeds that the organization will not condone unethical behavior.

Fraud prevention is the most efficient method in reduction of losses and cost of fraud since once a fraud has occurred, the occurrence can be detected but the loss is difficult to recover. (Singleton and Singleton 2010). Fraud prevention involves creating and maintaining a honesty and ethical culture and developing measures to mitigate the risk and eradicate the opportunities to commit fraud (Zimbleman and Albrecht 2012). As per the Association of Certified Fraud Examiners (ACFE), majority of corporate frauds (33%) are detected through tips. The party giving the "Tip" may be an Employee, a Vendor, a Customer, or a person who chooses to remain anonymous hence the reason why it is critical for any organization to implement a channel through which individuals can report any fraudulent actions.

1.1.3 Forensic Accounting and Fraud Detection & Prevention

Gray (2008) suggested that organizations employ forensic accounting methods to help in instituting fraud prevention measures and effective internal controls. Gray examined forensic accounting as integration of both audit and investigation techniques. Of late,

auditors and accountants have found forensic accounting as a field of interest since it plays a critical role in fraud detection. Fiia (2013), while studying the impact of forensic accounting in detecting and preventing fraud within organization, fraud prevalence was noted to significantly reduce when forensic accounting was applied in the public sector. Koh, Arokiasamy and Suat (2009), studied to examine the level of public perception towards fraud detection using forensic accounting and concluded that forensic accounting aids in detecting and reduces financial fraud. Furthermore, they noted that most of audit companies adopt forensic accounting techniques to investigate financial records to detect any engagement in fraudulent activities by individuals. Kasum (2009) studied the importance of forensic accountants towards financial fraud among developing economies. He concluded that forensic accounting' services are necessary to combat fraudulent or corrupt dealings more so in public sector. Onuorah (2011) studied on the impact of forensic accounting services on fraud detection in Nigerian banks and concluded that the services of forensic accountants provide banks with the needed tools to prevent fraud. Of late, auditors and accountants have found forensic accounting as a field of interest due to the critical role it plays in fraud detection and prevention. A nationwide survey done by Kessler depicted that almost 40% of institutions have embraced forensic accounting as a result of increased fraud and other economic related crimes.

1.1.4 Deposit Taking SACCOs in Nairobi County

The term SACCO stands for Savings and Credit Cooperative Organization. A SACCO aims to bring together people with a common social goal and objective. In Kenya, SACCOs have come out strongly as dominant vehicle in the Micro finance sector that have spearheaded savings and investment within their members and economy at large. The

Deposit Taking-SACCOs are those that accept demand deposits hence they offer savings accounts with withdraw-able services just like banking institutions. Non Deposit Taking SACCOs are those that accept savings (deposits) from their members; which are strictly used as security for credit advances issued to members. These deposits cannot be withdrawn by the members and are only refundable (less any liabilities owed by the member) when the member withdraws for the SACCO. The Sacco supervisory annual report 2017 showed that deposit taking SACCOs have mobilized deposits amounting to KES 305.3B and accumulated an asset base of KES 442.3B

The SACCO Societies Regulatory Authority (SASRA) is an entity charged with the mandate to regulate deposit-taking SACCO Societies in Kenya. SASRA is mandated to regulate, license and supervise SACCO institutions in compliance with the SACCO Societies Act of 2008. According to SASRA, the SACCO supervision annual report for 2017 indicated that 8.64% of suspected fraud was reported within Deposit Taking SACCOs. Furthermore, 20% of the complaints raised by the public to SASRA related to giving of non-authorized loans, fraudulent or erroneous or non-consented loan deductions and the calculation of interests and other levies paid in relation credit advances and other loans facilities. Mugwe (2012) pointed out fraud in Harambee SACCO head quartered in Nairobi County where members paid loans through cashiers who made entries into the system but the money was not banked by the said cashiers. Similarly, on March 28 2018 the Star daily published a story about a senior manager of Harambee SACCO who was charged with stealing 13.6 Million. Recently, major deposit taking SACCOs in Nairobi County such as Mwalimu Sacco, Stima Sacco and Harambee Sacco among others have hit headlines with fraud related incidents. As a result of this challenge, Deposit taking

SACCOs have embraced forensic accounting practices to prevent and detect fraud. During the 97th International Cooperative day, the President Uhuru Kenyatta directed the Ministry in charge of Co-operatives to speed up the formation of the National Co-operative Policy and implement the proposed Investigation Unit for Sacco Societies (Sacco Societies Fraud Investigation Unit) within SASRA.

According to SASRA's Sacco Supervision annual report 2017, Nairobi County had the highest concentration of registered Head offices (42) of deposit taking SACCO's. As at 31st December 2018 a total of 42 deposit taking SACCOs were operational in Nairobi County licensed by SASRA which will be considered under this study. As per International Cooperative Alliance (ICA, 2002), deposit taking SACCOs remain critical players within the economy in the provision of financial services and provide wider and accessible outreach than any other type of Financial Institution. On this premise, it is worth conducting a study on how forensic accounting practices would impact fraud detection and prevention within Deposit taking SACCOs in Nairobi County.

1.2 Research Problem

Fraud is a universal challenge that affects all organizations across all industries. Fraud results to losses and in some cases may lead to complete closure of business. Of late, there has been an increase in corporate fraud globally which has resulted to the downfall of many organization. (Kabir 2009). Increased participation of forensic accountants will not only lead in early fraud detection, but also lead to mitigation of such crimes hence reducing the huge losses to the Kenyan economy. Statistics from the Ministry of cooperative Development (2008), indicate that financial statement fraud is the most prevalent malpractice facing cooperative societies in Kenya. This has resulted to several changes to

the cooperative society ACT of 1997 with the main objective being to strengthen financial disclosures and controls within Sacco's. However, despite the reforms fraud has continued to occur within Sacco's despite efforts by the regulator to closely inspect and monitor them (Lari 2009). In the recent past major SACCOs in Kenya such as Mwalimu SACCO, Ekeza SACCO, Harambee SACCO among others have been victims of fraud.

Many international and local studies have been conducted on Forensic accounting and its relationship to fraud detection and prevention within organizations. Owajori et al, (2008) examined the challenges in the corporate world and concluded that fraud detection in the current corporate firms had been significantly reduced through the use of forensic accounting. Enofe, Okpako and Etube (2013) studied on the impact of forensic accounting on fraud detection in Nigerian firms and concluded that services of forensic accountants give organizations the requisite tools to prevent fraud although they do not stop fraud from happening.

Amake & Ikhatua (2016) studied the connection between Forensic accounting and Fraud detection within the Nigerian public entities where they sought to establish if forensic accounting was of any importance in detection and prevention of fraud. The study established that the field of Forensic accounting takes a vital role in protecting public sector of Nigeria against economic and financial fraud. Ogundana, Okere, et al (2018) studied to examine the role played by Forensic accountants in detection and prevention of fraud within Nigeria's banking sector. The study asserted that forensic accounting impacts positively fraud detection and prevention thus firms that wish to expand with minimal levels of fraud must put measures and enough resources to practice forensic accounting within their departments. Locally, (Wanjohi, 2011) found that adoption of Forensic

accounting was a key measure towards the reduction of audit expectation gap. Omondi (2013) studied to examine how forensic accounting services contributes to fraud detection and prevention within Banking sector in Kenya. The study revealed that there was increased fraud detection when Forensic accounting services are adopted. Opiyo (2017) examined the contribution made by Forensic accounting services towards mitigating fraud within the Kenyan public sector and sought to determine the importance of these services in detection and prevention of fraud specifically within Parastatals in Kenya.

Following the unending cases of fraud within Sacco's, there is need to institute measures to detect and prevent fraud in order to strengthen sustainability of this sector. The current financial ratios computed by Sacco's in Kenya may not be of great help to users of financial statements towards unearthing fraudulent transactions. Other measures are therefore required to unearth fraud in the Sacco's (Lari 2009). While several research studies have been done globally on the area of fraud, in our local context (Kenya) most researchers have concentrated on the banking and insurance sector. Few studies have primarily focused on deposit taking Sacco's and how application of forensic accounting practices would assist in detecting and preventing fraud. This creates a potential knowledge gap that this research would seek to bridge. This study seeks to establish how forensic accounting practices can be of use towards deposit taking SACCOs in Kenya and how the practice will influence fraud detection and prevention within this critical sector. In view of the above made observation and the research gap depicted, this research will seek to answer the question; Does Forensic Accounting impact fraud detection and prevention among deposit taking SACCOs in Nairobi County?

1.3 Research Objective

To establish the impact of Forensic accounting practices on fraud detection and prevention among Deposit taking SACCOs in Nairobi County.

1.4 Value of the study

Senior management of SACCOs and the industry at large will benefit since the study findings can be factored when decisions to prevent and detect fraud are made by management. Managers will therefore be more equipped in understanding how they can practically employ forensic accounting practices in fraud detection and prevention. Entities like Association of Certified Fraud Examiners (ACFE), Institute of Certified Public Accountants of Kenya (ICPAK), and Institute of Internal auditors (IIA), will benefit from this study as it will depict to what extent has forensic accounting been embraced by SACCOs in detection and prevention of fraud hence help in formulating measures to deepen the usage in future. Such measure may include organization of seminars and workshops on forensic accounting, review of Syllabus taught in professional courses especially those relating to forensic accounting.

Researchers and scholars will also benefit from this study by using the findings as a point of reference. Considering that this research specifically focuses on Deposit Taking SACCOs in Nairobi County, the findings will therefore be an important source of Secondary data for future research and studies in this area and specifically contribute to the Digital Repository for the University of Nairobi.

Furthermore, the study will assist the government regulator for SACCOs (SASRA) to understand how application of forensic accounting will assist in detection and prevention

of fraud within SACCOs and equip their staff accordingly to ensure that their oversight role is effective. The timely detection of fraud and its prevention within SACCOs will enable the regulator to be more efficient and effective in its mandate and formulation of policies that will operationalize SACCO fraud investigation unit with SASRA.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter will discuss various fraud theories and how they have contributed to the development of forensic accounting practices. For effective fraud detection and prevention, one must understand why people commit fraud, factors that must exist for fraud to occur and measures to employ to prevent and detect fraud.

2.2 Theoretical Review

There are several fraud theories. Below are some as depicted by various scholars.

2.2.1 Fraud Triangle Theory

This theory by Donald Cressey (1971) alludes that three elements (Pressure, Opportunity, and rationalization) must exist for a white-collar crime to take place. In1950, Donald Cressey, who was a known criminologist, conducted a study on fraud where he argued that in everything that people do, there must be a reason behind it. His quest to answer the question "Why people commit fraud" was the basis why his research focused mainly on what makes people to violate trust bestowed on them. Pressure refer to factors that influence or induce bad behavior to people. All perpetrators of fraud face some degree of pressure to commit unethical behavior (Mansor & Abdullahi 2015). Lister (2007) cited pressure as the key element in perpetrating fraud. The three kinds of pressure he identified are Employment stress, external pressure and personal pressure.

Opportunity is another key factor that must exist for fraud to occur. Opportunities occur when organization's internal controls or system of governance is ineffective hence allowing individuals to perpetrate fraud. Under opportunity, (Hartley & Kelly 2010) argued

that individuals will capitalize on the loopholes or control weaknesses before them by committing fraud. (Cressey 1953) found that when the risk of being caught is lower, then there are high chances for fraud to occur. The existence of opportunities to perpetrate fraud within organizations could be as a result of various factors and such may include non-adherence to policies, employee negligence and absence of disciplinary actions (Sauser, 2007). Wilson (2004) defined "opportunity" as being able to circumvent controls instituted to curb fraud. Rationalization happens when the perpetrator of fraud formulates a morally acceptable reason as a justification for engaging in unethical behavior. When an individual cannot justify his immoral actions, he or she is less likely to perpetrate fraud. Examples of rationalizations include, "I was only borrowing the money with intention to repay". It becomes hard to detect rationalization due to the difficulty in reading the fraudster's mind. Fraudsters usually bear a mindset which permits the fraudster to rationalize his criminal behavior (Hooper & Pornelli 2010). This theory therefore presupposes that fraud can reduce significantly if the three factors of Pressure, Opportunity and Rationalization within organizations are well handled and managers should be aware of such factors. Any effective fraud detection and prevention program by organizations should ensure that no opportunities exists for employees to commit fraud, no factors exist that may induce bad behavior to people and no mindset exists that would permit rationalization of fraudulent behavior.

2.2.2 Rational Choice Theory

The theory was created in 1964 by Cesare Beccaria which explained white collar crime as a life of balancing choices and determining which among the choices offers the best reward. Beccaria contended that the more severe the punishment for a particular crime, the more

likely that particular crime will be controlled. He therefore alluded that individuals are motivated to commit crimes when the benefits of those crimes outweigh the costs. The rationale theory is premised on the philosophy of "utilitarianism" and derives its origin from the belief that people are rational decision makers who make calculations before they act and would avoid pain in all their actions. Criminal actions become more appealing if the benefits of such actions are perceived to exceed the losses or consequences.

When organizations adopt swift and severe actions towards crime, the greater the possibility that penalties will curb criminal behavior. Therefore punitive measures instituted by organizations towards perpetrators of fraud can be a measure to prevent fraud. Organizations achieve deterrence to fraud by creating fear of the consequences which should be well communicated (Kimani, 2011). Three (3) major objectives for prosecuting fraud perpetrators is to discipline the fraud perpetrator as a measure to stop subsequent crime, creating a strong Tone and the top that unethical behavior will not be condoned, and obtain recovery of stolen assets whenever possible (Albrecht et all, 2009). Organizations will therefore engage the services of forensic accountants to enable possible prosecution upon identification of the offenders and possible amount of theft. When formulating fraud prevention policies, the dedication and commitment of senior managers and Board to punish crime forms the backbone of fraud prevention program.

2.2.3 Routine Activity Theory

This theory was established in 1979 by Felson Marcus and Cohen Lawrence. The theory argues that crimes are an outcome of convenience and therefore individuals would commit white collar crimes at work since they have easy access to commit them. Routine activity theory alludes that individuals become vulnerable to commit criminal activities due to their

situation and by virtue that they have the opportunity to perpetrate the crimes because they have access. Hillision & Pacini (2004) alluded in their model that one of the factors that allow misstatement of financial statements due to fraud is “the degree to which conditions allow management fraud to be committed”. Organizations can therefore contend crime by ensuring that they close all the loopholes that create convenience for employees to commit fraud. Such may include employing measure like Job Rotation, Segregation of duties, surprise checks among others. According to this theory, crime is influenced by three significant factors namely; The presence of targets victims such as individuals and organizations, Lack of suitable guardians such as Security, Auditors and Risk personnel and availability of Capable offenders such as disgruntled or financially distressed workers.

The growing cases of fraud within organizations have attracted interest in fraud detection and prevention and a lot of people agree that such frauds would have been avoided if organizations had put in place effective internal controls. (Nyakarimi & Karwirwa, 2015) alluded that fraud within organizations could be avoided through strong internal controls because it allows the organization to eliminate the environment that create easy access to commit fraud. Fraud prevention entails establishing a culture of honesty and high ethical standards and eliminating possible opportunities to commit fraud (Zimbleman and Albrecht 2012). Adoption of forensic accounting practices communicates management’s intention not only to detect any possible fraud but also to prosecute and recover stolen assets. Therefore Forensic accountants can play a critical role to stand in as the capable guardian who will not only prevent fraud but rather detect it in the event it occurs and assist in the prosecution of fraud perpetrators.

2.3 Determinants of Fraud Detection and prevention

Fraud is a critical risk in business that should be controlled if not eliminated. A well designed fraud detection system can substantially lower the probability of fraud taking place within the business environment. When fraud indicators (red flags) are timely detected, the higher the chances of loss recovery and better opportunity to strengthen the control weaknesses. Early fraud detection impacts directly on the organization's bottom line through reduction of losses while a robust preventive program serves as a deterrent tool to prospective fraudsters. Detection programs are those that maximize the likelihood of determining that fraud is occurring and include; Proactive fraud procedures, Effective management oversight, and Reporting channels. Preventive programs are those that minimize the likelihood of fraud occurring and include; Background checks, Anti-fraud policy and Tone at the top. Earlier studies examining methods of preventing and detecting fraud have identified red flags as possible indicators of fraud. Albrecht and Romney (1986) conducted a study within auditing practitioners and found that 31 out of 87 red flags linked to internal controls were regarded as better fraud predictors. Hillision & Pacini, (2004) presented a model that considered the likelihood of misstating financial statements due to fraud to be a function of three (3) variables namely; Management's intention to commit fraud, Opportunities for management to commit fraud, and Management's Ethical tone towards fraud.

Gerald, (2004) adopted the red flags concept to design another model for evaluating the likelihood of fraud. In his survey, he queried partners of 277 audit firms (big 6 firms) and concluded that evaluation of organization's internal controls by Auditors is key when assessing possibility of fraudulent activities to occur. Hylas & Ashon (1982) conducted a

study of 281 errors that required adjustments of financial statement on a sample of 152 audits. They concluded that majority of the errors were predicted through analytical review procedures. In his study, Blocher (1992) found that one out of six (1/6) fraudulent incidents were detected through analytical procedures. Calderon and Green (1994) sampled 455 fraud cases and found that 15% of the frauds were detected through analytical procedures. Moyes and baker (2003) surveyed on practicing auditors regarding effectiveness of fraud detection where they considered two hundred and eighteen (218) standardized procedures for audit. They concluded that 26% (56 of the 218) procedures were found more effective in fraud detection and that the best performing procedures were those giving evidence regarding the presence or capacity of internal controls. Fraud prevention stands as the most effective way to reduce losses occasioned by fraud since once a fraud has been committed, the occurrence may be detected but recovery of the loss can be difficult (Singleton and Singleton 2010). Fraud prevention entails establishing a culture of honesty and high ethical standards and eliminating possible opportunities to commit fraud (Zimbleman and Albrecht 2012). Ekechi (1990) stated that actions targeted for prevention of fraud among others include Duo control, Graduated levels of authorization, Reporting systems, Closed Circuit Television (CCTV), Established inspectorate departments, , Segregation of duties, Verification of signatures, Control of dormant accounts and close watch on the lifestyle of staff. The adoption of technology is paramount for operationalization of an effective and efficient fraud detection and prevention program.

2.4 Empirical Review

Numerous studies have been done to examine how forensic accounting and fraud detection relate. For such studies, majority derive their reference from developed economies such as

Canada, Europe and United States of America. In Africa various scholars have examined how forensic accounting relates to fraud detection and prevention. In Nigeria, (Kasum, 2009) studied the importance of forensic accounting in relation to fraud in developing countries. Kasum looked at the level of financial fraud committed and sought to establish which sector between private and public required the services of forensic accountant more. The study concluded that services of forensic accountants are needed in Nigeria to address financial crimes and corruption related issues. Gbegi and Okoli, (2003) researched on the role of forensic accounting and its significance as a tool for detecting and preventing fraud within public institutions specifically Kogi state in Nigeria. The study concluded that fraud occurrence in the public sector was significantly reduced through forensic accounting. The study further depicted that forensic accounting services contribute towards detecting and preventing fraud within public institutions.

Dada, Owolabi and Okwu (2013), studied the significance of forensic accounting and its resultant impact on reduction of fraud in Nigeria. The study revealed that forensic accounting services and fraud reduction correlate positively. Enofe, Okpako and Etube (2013) studied on the impact of forensic accounting on fraud detection in Nigerian listed firms and concluded that services offered by forensic accountants provide organizations with the requisite tools to prevent fraud but do not stop fraud from happening. Boritz, Kotchetova and Robinson (2008) in their study were able to affirm that forensic accountants were able to identify a higher number of frauds compared to auditors. Mock, Srivastava and Turner (2003) conducted a study which revealed that procedures in forensic audit substantially lowers the risk of fraud. Additionally, research has confirmed that computer aided analytical tools such as proactive forensic data analysis can unearth frauds

that could have remained undetected for several years (Aiken, Brown and Visser 2007). Bierstaker et al. (2006) examined the opinion of accounting practitioners towards techniques used in detecting and preventing fraud. The study depicted that forensic accounting was rarely used by organizations as a method to fight fraud although it had the most effective score. This study coincided with the outcomes of global fraud survey by Ernst and Young's (2003) that showed only 20% of companies hired forensic accounting services even though the service recorded highest satisfaction level.

Njanike et al. (2009) conducted a study which examined how Forensic Audit contributes in Detection of Frauds within banks. The study which was done in Zimbabwe concluded that forensic auditors had the mandate to detect any potential fraud in banks and where possible should conduct investigations of present cases as well as suggest effective ways to prevent occurrence of such frauds. Chi-Chi and Ebimobowei (2012) studied the impact of forensic accounting services on fraud detection within banks in Nigerian. The study concluded that deployment of forensic accounting services by banking institutions will to a great degree deter bank employees from engaging in fraudulent actions. They further, reiterated that deployment of forensic accounting services reduces the extent of fraud within banking institutions. Owajori et al, (2008) examined the challenges in the corporate world and concluded that fraud detection in the current corporate firms had been significantly reduced through the use of forensic accounting. Amake & Ikhatua (2016) studied the connection between Forensic accounting and Fraud detection within the public sector in Nigerian where they sought to establish if forensic accounting was of any importance in detecting and preventing fraud. The study concluded that the field of Forensic accounting occupies a major role in protecting the public sector in Nigeria against

economic and financial fraud. Ogundana, Okere, et al (2018) studied to examine the role played by Forensic accountants in detection and prevention of fraud within Nigeria's banking sector. The study asserted that forensic accounting impacts positively fraud detection and prevention thus firms that wish to expand with minimal levels of fraud must put measures and enough resources to practice forensic accounting within their departments.

In Kenya, Ogunda (2015) researched on how organization's internal controls impact on detection and prevention of fraud. The study was done in Kakamega at the County's treasury department. Ogunda concluded that efficient internal control system and fraud detection and prevention have a positive correlation. Kimani (2011), studied on fraud risk assessment plan- case study on Barclays Bank- with an objective to explore on various aspects of fraud detection, prevention and guidelines that can be adopted by Barclays bank to mitigate fraud. In his study he noted that fraud mainly occurred through theft of money or physical assets and most were reported through tips. The study concluded that Barclay's banks can reduce frauds if their risk assessment team complies fully to the fraud risk assessment strategy which has been put in place.

Gichuki (2009) examined factors that influence the utilization of forensic accounting services in detecting frauds within banking institutions in Kenya. The study's objective was to investigate which factors determine use of forensic accounting services by banks within Kenya. Descriptive study design was adopted with a population of forty-two licensed commercial banks from which a sample of twenty-one banks was selected. The study revealed that forensic accounting services are rarely used by commercial Banks in Kenya in fraud detection due to little awareness of forensic accounting services, high cost,

and lack of easy access to such services. Opiyo (2017), studied on the role of forensic accounting in fraud mitigation within Kenyan parastatals. The study sampled 53 respondents which comprised of Top, Middle and lower level managers. In his study he concluded that all parastatals in Kenya have employed proactive measures in fraud audit and strong internal controls which have greatly helped in mitigation of fraud. The study also concluded that parastatals in Kenya have employed measures such as compliance policies and segregation of duties to help in mitigating fraud within their operations. (Wanjohi, 2011) identified adoption of Forensic audit as a key measure to the reduction of audit expectation gap. Omondi (2013) studied to examine how forensic accounting services contributes to detecting and preventing fraud within Kenyan Banks. The study revealed that there was increased fraud detection when Forensic accounting services are adopted.

2.5 Conceptual Framework

The framework shows how forensic accounting practices (independent variable) relates to fraud detection and prevention (dependent variable). The model sought to determine how forensic accounting practices would impact fraud prevention detection within deposit taking SACCOs in Nairobi County

Independent Variable **Dependent Variable**

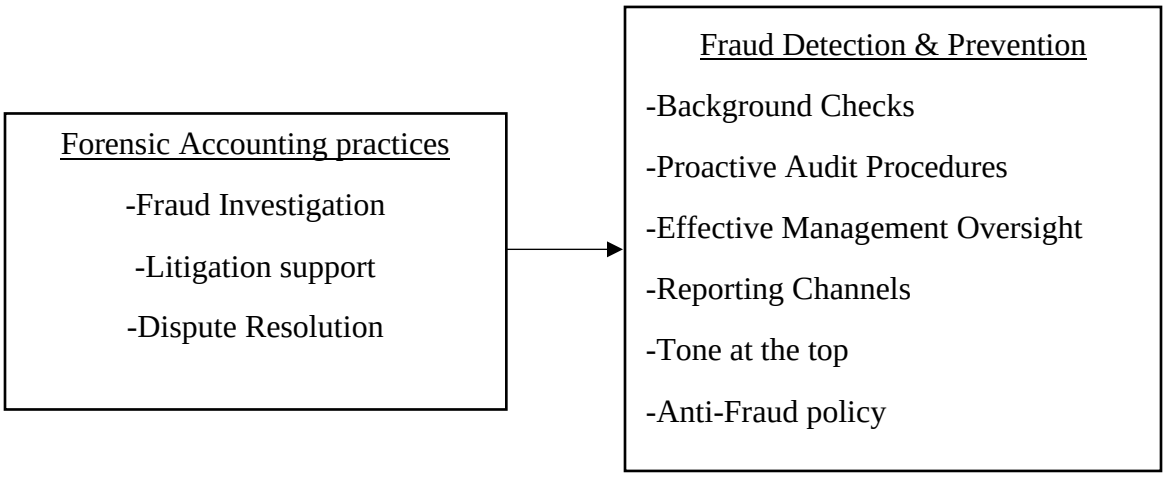


Figure 2. 1: Conceptual Model

Source: Author (2019)

2.6 Summary of Literature Review

From the review of the literature above, it is apparent that a number of scholars have researched on forensic accounting looking at the broad aspects of how the practice impacts on the business cycle and its application on various business sectors ranging from Banking, Public companies, County government and many others. What comes out from the previous studies i.e. Gichuki, 2009, Kimani, 2011, Opiyo, 2017, Kasum 2009 (Nigeria) and Gbegi and Okoli (Nigeria) and the convergent point of many researchers is that forensic accounting services are largely employed for detection and prevention of fraud despite the fact that other challenges exist such the availability and cost of such services. Although most studies allude that forensic accounting services helps to detect and prevent fraud, Enofe, Okpako & Etube (2013) concluded that Forensic accounting only provides requisite tools to prevent fraud but does not stop fraudulent activities. Whereas different sectors have been considered under the study of forensic accounting, few studies have specifically focused on SACCOs in Kenya despite the fact that they greatly contribute to the national GDP hence their existence and sustainability should remain a priority to the Kenyan economy. One way on how this can be achieved is to ensure that these institutions have programs in place for fraud detection and prevention hence the purpose of this study. Therefore the gap that this study will be attempting to fill is to examine the impact of forensic accounting services on fraud detection and prevention among deposit taking SACCOs in Nairobi County.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter looked into the methodology that was used to conduct the study and focused on Research Design, Targeted Population and the data collection methods and how data was analyzed.

3.2 Research Design

This study adopted both cross sectional survey and descriptive research design since it is aimed at describing the current affairs as they exist and involves data collection that will be used to answer the question "Does forensic accounting have an impact on fraud detection and prevention within deposit taking SACCOs in Nairobi County"? Descriptive research is an appropriate when the research aim is to identify trends and correlations among variables and when not much is known about the topic or problem (Shona, 2019).

3.3 Population

The population constituted of deposit taking SACCOs that have been operational within Nairobi County as at December 2018. SASRA has categorized Deposit taking SACCOs per county where Nairobi has the highest number of Deposit Taking SACCOs. As at 31st December 2018, there were 42 operational licensed deposit taking SACCOs in Nairobi County. The choice of Nairobi County was due to the fact that it has the highest concentration of deposit taking SACCOs all of which had their Headquarters located within Nairobi thus enabling ease of data collection.

3.4 Operationalization of the variables

The Dependent variable in the study is Fraud Detection and prevention which include; Background Checks, Proactive Fraud audits, Effective Management oversight, Reporting Programs, Tone at the top and Anti-fraud Policy. Considering that the dependent variable is multi-dimensional, a composite Index was used. A composite index refers to variables combined into one index based on an underlying multidimensional concept being measured. It is used to measure multivariate factors not captured by a single variable. In this study the dependent variable had six (6) sub-variables from which an overall statistical composite mean was calculated sing SPSS. Independent variables are the forensic accounting services which include; Litigation support, Fraud Investigation and Dispute Resolution. Multiple regression model was applied to determine how the Independent variable impacts on the Dependent variable.

3.5 Data Collection

Primary data were collected through self-administered questionnaire, which were circulated to the respondents. The Questionnaires comprised of closed ended questions and were distributed to top management staff in Finance, Internal Audit and Risk & Compliance who are familiar with forensic accounting practices.

3.6 Data Analysis

The study adopted descriptive and inferential statistics for data analysis. The data collected was analyzed, then interpreted using Mean, Frequency, Standard deviation and Percentage then present the findings using tables. The study used Multiple Linear Regression analysis to measure the impact of Independent variable on Dependent variable. Data Analysis was done using SPSS version 24.

3.6.1 Analytical Model

Regression analysis was used to determine relationship between Independent and Dependent variable and will take the form {$\mathbf{Y= a+ B_1X_1+B_2X_2+B_3X_3+ e}$} whereby

Y= Dependent variable fraud Detection and prevention as measured by the composite Index

$\mathbf{X_I}$= Litigation Support $\mathbf{X_2}$= Fraud investigation, $\mathbf{X_3}$= Dispute Resolution

$\mathbf{B_1, B_2, B3,}$ = Regression coefficients, **a**= is a Constant, **e**= Error term.

The above model was used by Ogundana & Okere, 2018 when they examined forensic accounting and fraud detection and prevention in Nigerian banking industry.

CHAPTER FOUR: DATA ANALYSIS RESULTS AND DISCUSSIONS

4.1 Introduction

The main objective of this study was to establish the impact of forensic accounting practices on fraud detection and prevention among deposit taking SACCOs in Nairobi County. The population was 42 Deposit taking SACCOs which are domiciled in Nairobi County. As at 31st December 2018, there were 42 licensed deposit taking SACCOs in Nairobi County with their headquarters domiciled in Nairobi County. Respondents were presented with statements describing the various questions on the objective of the study. The study applied a structured questionnaire, which contained close-ended statements. The Statistical Package for Social Sciences (SPSS version 24) was used to run descriptive, inferential statistics, which included frequency, percentages, mean, and standard deviation. In order to simplify the discussions, the researcher provided tables and figures that summarized the collective reactions and views of the respondents. The interpretation of the results focused on the overall objective of the study.

4.2 Response Rate

There are 42 licensed deposit taking SACCOs in Nairobi City County. The population of the study was 42 respondents representing the 42 licensed deposit taking SACCOs. Those who filled and returned questionnaires were 37 respondents making a response rate of 88.1%, while the non-responsive sample was 5 respondents who constituted 11.9% as presented in table 4.1. Although majority of researchers do not agree on the appropriate level of response rate to establish the basis for data analysis, Nachmias and Nachmis (2004) suggest that a response rate of above 50% is acceptable and represents a good basis for data analysis. Morris (2008) supports this argument that for a social study, responses bearing

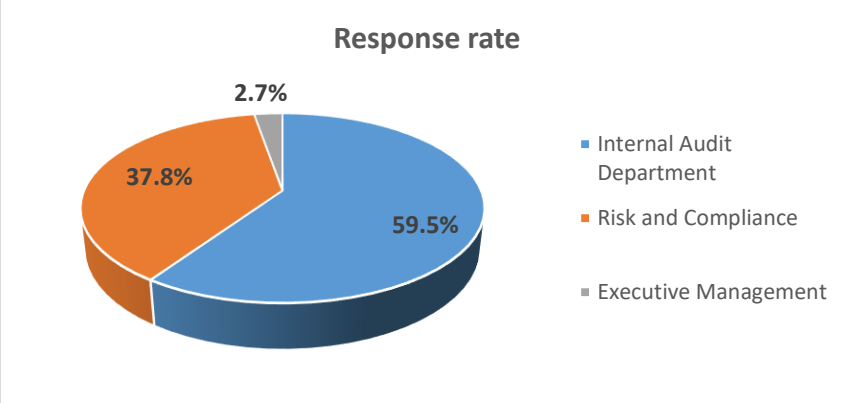
over 60% response rate are sufficient for making adequate research conclusions. The researcher therefore considered that the 88.1% response rate achieved was adequate since it was above 50%, and that this would provide sufficient information for analysis and drawing of conclusions of the study will be satisfactory.

Table 4. 1: Response Rate

Category	Frequency	Percentage
Response	37	88.1
Non-Response	05	11.9
Total	**42**	**100.0**

Source: Research data (2019)

Figure 4. 1: Response rate



4.3 Organizational Demographics

The organizational demographics used for the study focused on the department that respondents worked in, level of management, and duration worked in the organization.

4.3.1 Respondents' Department

The study sought to establish the department that respondents worked as a basis of determining their familiarity with forensic accounting practices and their usefulness in fraud detection and prevention. Analysis of the collected data was detailed in Table 4.2.

Table 4. 2: Respondents' Department

Department	Frequency	Percent
Internal Audit Department	22	59.5
Risk and Compliance	14	37.8
Executive Management	1	2.7
Total	**37**	**100.0**

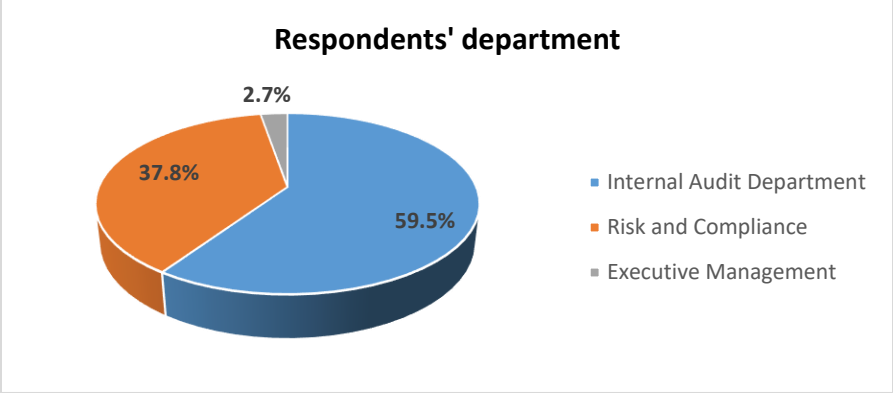


Figure 4. 2: Respondents department

As detailed in table 4.2, it's worth to note that majority (59.5%) of the respondents worked in the internal audit department, while 37.8% and 2.7% worked in risk and compliance department and executive management department respectively. This finding reveals that majority of the respondents in the organizations considered understood the research topic since they were work in departments that deal with fraud detection and prevention.

4.3.2 Management Level

Data on the level of management was solicited with a view of establishing the designation of the respondents. The respondents included the top level management and middle level management. The research chose to deal with the foresaid senior managers in these organizations since they fully participate in the companies' formulation of fraud detection and prevention practices. Analysis of the collected data was presented in Table 4.3.

Table 4. 3: Level of Management

Management Level	Frequency	Percent
Top Level Management	16	43.2
Middle Level Management	20	54.1
Not specified	1	2.7
Total	**37**	**100.0**

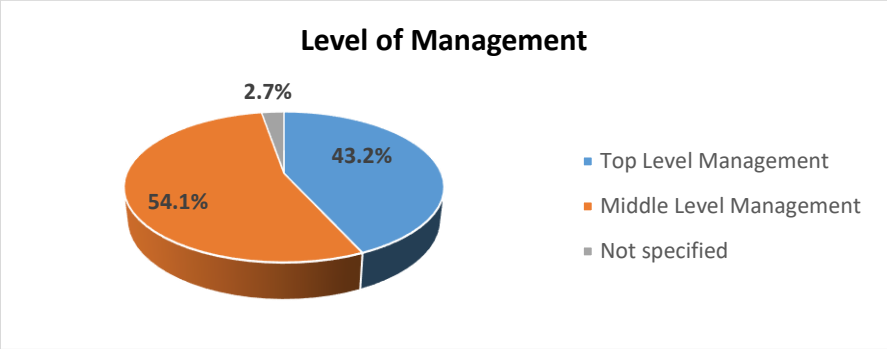


Figure 4. 3: Level of Management

It is evident from table 4.3 that more than half (54.1) of the respondents were in the middle level management, while 43.2% in top level management. One respondent did not specify level of management. A higher response rate for middle level management representatives was because they oversee the day-to-day running and implementation of forensic accounting practices of their respective organizations.

4.3.3 Respondents' Work Experience

The work experience of the respondents was determined by the number of years they worked in their current specified organizations. The work experience was measured in the range of 0-5 years, 5-10 years and over 10 years. The number of the respondents' work experience within each company was grouped according to the range of the years worked in the organization. Analysis of the collected data was detailed in Table 4.4.

Table 4. 4: Work Experience

Working Duration	Frequency	Percent
0 to five Years	14	37.8
5 to 10 Years	13	35.1
Over 10 Years	9	24.3
Not specified	1	2.7
Total	**37**	**100.0**

Source: Research data (2019)

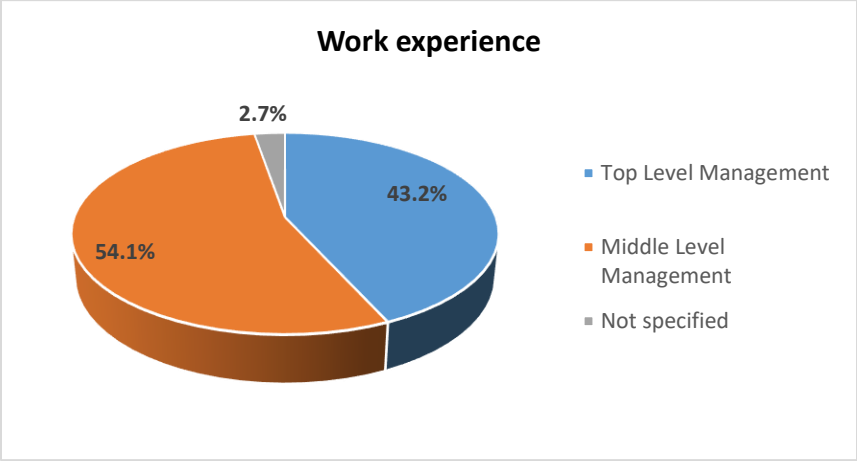


Figure 4. 4: Work experience

Table 4.4 illustrates that majority (37.8%) of the respondents had worked up to 5 years, while 35.1% had a working duration of 5 to 10 years, whereas almost a quarter (24.3%) had worked over 10 years. One respondent did not specify the working duration. This finding implies that most of the respondents had worked for a period exceeding five years, thus they possess knowledge on the application of forensic accounting practices and how they aid detection and prevention of fraud.

4.4 Descriptive Analysis of Independent Variable

This section covers descriptive statistics in relation to the predictor variables (litigation support, fraud investigation, and dispute resolution) and dependent variable (fraud

detection and prevention). Descriptive statistics employed in the study include: frequencies, percentages, mean, and standard deviation. Descriptive statistics were used to draw patterns and trends of the data.

4.4.1 Litigation Support

This section sought data on the impact of litigation support practice in detection and prevention of fraud among deposit taking SACCOs in Nairobi County. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not at all”, 2 is “To a Little extent”, 3 is “To a moderate extent”, 4 is “To a Great extent”, 5 is “To a very Great extent”). Analysis of the collected data was analyzed in Table 4.5.

Table 4. 5: Litigation Support

	Not at all	Little Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Deviation
Providing assistance of an Accounting Nature in matters involving existing or pending court cases.	0.0%	5.4%	18.9%	64.9%	10.8%	3.8108	.70071
Quantification of economic or financial damages for matters in court.	2.7%	8.1%	13.5%	43.2%	32.4%	3.9459	1.02594
Providing expert evidence and testimony in court	5.4%	5.4%	8.1%	48.6%	32.4%	3.9730	1.06684
Document examination to determine forgeries and alterations.	0.0%	5.4%	21.6%	45.9%	27.0%	3.9459	.84807
Advisory on effective ways of presenting facts for trial in fraud cases	2.7%	0.0%	29.7%	45.9%	21.6%	3.8378	.86646
Interrogation of other expert reports presented in courts.	0.0%	5.4%	32.4%	37.8%	24.3%	3.8108	.87679
Advising on the validity of claims for cases presented in court and settlement negotiations.	2.7%	2.7%	13.5%	45.9%	35.1%	4.0811	.92431

Table 4.5 illustrates that majority (64.9%) of the respondents agreed to a great extent that providing assistance of an Accounting Nature in matters involving existing or pending

court cases is important in fraud detection and prevention as supported by a mean of 3.8108 ad standard deviation of 0.70071. Moreover, respondents agreed to a great extent that providing expert evidence and testimony in court is essential with a mean of 3.9459 and standard deviation of 1.02594. Respondents agreed to great extent that they provide expert evidence and testimony in court as supported by a mean of 3.9730 and 1.06684.

Respondents agreed that document examination is key to determine forgeries and alterations as supported by a mean of 3.9459 and standard deviation of 0.84807. It was precise from the data collected that respondents agreed to a great extent on advisory on effective ways of presenting facts for trial in fraud cases as supported by a mean of 3.8378 and standard deviation of 0.86646. Respondents agreed to a great extent that interrogation of other expert reports presented in courts with a mean of 3.8108 and standard deviation of 0.87679. Respondents agreed to a very great extent that advising on the validity of claims for cases presented in court and settlement negotiations as shown with a mean of 4.081 and standard deviation of 0.92431.

4.4.2 Fraud Investigation

This section sought data on the impact of fraud investigation practice in detection and prevention of fraud among deposit taking Saccos in Nairobi County. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not at all”, 2 is “To a Little extent”, 3 is “To a Moderate extent”, 4 is “To a Great extent”, 5 is “To a very Great extent”). Analysis of the collected data was analyzed in Table 4.6.

Table 4. 6: Fraud Investigation

	Not at all	Little Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Deviation
Investigation of any red flags identified during routine audits	0.0%	2.7%	13.5%	18.9%	64.9%	4.4595	.83648
Using ratio and trend analysis Review of financial statements and probe suspected financial transactions	0.0%	8.1%	24.3%	48.6%	18.9%	3.7838	.85424
Performing digital forensics on electronic devices	0.0%	0.0%	27.0%	29.7%	43.2%	4.1622	.83378
Fraud risk assessment and conducting employee anti-fraud education.	0.0%	2.7%	35.1%	27.0%	35.1%	3.9459	.91122
Investigating alleged fraud or illegal activities	5.4%	10.8%	21.6%	29.7%	32.4%	3.7297	1.19370
Conducting proactive fraud audits on high risk areas.	2.7%	2.7%	29.7%	21.6%	43.2%	4.0000	1.05409
Conduct Data analysis on transactions to identify any abnormal trends.	0.0%	10.8%	24.3%	18.9%	45.9%	4.0000	1.08012

Table 4.6 illustrates that majority (64.9%) of the respondents agreed to a very great extent on the statement on investigation of any red flags identified during routine audits with a mean of 4.4595 and standard deviation of 0.83648. Respondents agreed to a great extent

that ratio and trend analysis can be used for Review of financial statements and probe suspected financial transactions with a mean of 3.7838 and standard deviation of 0.85424. Respondents agreed to a great extent that their organization undertook digital forensics on electronic devices with a mean of 4.1622 and standard deviation 0.83378. Statement on Fraud risk assessment and conducting employee anti-fraud education had a mean of 3.9459 and standard deviation of 0.91122, while investigating alleged fraud or illegal activities had a mean of 3.7297 and standard deviation of 1.19370. Respondents agreed to a very great extent that conducting proactive fraud audits on high risk areas as supported by a mean of 4.0000 and standard deviation of 1.05409, while the statement on conduct Data analysis on transactions to identify any abnormal trends had a mean of 4.0000 and standard deviation of 1.08012.

4.4.3 Dispute Resolution

This section sought data on the impact of dispute resolution practice in detection and prevention of fraud among deposit taking Saccos in Nairobi County. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not at all”, 2 is “To a Little extent”, 3 is “To a Moderate extent”, 4 is “To a Great extent”, 5 is “To a very Great extent”). Analysis of the collected data was analyzed in Table 4.7

Table 4. 7: Dispute Resolution

	Not at all	Little Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Deviation
DR is a useful tool used for resolving disputes outside the courtroom and traditional litigation?	0.0%	8.1%	40.5%	32.4%	18.9%	3.6216	.89292
DR preserves the reputation of litigants and creates high chances to recover stolen assets	0.0%	0.0%	43.2%	48.6%	8.1%	3.6486	.63317
DR encourages self-confession by fraudsters who may disclose other facts that may be useful to strengthen controls and curb subsequent frauds.	0.0%	18.9%	32.4%	37.8%	10.8%	3.4054	.92675
Computed mean						**3.559**	**0.8176**

Table 4.7 indicates that majority of the respondents agreed to a great extent that DR is a useful tool used for resolving disputes outside the courtroom and traditional litigation as supported by a mean of 3.6216 and standard deviation of 0.89292. Respondents agreed to a great extent that DR preserves the reputation of litigants and creates high chances to recover stolen assets with a mean of 3.6486 and standard deviation of 0.63317, whereas respondents agreed to a great extent that DR encourages self-confession by fraudsters who

may disclose other facts that may be useful to strengthen controls and curb subsequent frauds as supported by a mean of 3.4054 and standard deviation of 0.92675. Results in this section imply dispute resolution is an indispensable tool that supports detection and prevention of fraud among deposit taking SACCOs.

4.5 Descriptive Analysis of Dependent Variables

4.5.1 Fraud Occurrence

This section sought data on prevalent red flags and frauds that occur within deposit taking SACCOs in Nairobi County. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not at all”, 2 is “To a Little extent”, 3 is “To a Moderate extent”, 4 is “To a Great extent”, 5 is “To a very Great extent”). Analysis of the collected data was analyzed in Table 4.8

Table 4. 8: Fraud Occurrence

	Not at all	Little Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Deviation
Un-usual increase in non-performing loans	5.4%	2.7%	2.7%	37.8%	51.4%	4.2703	1.04479
Sudden changes in employee lifestyle without corresponding changes on income	2.7%	2.7%	8.1%	45.9%	40.5%	4.1892	.90792
Increased number of loans earmarked for write-off	0.0%	2.7%	32.4%	45.9%	18.9%	3.8108	.77595
Lack of segregation of duties where single employee performs a variety of duties.	2.7%	0.0%	5.4%	45.9%	45.9%	4.3243	.81833
Management override of controls	0.0%	5.4%	8.1%	45.9%	40.5%	4.2162	.82108
Theft of cash and other physical assets	2.7%	8.1%	43.2%	24.3%	21.6%	3.5405	1.01638
Payroll fraud	8.1%	24.3%	45.9%	13.5%	8.1%	2.8919	1.02154
Loans fraud	2.7%	5.4%	37.8%	24.3%	29.7%	3.7297	1.04479
Intentional misstatements of financial accounts	2.7%	8.1%	29.7%	43.2%	16.2%	3.6216	.95310
Suspense accounting fraud	0.0%	10.8%	40.5%	37.8%	10.8%	3.4865	.83738
Procurement fraud	0.0%	10.8%	51.4%	18.9%	18.9%	3.4595	.93079
Fraudulent expense claims	0.0%	0.0%	32.4%	48.6%	18.9%	3.8649	.71345

Table 4.8 illustrates that majority of the respondents agreed to a very great extent on un-usual increase in non-performing loans as supported by a mean 4.2703 and standard deviation of 1.04479. Evidently, the study reveals that majority of respondents agreed on sudden changes in employee lifestyle without corresponding changes on income as supported by a mean of 4.1892 and standard deviation of 0.90792. Respondents on increased number of loans earmarked for write-off with a mean of 3.8108 and standard deviation of 0.77595, while a mean of 4.3243 and standard deviation of 0.81833 represented the statement on lack of segregation of duties where single employee performs a variety of duties. The mean of 4.3243 further indicates that in overall lack of segregation of duties was rated the most common red flag that may be used as a possible indicator that fraud could be happening.

Furthermore, respondents agreed that management override of controls with a mean of 4.2162 and standard deviation of 0.82108, while theft of cash and other physical assets had a mean of 3.5405 and standard deviation of 1.01638. Respondents agreed to a great extent on payroll fraud as evidenced with a mean of 2.8919 and standard deviation of 1.02154. Loan fraud had a mean of 3.7297 and standard deviation of 1.04479. Respondents agreed to a great extent on intentional misstatements of financial accounts as supported by a mean of 3.6216 and standard deviation of 0.95310. Suspense accounting fraud (mean = 3.4865; standard deviation = 0.83738), Procurement fraud (mean = 3.4595; standard deviation = 0.93079), Fraudulent expense claims (mean = 3.8649; standard deviation = 0.71345).

4.5.2 Fraud Detection and Prevention

This section sought data on fraud Detection and prevention within deposit taking SACCOs in Nairobi County. Respondents were provided with statement and were required to select

the extent to which they agreed with the statements (Where 1 is “Not at all”, 2 is “To a Little extent”, 3 is “To a Moderate extent”, 4 is “To a Great extent”, 5 is “To a very Great extent”). Analysis of the collected data was analyzed in Table 4.9

Table 4. 9: Fraud Detection and Prevention

	Not at all	Little Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Deviation
Background checks for new and existing employees	0.0%	2.7%	13.5%	43.2%	40.5%	4.2162	.78652
Employee training on anti-fraud policy	0.0%	0.0%	18.9%	43.2%	37.8%	4.1892	.73929
Proactive Audit Procedures	0.0%	2.7%	0.0%	54.1%	43.2%	4.3784	.63907
Effective reporting channels such as Hotlines	0.0%	2.7%	40.5%	51.4%	5.4%	3.5946	.64375
Effective management oversight	0.0%	2.7%	8.1%	54.1%	35.1%	4.2162	.71240
Tone at the Top	0.0%	0.0%	8.1%	51.4%	40.5%	4.3243	.62601
Computed Mean						**4.1532**	**0.6912**

Table 4.9 shows that majority of the respondents agreed to a great extent that they undertook background checks for new and existing employees as supported by a mean of 4.2162 and standard deviation of 0.78652. In addition, majority (43.2%) of the respondents indicated that their organizations undertook employee training on anti-fraud policy as evidenced by a mean of 4.1892 and standard deviation of 0.73929, while there was overwhelming response that Deposit Taking SACCOs leveraged Proactive Audit procedures with a mean of 4.3784 and standard deviation of 0.63907. Evidently, data established that majority of the Deposit Taking SACCOs had Effective reporting channels

such as Hotlines to a moderate extent (mean=3.5946; SD=0.64375), while they had effective management oversight and tone at the top to a great extent.

4.6 Correlation Analysis (Forensic Accounting Practices on Fraud Detection and Prevention among Deposit Taking SACCOs in Nairobi County)

Correlation analysis was conducted to reveal the direction of association between Independent and dependent variables. The correlation analysis results are presented in table 4.10 below.

Table 4. 10: Correlation Analysis

Correlations

		Litigation Support	Fraud Investigation	Dispute Resolution	Fraud Detection &Prevention
Litigation Support	Pearson Correlation	1	.396*	-.030	.524**
	Sig. (2-tailed)		.015	.861	.001
	N	37	37	37	37
Fraud Investigation	Pearson Correlation	.396*	1	-.020	.190
	Sig. (2-tailed)	.015		.907	.260
	N	37	37	37	37
Dispute Resolution	Pearson Correlation	-.030	-.020	1	.084
	Sig. (2-tailed)	.861	.907		.622
	N	37	37	37	37
Fraud Detection Prevention	Pearson Correlation	.524**	.190	.084	1
	Sig. (2-tailed)	.001	.260	.622	
	N	37	37	37	37

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

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

From the results above, the Pearson Correlation coefficient between litigation support and fraud detection and prevention is 0.524. This signifies moderate and significant positive

linear association between litigation support and fraud detection and prevention ($p<.05$). Fraud investigation had a correlation value of 0.190 with fraud detection and prevention, which indicated a weak positive and linear relationship between fraud investigation and fraud detection and prevention. Also noted was that dispute resolution had a correlation value of 0.084, which indicated a weak and positive linear relationship between dispute resolution and fraud detection and prevention. Fraud investigation and dispute resolution do not have a statistically significant relation with fraud detection and prevention ($p>.05$).

4.6.1 Application of Forensic Accounting Practices on Fraud Detection and Prevention

This section sought data on application of forensic accounting practices on fraud detection and prevention among deposit taking SACCOs in Nairobi County. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not at all”, 2 is “To a Little extent”, 3 is “To a Moderate extent”, 4 is “To a Great extent”, 5 is “To a very Great extent”). Analysis of the collected data was analyzed in Table 4.11

Table 4. 11: Application of Forensic Accounting Practices in Fraud Detection and Prevention

	Not at all	Little Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Deviation
DT SACCOs may adopt litigation support services as a useful tool to prosecute employee who commit fraud thus setting a Tone from the Top that fraud will not be tolerated.	0.0%	8.1%	21.6%	62.2%	8.1%	3.7027	.74030
DT SACCOs may adopt Dispute Resolution services as a useful tool for recovering stolen assets detected through proactive fraud audits (lifestyle audit)	5.4%	8.1%	21.6%	64.9%	0.0%	3.4595	.86905
DT SACCOs may adopt Dispute resolution services to encourage self-confession by fraudsters who may disclose other facts that may be useful to strengthen internal controls thus enhancing effective management oversight.	2.7%	16.2%	32.4%	37.8%	10.8%	3.3784	.98182
DT SACCOs may adopt data mining as a technique to support proactive fraud audits for timely detection and prevention of fraud (Investigation of red flags)	0.0%	0.0%	21.6%	48.6%	29.7%	4.0811	.72182
DT SACCOs may adopt fraud risk assessment as a tool necessary for developing effective anti-fraud polices and training staff on fraud mitigation.	0.0%	0.0%	29.7%	43.2%	27.0%	3.9730	.76327
DT SACCOs may adopt outlier detection technique to conduct background checks on new and existing employees', lifestyle audits and non-declared wealth.	2.7%	2.7%	32.4%	35.1%	27.0%	3.8108	.96718

DT SACCOs may adopt Digital Investigation Manager (DIM) as a tool to investigate suspected fraudulent activities whistle blown through anonymous channels e.g. Hotlines.	0.0%	8.1%	18.9%	45.9%	27.0%	3.9189	.89376

Table 4.11 illustrates that majority of the respondents agreed that DT SACCOs may adopt litigation support services as a useful tool to prosecute employee who commit fraud thus setting a Tone from the Top that fraud will not be tolerated with a mean of 3.7027 and standard deviation of 0.74030. Moreover, majority of the respondents agreed to a great extent that SACCOs may adopt Dispute Resolution services as a useful tool for recovering stolen assets detected through proactive fraud audits (lifestyle audit) with a mean of 3.4595 and standard deviation of 0.86905. Moreover, majority of the respondents agreed that DT SACCOs may adopt Dispute resolution services to encourage self-confession by fraudsters who may disclose other facts that may be useful to strengthen internal controls thus enhancing effective management oversight with a mean of 3.3784 and standard deviation=0.98182. Respondents agreed that SACCOs may adopt data mining as a technique to support proactive fraud audits for timely detection and prevention of fraud (Investigation of red flags) as supported by a mean of 4.0811 and standard deviation=.72182.

Respondents agreed that SACCOs may adopt fraud risk assessment as a tool necessary for developing effective anti-fraud polices and training staff on fraud mitigation with a mean of 3.9730 and standard deviation of 0.76327. Respondents agreed to a great extent that SACCOs may adopt outlier detection technique to conduct background checks on new and existing employees', lifestyle audits and non-declared wealth with a mean of 3.8108 and

standard deviation of 0.96718. Evidently, the study established that DT SACCOs may adopt Digital Investigation Manager (DIM) as a tool to investigate suspected fraudulent activities whistle blown through anonymous channels e.g. Hotlines as supported by a mean of 3.9189 and standard deviation of 0.89376.

4.7 Regression Analysis

The study applied a multiple linear regression analysis to test relationship among variables (independent) on the dependent variable. Statistical package for social sciences (SPSS) version 24 was used to code, enter and calculate the measurements of the multiple regressions for the study. Coefficient of determination describes the magnitude 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 (fraud detection and prevention) that is explained by three independent variables (litigation support, fraud investigation, and dispute resolution)

Table 4. 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534[a]	.285	.220	.33425

a. Predictors: (Constant), Dispute Resolution, Fraud Investigation, Litigation Support

The three independent variables that were studied, explained 28.5% on the impact of forensic accounting practices on fraud detection and prevention among deposit taking Saccos in Nairobi County as denoted by the R^2. Therefore, other factors not considered in this study such as Strong Internal Controls, Fraud risk assessment strategy, Organizational

Culture and adoption of technology contribute 71.5% to fraud detection and prevention. Therefore, more studies can be done to examine how "other factors" such as Strong Internal Controls, Fraud risk assessment strategy, Organizational Culture and adoption of technology may impact fraud detection and prevention among deposit taking SACCOs in Nairobi County?

Table 4. 13: Multiple Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.323	.559		4.156	.000
	Litigation Support	.369	.110	.535	3.339	.002
	Fraud Investigation	-.013	.100	-.020	-.127	.900
	Dispute Resolution	.057	.085	.099	.674	.505

a. Dependent Variable: Fraud Detection and Prevention

From the regression findings, the substitution of the equation (**$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3$**) becomes:

$Y = 2.323 + 0.369X_1 + -0.013X2 + 0.057X_3$

Where Y is the dependent variable (Fraud Detection and Prevention), X_1 is litigation support, X_2 is fraud investigation, and X_3 is dispute resolution. According to the equation, taking all factors; (litigation support, fraud investigation, and dispute resolution) constant at zero, Fraud Detection and Prevention will be 2.323. The data findings also showed that a unit increase in litigation support variable would lead to a 0.369 increase in Fraud Detection and Prevention; a unit increase in fraud investigation would lead to a 0.013 decrease in Fraud Detection and Prevention; a unit increase in dispute resolution would

lead to a 0.057 increase in Fraud Detection and Prevention; This means that the order of significance of forensic accounting practices was litigation support followed by dispute resolution, and fraud investigation respectively. Fraud investigation and dispute resolution are not statistically significant (p> .05).

4.8 Analysis of Variance (ANOVAa)

Analysis of variance was conducted to establish the reliability of the regression model in testing the relationship between Forensic accounting practices and fraud detection and prevention among deposit taking SACCOs in Nairobi County. Results are as shown in the table below:

Table 4. 14: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.471	3	.490	4.389	.010[b]
	Residual	3.687	33	.112		
	Total	5.158	36			

a. Dependent Variable: Fraud Detection and Prevention

b. Predictors: (Constant), Dispute Resolution, Fraud Investigation, Litigation Support

The significance value is 0.010, which is less than 0.05 (p< .05), hence the model is statistically significant in predicting how (litigation support, fraud investigation, and dispute resolution) influence fraud detection and prevention. The model is significant since f calculated value (4.389) is great than f critical (2.892) at 3 and 33 degrees of freedom.

4.9 Discussions

The study sought to establish the impact of Forensic accounting practices on fraud detection and prevention among Deposit taking SACCOs in Nairobi County. The research concluded that forensic accounting practices are key enablers of detecting and preventing fraud among DT SACCOs since they have predictor power of detecting fraud and subsequent prevention of loss of funds. Therefore this study is in concurrence with the assertions of other researchers who sought to determine the impact of forensic accounting practices on fraud detection and prevention on other entities other than SACCOs. The study concurs with the assertions of Gbegi and Okoli, (2003) who concluded in their research that fraud occurrence in the public sector was significantly reduced through adoption of forensic accounting practices. It further concurs with the assertions by Dada, Owolabi and Okwu (2013), who concluded in their study that there exists a positive relationship between forensic accounting services and fraud detection and prevention. Locally the study concurs with the findings of Opiyo (2017) who concluded in his study that parastatals in Kenya have employed measures such as segregation of duties to help in fraud mitigation. Within their operations. Similarly, the study further concurs with the assertions by Omondi (2013), who concluded in his study that there was increased fraud detection when Forensic accounting services were adopted within commercial banks in Kenya.

In relation to the respective fraud theories, the researcher found that lack of segregation of duties was rated the most common red flag that may be used as a possible indicator that fraud could be happening. This concurs with the Fraud Triangles Theory (Donald Cressey, 1971) who alluded that opportunity is among the factors that must exist for fraud to occur. Lack of segregation of duties creates an opportunity for fraudster to commit crime.

The research findings showed that most respondents were in agreement that Deposit taking SACCOs may adopt litigation support services as a useful tool to prosecute employees who commit fraud thus setting Tone at the Top that fraud will not be condoned. This finding concurs with the Rational Choice Theory which alludes that when organizations adopt swift and severe actions towards crime, the grater the possibility that penalties with curb criminal behavior.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This section details summary of the findings in light of the variables adopted. In addition, the section captures conclusions that are derived coupled with policy recommendations and suggestion for further research.

5.2 Summary of findings

The research aimed to establish the impact of Forensic accounting practices on fraud detection and prevention among Deposit taking SACCOs in Nairobi County. The researcher wanted to ascertain from the respondents whether they understood the concept of forensic accounting since it a key predictor of detecting and preventing fraud. Independent variables adopted in the study were litigation support, fraud investigation, and dispute resolution. Both inferential and descriptive statistics were employed in data analysis, where descriptive statistics encompassed frequencies and percentages, while inferential statistics encompassed use of multiple linear regression.

Analysis of data collected on litigation support established that providing expert evidence and testimony in court coupled with document examination is essential to determine forgeries and alterations. Evidently, the study established the need for advisory on effective ways of presenting facts for trial in fraud cases as a key approach to prosecuting employees who commit fraud thus setting a tone from the top that fraud will not be tolerated.

Analysis of data collected on fraud investigation revealed that DT SACCOs undertook investigation of any red flags identified during routine audits as a key approach in fraud detection and further using ratio and trend analysis Sacco's can review financial statements

and probe suspected financial transactions as key measure in fraud detection and prevention. Furthermore, the study established that DT SACCOs undertook digital forensics on electronic devices coupled with Fraud risk assessment and conduct employee anti-fraud education as tools for preventing and detecting fraud. Evidently, the study found that DT SACCOs conducted proactive fraud audits on high risk areas and further conducted data analysis on transactions to detect any abnormal trends.

Analysis of the collected data on dispute resolution variable found that dispute resolution is a useful tool used for resolving disputes outside the courtroom and traditional litigation. Respondents were in agreement to a great extent that DR preserves the reputation of litigants and creates high chances to recover stolen assets. In addition, the study established that DR encourages self-confession by fraudsters who may disclose other facts that may be useful to strengthen controls and curb subsequent frauds. Results in this section imply dispute resolution is an indispensable tool that supports detection and prevention of fraud among deposit taking SACCOs.

5.3 Conclusions

The study concludes that forensic accounting practices are key enablers of detecting and preventing fraud among DT SACCOs since they have predictor power of detecting fraud and subsequent prevention of loss of funds. From the analysis of collected data, the study established that litigation support can enable deposit taking Sacco's in the financial sector to detect fraud and further assist in prosecuting fraud perpetrators since it employs examination of documents with a view to detecting any inconsistencies. In addition, the study concludes that fraud investigation as a practice of forensic accounting augments detection and prevention of fraud among DT SACCOs. In light of the findings, the study

concludes dispute resolution is an indispensable approach that can enable DT SACCOs to recover stolen assets because it enhances disclosure of other facts that may be useful to strengthen controls and curb subsequent frauds.

5.4 Recommendations

The research established that litigation support has a statistically significant relationship with fraud detection and prevention (P<.05). Accordingly, the study recommends that Senior Management of Deposit Taking SACCOs should leverage on litigation support with a view to detecting and preventing fraud since the approach enhances discovery of anomalies through document examination to unearth important information, which will aid fraud detection and eventual prevention. Professional Bodies such as Institute of certified public accountants (ICPAK), Association of Certified fraud examiners (ACFE) and Institute of internal auditors (IIA) should formulate measures to deepen the use of forensic accounting practices within institutions which remains a key contributor to fraud detection and prevention.

Analysis of the collected data established fraud investigation influences fraud detection and prevention; however, the relationship is not statistically significant (p>.05). Accordingly, the study recommends that Senior Management of Deposit Taking SACCOs should apply fraud investigation as a continuous process compared to a time-bound exercise. In addition, the study recommends that Senior Management of Deposit Taking SACCOs should use fraud investigation to flag out suspicious transactions and the regulator SASRA should formulate policies that will make it a requirement for deposit taking SACCOs to report all frauds that have been detected in the course of business.

The study established that dispute resolution influences fraud detection and subsequent prevention. Accordingly, the study recommends that Deposit Taking SACCOs should leverage dispute resolution with a view to deepen synergies with various organizations and/or individuals since this approach encourages self-confession by fraudsters that may unearth other facts that may be use full to strengthen internal controls. Moreover, the study recommends that Deposit Taking SACCOs should apply dispute resolution since it creates rapport among stakeholders with a view to resolve disputes outside courtroom thus preserving reputation of litigants. Researchers and Scholars should leverage on this study with a view of conducting studies on other factors that may influence fraud detection and prevention and more so employ other ways of collecting data, different study designs and consider other financial and non-financial institutions to see if such results would be similar or if there will be a different outcome.

5.5 Limitations of the Study

The researcher was faced with various challenges when conducting the study that included the fact that the DT SACCOs ordinarily do not want to give information due to client confidentiality. In addition, some of the respondents did not find the subject to be of interest and more so "why" the choice of their respective organization. Additionally, some respondents did not want to give the information as they considered competitive importance. This study was also limited by other factors in that some respondents may have been biased or dishonest in their answers. However, the researcher did look for contradictions in the information given and no inconsistencies were found.

5.6 Suggestion for further research

From the analysis of the findings, it can be suggested that further research should be done to determine other factors which impact fraud detection and prevention since forensic accounting practices examined in this study only explained an impact of 28.5% implying that there could be other factors (71.5%) that impacts fraud detection and prevention. Additionally, other ways of collecting data, different study design should be employed to see if such results would be similar or if there will be variation. Further research can also be conducted on fraud detection and prevention for other financial and non-financial institutions bodies.

REFERENCES

Albrecht, C., Albrecht, W. S., & Dunn, G. (2001). Can auditors detect fraud? A review of the research evidence. *Journal of Forensic Accounting, 2*(1), 1-12.

Amake C. and Ikhatua O (2016): Forensic accounting and fraud detection in Nigerian public sector. *Igbinedion University Journal of Accounting, Vol.2, 2016.*

Association of Certified Fraud Examiner (ACFE). Report to the nation's 2018 global study on occupational Fraud and abuse. *http://www.acfe.com/report-to-the-nations/2018 retrieved on 09/01/2018*

Baird, & Zelin (2009) An examination of the impact of obedience pressure on perceptions of fraudulent acts and the like hood of committing occupational fraud. *Journal of forensic studies in Accounting and Business, 1(1),1-14.*

Blount, Ernest C. Occupational crime: *Deterrence, Investigation, and reporting in compliance with federal guidelines. CRC press, 2003*

Chi-Chi O and Ebimobowei A. (2012): Fraudulent activities and forensic accounting services of banks in Port Harcourt, Nigeria. *Asian Journal of Business Management 4(2): 124-129.*

Enofe, A, Okpako, P & Atube, E (2013) The impact of forensic accounting on fraud detection. *European Journal of Business and Management, 5(26)*

Enofe, A. Ekpulu, G & Ajala. T (2015) Forensic accounting and corporate crime mitigation. *European Scientific Journal, 11 (7)*

Fiia, F (2013) Forensic accounting: A tool for fraud detection and prevention in the public sector (A study of selected ministries in Kogi State). *International Journal of academic research in business and social sciences, 3(3), 1*

Gollwitzer, P. M & R. F Kinney (1990) Effects of deliberate and implemental mindset on illusion of control. *Journal of personality and social psychology, 56 (4):531-542*

Hopwood, W. S., Leiner, J. J. & Young G. R. (2008): Forensic Accounting. *McGraw-Hill/Irwin London*

Koh, A. N, Arokiasamy, L & Suat C L A (2009) Forensic accounting: Public acceptance towards occurrence of fraud detection international. *Journal of Business & Management 4 (11)*

Kumar (2005) Research methodology: A step by step guide for beginners. *New Delhi SAGE Publishers*

Mugenda, O. M., & Mugenda, A. G. (2003). Research Methods: Qualitative & Quantitative approaches. *Acts Press. Nairobi Kenya*

Ogundana O, Okere W, Ogunleye O and Oladapo I. (2018): Forensic Accounting and Fraud Detection and prevention in Nigerian Banking Industry. *COJ Rev & Res. 1(1). COJRR.000504.2018.*

Okoye E.I. and Gbegi D.O (2013): An evaluation of fraud and related crimes on the Nigerian Economy. *An Arabian Journal of Business Management Review, Vol.2, 2013.*

Okunbor, J. A & Obaretin, O (2010) Effectiveness of the application of forensic accounting services in Nigerian organizations. *AAU J .Management Science*

Omondi E. O, (2013) The impact of forensic accountings services on fraud detection and prevention among commercial banks in Kenya. *University of Nairobi*

Opiyo J (2017) Role of forensic accounting services in fraud mitigation among Kenya public institutions. *A case of parastatals in Kenya*

Owajori, A (2008), The role of forensic accounting in solving the vexed probe of corporate world. *European Journal of scientific research vol. 29 No 2*

Price Waterhouse Coopers (PWC) (2014). Annual Crime Report Retrieved from *https://www.pwc.com/.../economic-crime-survey on July 31, 2014*.

Rae, K & Subramaniam (2008), Quality of internal control procedures; Antecedents and moderating effect on organizational justice and employee fraud. *Managerial Auditing Journal, 23 (2) 104-124*

Ramaswamy, V (2011), New frontiers training forensic accountants within the accounting program. *Journal of college teaching and learning (TLC)*

Webster, M. (1985). Webster`s smith new collegiate dictionary. Merriam - Webster Inc.

Wells, J. T. (1997). Occupational Fraud Abuse. In Albrecht, W. Steve (Ed.). Fraud Examination. *Thomson: South-Western Publishing, 2003.*

Wolfe D. T. and Hermanson D.R. (2004), The Fraud Diamond: Considering the Four elements of fraud. *The CPA Journal, 74 (12), 38*

Wolfe D. T. and Hermanson D.R. (2004), The Fraud Diamond: Considering the Four elements of fraud. *The CPA Journal, 74 (12), 38*

APPENDICES

APPENDIX I: INTRODUCTION LETTER

UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS

KISUMU CAMPUS

Telegrams: "Varsity" Nairobi
Fax: 4181650
Kisumu, Kenya
Telex: 22095Varsity
Mobile: 0720348080
Email: nixono@uonbi.ac.ke

P.O Box 19134-40123
Kisumu, Kenya

Ref: D61/71210/2140 Date: 20th September, 2019

TO WHOM IT MAY CONCERN

The bearer of this **ARTHUR NGUGI MBUGUA**

REGISTRATION NO: D61/71210/2014

The above named student is in the MBA program. As part of requirements for the course, he is expected to carry out a study on **"Impact of Forensic Accounting Practices an Fraud Detection and Prevention Among Deposit taking SACCO'S In Nairobi County"-**

He has identified your organization for that purpose. This is to kindly request your assistance to enable him complete the study.

The exercise is strictly for academic purposes and a copy of the final paper will be availed to your organization on request.

Your assistance will be greatly appreciated.

Thanking you in advance.

Sincerely,

23 SEP 2019

DR. NIXON OMORO
ASSISTANT COORDINAOTR, SOB, KISUMU CAMPUS

Cc File Copy

APPENDIX II: QUESTIONAIRE

RESEARCH QUESTIONNAIRE

This study has been done in partial fulfilment of the requirements for the award of the degree of Master of Business Administration (Finance), School of Business, University of Nairobi. The sole purpose of this questionnaire is to collect information on the Impact of Forensic accounting on Fraud Detection and Prevention among SACCOs in Kenya. The information gathered will solely be used for academic purposes and will be given utmost confidentiality.

Instructions.

1) Do not write your name or identification anywhere in the questionnaire
2) Tick/Fill appropriately in the spaces provided
3) Feel free to give any information you may deem relevant to this research

SECTION A: GENERAL INFORMATION

1. Name of the SACCO

   ……

2. Which department do you work in this organization?

   Internal Audit Department ☐

   Risk and Compliance ☐

   Finance and Accounts ☐

   Executive Management ☐

3. What is your level of management in this Organization?

   Top Level Management ☐

   Middle Level Management. ☐

4. Duration worked in this organization

   0 to five Years ☐

   5 to 10 Years ☐

   Over 10 Years ☐

SECTION B: FORENSIC ACCOUNTING SERVICES

5. Litigation Support

To what extent do you agree with the following statements as ways that litigation support services impact on fraud detection and prevention?

Use 1- Not at all, 2-Little Extent, 3- Moderate Extent, 4- Great Extent, 5- Very Great Extent

Activity	1	2	3	4	5
Providing assistance of an Accounting Nature in matters involving existing or pending court cases.					
Quantification of economic or financial damages for matters in court.					
Providing expert evidence and testimony in court					
Document examination to determine forgeries and alterations.					
Advisory on effective ways of presenting facts for trial in fraud cases					
Interrogation of other expert reports presented in courts.					
Advising on the validity of claims for cases presented in court and settlement negotiations.					

6. Fraud Investigation

To what extent do you agree with the following statements regarding Fraud Investigation as a practice necessary for fraud detections and prevention?

Use 1- Not at all, 2-Little Extent, 3- Moderate Extent, 4- Great Extent, 5- Very Great Extent

Activity	1	2	3	4	5
Investigation of any red flags identified during routine audits					
Using ration and trend analysis Review of financial statements and probe suspected financial transactions					
Performing digital forensics on electronic devices					

Activity	1	2	3	4	5
Fraud risk assessment and conducting employee anti-fraud education.					
Investigating alleged fraud or illegal activities					
Conducting proactive fraud audits on high risk areas.					
Conduct Data analysis on transactions to identify any abnormal trends.					

7. Dispute Resolution (DR)

To what extent do you agree with the following statements on Dispute resolution regarding fraud detection and prevention in relation to the Sacco Industry in Nairobi County?

Use 1- Not at all, 2-Little Extent, 3- Moderate Extent, 4- Great Extent, 5- Very Great Extent

Activity	1	2	3	4	5
DR is a useful tool used for resolving disputes outside the courtroom and traditional litigation?					
DR preserves the reputation of litigants and creates high chances to recover stolen assets					
DR encourages self-confession by fraudsters who may disclose other facts that may be useful to strengthen controls and curb subsequent frauds.					

SECTION C: FRAUD DETECTION & PREVENTION

8. (a) Fraud Occurrence

The following statements tests on the most prevalent type of red flags and frauds within the Sacco industry in Kenya.

Kindly indicate to what extent you agree with the statements.

Use 1- Not at all, 2-Little Extent, 3- Moderate Extent, 4- Great Extent, 5- Very Great Extent

Activity	1	2	3	4	5
Un-usual increase in non-performing loans					

Activity	1	2	3	4	5
Sudden changes in employee lifestyle without corresponding changes on income					
Increased number of loans earmarked for write-off					
Lack of segregation of duties where single employee performs a variety of duties.					
Management override of controls					
Theft of cash and other physical assets					
Payroll fraud					
Loans fraud					
Intentional misstatements of financial accounts					
Suspense accounting fraud					
Procurement fraud					
Fraudulent expense claims					
Customer accounts fraud					
Electronic card Fraud					

(b) **Fraud Detection and Prevention**

Rate your agreement with the following statements as measures necessary for fraud detection and prevention within deposit taking SACCO's in Nairobi County.

Use 1- Not at all, 2-Little Extent, 3- Moderate Extent, 4- Great Extent, 5- Very Great Extent

Activity	1	2	3	4	5
Background checks for new and existing employees					
Employee training on anti-fraud policy					
Proactive fraud Audit					
Effective reporting channels such as Hotlines					
Effective management oversight					
Tone at the Top					

SECTION D: APPLICATION OF FORENSIC ACCOUNTING PRACTICES ON FRAUD DETECTION AND PREVENTION

To what extent do you agree with the following statements regarding Forensic accounting practices as services useful for fraud detection and prevention within deposit taking SACCOs in Nairobi County?

Use: 1- Not at all, 2- Little Extent, 3- Moderate Extent, 4- Great Extent, 5- Very Great Extent

Activity	1	2	3	4	5
DT SACCOs may adopt litigation support services as a useful tool to prosecute employee who commit fraud thus setting a Tone from the Top that fraud will not be tolerated.					
DT SACCOs may adopt Dispute Resolution services as a useful tool for recovering stolen assets detected through proactive fraud audits (lifestyle audit)					
DT SACCOs may adopt Dispute resolution services to encourage self-confession by fraudsters who may disclose other facts that may be useful to strengthen internal controls thus enhancing effective management oversight.					
DT SACCOs may adopt data mining as a technique to support proactive fraud audits for timely detection and prevention of fraud (Investigation of red flags)					
DT SACCOs may adopt fraud risk assessment as a tool necessary for developing effective anti-fraud polices and training staff on fraud mitigation.					
DT SACCOs may adopt outlier detection technique to conduct background checks on new and existing employees', lifestyle audits and non-declared wealth.					
DT SACCOs may adopt Digital Investigation Manager (DIM) as a tool to investigate suspected fraudulent activities whistle blown through anonymous channels e.g. Hotlines.					

Your cooperation is highly appreciated

APPENDIX III: LIST OF DEPOSIT TAKING SACCOS IN NAIROBI COUNTY

	NAME OF THE SACCO	OFFICE LOCATION
1	AFYA SACCO SOCIETY LTD	AFYA CENTRE, TOM MBOYA STREET
2	AIPORTS SACCO SOCIETY LTD	KAA COMPLEX, JKIA
3	ARDHI SACCO SOCIETY LTD	RUARAKA SURVEY
4	ASILI SACCO	ASILI COOPERATIVE CENTRE, (NGARA)
5	CHAI SACCO	KTDA PLAZA, (RONALD NGALA)
6	CHUNA SACCO	ENG DEPT UON, (HARRY THUKU RD)
7	COMOCO SACCO	KAPU BLDG, LUSAKA RD
8	ELIMU SACCO	ELIMU SACCO, ELIMU HOUSE SOUTH B
9	HARAMBEE SACCO	HARAMBEE COOP PLAZA
10	HAZINA SACCO	HAZINA SACCO NGONG RD
11	JAMII SACCO	JAMII SACCO COURT, SOUTH B
12	KENPIPE SACCO	KENPIPE PLAZA, NANYUKI RD
13	KENVERSITY SACCO	MIZPAH HOUSE, KAHAWA SUKARI
14	KENYA BANKERS SACCO	KENYA BANKERS SACCO CENTRE
15	KENYA POLICE SACCO	KENYA POLICE SACCO PLAZA
16	MAGEREZA SACCO	MAGESO CHAMBERS, MOI AVENUE
17	MAISHA BORA SACCO	UNILEVER KENYA OFFICE
18	METROPOLITAN SACCO	CHAI HOUSE KOINANGE STREET
19	MILIKI SACCO	MILIKI SACCO BUILDING NBI
20	MWALIMU SACCO	MWALIMU TOWERS UPPER HILL
21	MWITO SACCO	MWITO HOUSE DESAI RD
22	NACICO SACCO	NACICO PLAZA LANDHIES RD
23	NAFAKA SACCO	NBI SILOS COMPLEX, OUTERING RD
24	NSSF SACCO	NSSF BUILDING, BISHOPS RD
25	NATION SACCO	CAMBRIAN HOUSE, MOI AVANUE
26	NYATI SACCO	ODDYSEY PLAZA
27	SAFARICOM SACCO	SAFARICOM CARE CENTRE

	NAME OF THE SACCO	OFFICE LOCATION
28	SHERIA SACCO	SHERIA SACCO HOUSE
29	SHIRIKA SACCO	SHIRIKA COOP HOUSE, NGARA
30	SHOPPERS SACCO	NATURE HOUSE NBI CBD, TOM MBOYA ST
31	STIMA SACCO	STIMA SACCO PLAZA, MUSHEMBI RD
32	TAQWA SACCO	JAMIA PLAZA, KIGALI STRT
33	TELEPOSTA SACCO	CITY SQUARE POST, NBI
34	TEMBO SACCO	TEMBO COMPLEX, NBI
35	UFANISI SACCO	DEVELOPMENT HSE, MOI AVENUE
36	UKRISTO NA UFANISI WAANGLICANA	ACK EMMANUEL CHURCH, RIRUTA
37	UKULIMA SACCO	UKULIMA COOP HOUSE
38	UNAITAS SACCO	CARDINAL OTUNGA PLAZA
39	UN-SACCO	UN SACCO BUILDING
40	WANA-ANGA SACCO	METEOROLOGICAL HQS, NGONG RD
41	WANANDEGE SACCO	WANANDEGE PLAZA, AIRPORT
42	WAUMINI SACCO	WAUMINI HSE, CHIROMO RD

Source: Sacco Societies Regulatory Authority.