

**EFFECT OF INTERNAL AUDIT PRACTICES ON FRAUD RISK MANAGEMENT  
IN STATE CORPORATIONS IN KENYA**

**BY**

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**MASTER OF SCIENCE (FINANCE AND ACCOUNTING) DEGREE IN THE  
SCHOOL OF BUSINESS AND PUBLIC MANAGEMENT AT KCA UNIVERSITY**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
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ACCOUNTING) DEGREE IN THE SCHOOL OF BUSINESS AND PUBLIC  
MANAGEMENT AT KCA UNIVERSITY**

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### **DECLARATION**

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

Student Name: \_\_\_\_\_ Reg. No: \_\_\_\_\_

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I do hereby confirm I have examined the master's dissertation of  
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Sign: \_\_\_\_\_ Date: \_\_\_\_\_

Dr. Brigitte Okonga- Wabuyabo

Dissertation Supervisor

## **ABSTRACT**

Most internal audit functions of many organizations have adopted practices of fraud risk management yet fraud is still prevalent and occurrences are reported. The fraud problem in all its forms; corruption, asset misappropriation and fraudulent financial reporting registers a continuous upward trend. Fraud is an emerging problem affecting public organizations and private companies as well in all the countries and all the industries/sectors. The response to the fraud problem stands not just in the regulatory environment and the supervision bodies' monitor, but first of all in the companies' awareness that fraud does happen and there is a stringent need to proactively manage fraud risk. This study sought to establish the extent to which internal audit practices contributes to success of fraud risk management in State Corporations in Kenya. The target population was all state corporations in Kenya; Stratified random sampling was used to sample the state corporations under study. Structured questionnaires were used to collect data which was then coded and analyzed. 40 state corporations were sampled for the study and out of these 33 responded which gave a response rate of 82.5%. The researcher found that fraud policy had a combined mean of 3.19, standard deviation of 1.072, variance of 1.149 and a Pearson Chi-Square statistic of 0.001; Periodic assessment of fraud risk exposure had a mean of 3.13, standard deviation of 1.1.0, variance of 1.217 and a Pearson chi-square statistic of 0.582; Fraud prevention had a mean of 2.92 , standard deviation of 0.956, a variance of 0.915 and a Pearson chi-square statistics of 0.319; Fraud detection had a mean of 2.93, standard deviation of 0.912, variance of 0.832 and a Pearson chi-square statistic of 0.005. The study concludes that internal audit practices; fraud policy, periodic assessment of fraud risk exposure, fraud prevention and fraud detection when combined contributes to success of fraud risk management in state corporations in Kenya. The researcher recommends that State corporations should promote fraud policy as part of their key policies in terms of governance and strengthen their measures as a way of facilitating internal audit in the organization. To ensure successful fraud risk management; State corporations must analyze and assess periodic fraud risk exposure in the organization as a way of promoting internal audit that may positively impact on the institutions success on fraud risk management; State corporations to put in place appropriate measures of fraud prevention that may help effective and efficient internal audit that supports on the success fraud risk management and lastly that state corporations must assess all the internal and external environment to help in fraud detection and enable the organization administer and post a successful fraud risk management.

**Key Words:** Fraud, Internal Audit, Fraud Risk Management, Risk Management

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## **DEDICATION**

This work is dedicated to my Parents Jophece Obonyo Yogo and Eunice Yogo whose parental love, support and encouragement has made me who I am today. To my daughter Margaret Kayla for being the sunshine in my life, to my husband Ibrahim Okore for his love and support and to my brothers and sisters for their continued encouragement throughout the course; May the almighty God bless them abundantly.

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## **ACRONYMS AND ABBREVIATIONS**

**IIA** – Institute of Internal Auditors

**SC** – State Corporations

**FTT** – Fraud Triangle Theory

**FDT** – Fraud Diamond Theory

**ISA** – International Standards on Auditing

**IPPF** – International Professional Practices Framework

## **OPERATIONAL DEFINITION OF TERMS**

**Internal Auditing** - Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes (IIA, 2015).

**Fraud** - Fraud essentially involves using deception to make a personal gain dishonestly for oneself and/or create a loss for another (Lees, 2012).

**Risk** - Risk is the possibility of an event occurring that may impact on the achievement of objectives (IPPF, 2016).

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the Study**

The modern organization's internal audit function is a key participant in antifraud activities supporting management approach to preventing, detecting and responding to fraud and misconduct (KPMG, 2006). Management has the primary responsibility for assessing risk and for the design, implementation, and ongoing maintenance of controls within an organization (Coderre, 2005). The primary responsibility for prevention and detection of fraud rests with both those charged with governance of the entity and management (ISA, 240, 2009). A crucial part of an entity's corporate governance is its internal audit function (Coram, Ferguson, and Moroney, 2006). The internal audit activity is responsible for identifying and evaluating the effectiveness of the organization's risk management system and controls as implemented by management (Coderre, 2005).

The Institute of internal auditors provides a mandatory guidance for internal auditors through its International Professionals Practices Framework (IPPF, 2016) which clearly states that an effective internal audit activity can be extremely helpful in addressing fraud although management and the board are ultimately responsible for fraud deterrence. It also states that internal auditors can assist management by determining whether the organization has adequate internal controls and fosters an adequate control environment. The presence of a strong internal control function can go a long way in supporting and promoting effective organizational governance hence a robust monitoring and oversight of risk management.

In their article, "Internal Auditor as Accounting Fraud Buster," published in the January 2014 IUP Journal of Accounting Research and Audit Practices, Gopal Krishna Agarwal and Yajulu Medury (2014) recommend addressing this problem by introducing the novel concept that

organizations use an independent third party to appoint internal auditors. They suggest that regulators, creditors, or governments assign internal auditors, or that these three groups create a central regulatory body to appoint them. The authors also present a list of criteria needed by internal auditors to enhance effectiveness. These skills include an extensive study of the organization's environment (including systems, procedures, internal controls, management, and employees); use of well-thought-out audit programs; engagement in two-way communication with management at regular intervals; establishing the consequences of fraud with all levels of management; and neutral third-party appointment. Internal audit can specifically assist an entity to manage fraud control by providing advice on the risk of fraud, advising on the design or adequacy of internal controls to minimize the risk of fraud occurring, and by supporting management to develop fraud prevention and monitoring strategies.

Internal auditors have a distinct advantage over external auditors in detecting fraud because they are involved with organizations on a daily basis. On the flip side, depending on their reporting structure and considering they are employees of the company, their independence may be impaired especially in relation to allegations of fraud committed by top management. According to Ondari (2016), Public sector organizations are tackling a wide range of issues, escalating expenditure, procurement irregularities, weak revenue streams, increased demand for public services and weak governance. He further states that these can be worsened by fraud and corruption, which can cause financial losses, reputational damage and erode employee morale.

### **1.1.1. Internal Audit Practices**

Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the

effectiveness of risk management, control and governance processes (IIA, 2015). According to definition by IIA in relation to fraud, this implies that internal audit provides assurance to the board and management that the controls they have in place are appropriate given the organizations' risk appetite. The role of independent auditors is not only to find material misstatements and possibly fraud, but ultimately to provide a "reasonable assurance" that the financial statements are a fair representation of the company's financial position (Kennedy, 2012).

To help ensure an organization's fraud risk management program is effective, it is important to understand the roles and responsibilities that personnel at all levels of the organization have with respect to fraud risk management. Policies, job descriptions, charters, and/or delegations of authority should define roles and responsibilities related to fraud risk management (IIA, AICPA and ACFE, 2008). Assessing, improving and monitoring anti-fraud programs are key elements of an effective internal control structure (EY, 2013). Comprehensive knowledge and understanding of the risks of fraud allow internal audit to adequately specify its tasks, objectives, and activities, focused on fraud risk assessment, prevention and detection of fraud and ultimately, investigation of fraud (Dordevic and Dukic, 2015).

Adequately established fraud risk management process involves, first, periodic assessment of fraud risk exposure, in order to identify potential events whose occurrence the company should prevent (Dordevic and Dukic, 2015). Organizations should periodically identify the risks of fraud in all areas and process of business then assessed in terms of impact and likelihood (Doody, 2008). The foundations of an effective fraud risk management program are rooted in a risk assessment, overseen by the board, which identifies where fraud may occur within the organization. A fraud risk assessment should be performed on a systematic and recurring basis, involve appropriate personnel, consider relevant fraud schemes and



scenarios, and mapping those fraud schemes and scenarios to mitigating controls (IIA,AICPA and ACFE, 2008).

To deal with the fraud problem the most effective way may be by adopting methods that aid in decreasing motive, restricting opportunity and limit the ability of a potential fraudster by rationalizing their actions. It is necessary to establish preventive mechanisms, in order to avoid potential risk events and mitigate possible negative consequences for the company. Although the company can never minimize the risk of fraud to zero, the establishment of mechanisms and activities, aimed at preventing fraud and reducing the negative consequences, is of great importance (Dordevic and Dukic, 2015).Although fraud prevention and detection are related concepts, they are not the same. While prevention encompasses policies, procedures, training, and communication, detection involves activities and programs designed to identify fraud or misconduct that is occurring or has occurred (IIA, AICPA and ACFE , 2008).

Establishment of a coordinated process of investigating fraud is aimed at revealing the nature and extent of fraudulent activity, and involves performing procedures to obtain information and specific details that would indicate whether the fraud occurred, the loss which the company is exposed to due to fraud, persons involved in the fraud, and the way in which the fraud occurred (Dordevic and Dukic, 2015).It is essential that any violations, deviations, or other breaches of the code of conduct or controls, regardless of where in the organization, or by whom, they are committed, be reported and dealt with in a timely manner (IIA,AICPA and ACFE, 2008).

### **1.1.2 Fraud Risk Management**

The institute of internal auditor's (IPPF, 2016) defines risk as the possibility of an event occurring that may have an impact on the achievement of objectives. Risk is measured in

terms of impact and likelihood. The need for timely and ongoing assurance over the effectiveness of risk management and control systems is critical. Organizations are continually exposed to significant errors, frauds or inefficiencies that can lead to financial loss and increased levels of risk (Coderre, 2005). All organizations are exposed to fraud risk in any process where human involvement is required. An organization's exposure to fraud is a function of the fraud risks inherent in the business, the extent to which effective internal controls are present either to prevent or detect fraud, and the honesty and integrity of those involved in the process (IPPF, 2009). Recently, there has been growing interest in risk management across the world due to a number of parallel events (Dabari and Saidin, 2014).

There is no universal definition of fraud. But it essentially involves using deception to make a personal gain dishonestly for oneself and/or create a loss for another (Lees, 2012). A wide variety of crimes and swindles fall under the umbrella of fraud. From Ponzi schemes and identity theft to data breaches and falsified expense reports, the ways perpetrators attempt to part victims from their money are extremely diverse and continually evolving (ACFE, 2010). A robust fraud risk management requires more than just ensuring an effective system of internal controls. It also requires clearly defined and implemented actions designed to reduce fraud risk and an ongoing assessment of the effectiveness of the organization's approach to managing the business risk of fraud (Deloitte, 2014). Organizations with an internal audit function were more likely than those without such a function to detect fraud within their organizations (Coram, Ferguson, and Moroney, 2006).

There are three main categories of fraud that affect organizations. The first of these is asset misappropriations, which involves the theft or misuse of an organization's assets. The second category of fraud is fraudulent financial statements. This is usually in the form of falsification of financial statements in order to obtain some form of improper benefit. It also includes falsifying documents such as employee credentials. The final of the three fraud categories is

corruption. This includes activities such as the use of bribes or acceptance of ‘kickbacks’, improper use of confidential Information, conflicts of interest and collusive tendering (ACFE, 2017). Fraud is not a recent phenomenon associated to some highly-publicized cases of financial fraud from the last two centuries. It can be found early in the history of our world as men have made use of tricks, manipulation, and deceit in order to acquire money, land, goods, or trust, with the overall objective of making profit (Petrascu and Tieanu, 2014).

Due to the number of high profile corporate failures in recent years, corporate fraud has been of significant public and regulatory interest (Coram, Ferguson and Moroney, 2006). Despite intense efforts to stamp out corruption, misappropriation of assets, and fraudulent financial reporting, it appears that fraud in its various forms is a problem that is increasing in frequency and severity (Wolfe and Hermanson, 2004).

### **1.1.3 State Corporations in Kenya**

State enterprises are a universal phenomenon in the economic systems of developed and developing countries. They were created in most countries to accelerate economic and social development. Their roles in national development can be analyzed under the concept of developmental state, through which countries add aggregate economic values to their goods and services via the industrialization process (The Presidential Taskforce on Parastatal Reforms , 2013). The Kenya government formed state corporations to meet both commercial and social goals. They exist for various reasons including: to correct market failure, to exploit social and political objectives, provide education, health, redistribute income or develop marginal areas (Njiru, 2008).

State corporations, also known as parastatals are government owned companies, boards or organizations which help the government to run essential functions of the government. And they provide very important services to the people of Kenya. The Parastatals are usually

managed by board of directors who are appointed by the president of the republic of Kenya (Kaoo, 2017). These Parastatals of the government of Kenya are usually managed and funded through the respective ministries of the government. According to section three of the state corporation Act Chapter 446, Revised 2012 state corporations are established by the president of Kenya by order as a body corporate to perform the functions specified in that order. It further states that a state corporation established under this section shall have perpetual succession, shall be capable of suing and being sued in its corporate name, and is capable of holding movable and immovable property.

Most of the state corporations are guided by individual enabling legislation and legal notices in their operations. Thus, currently each state corporation (SC) operates within the legal instrument under which it is established, and provisions of the State Corporations Act, Chapter 446 of the Laws of Kenya. The situation is however different for SCs operating under the Companies Act Chapter 486, the Banking Act Chapter 488 and Insurance Act Chapter 487. SCs operating under the Companies Act, Insurance Act and Banking Act are required to comply with requirements therein as well as those of the State Corporations Act. Those that are listed on the Nairobi Securities Exchange are also required to comply with Capital Markets Act Chapter 485A and Capital Markets Authority Regulations (The Presidential Taskforce on Parastatal Reforms , 2013).

State corporations in Kenya are governed by the board of directors who are guided by Mwongozo code of governance for state corporation. Among the requirements of the board according to mwongozo is to establish a board audit committee which is to discharge the function of governance , risk and compliance among others. The role of the board audit committee in the state corporations among others is to establish an independent internal audit function and ensure that there is an effective risk based internal audit system with an approved internal audit charter (Mwongozo, 2015). The public sector auditor's role supports

the governance responsibilities of oversight, insight, and foresight. Oversight addresses whether public sector entities are doing what they are supposed to do and serves to detect and deter public corruption (IIA, 2012).

## **1.2 Statement of the Problem**

Most organizations have adopted practices to enhance fraud risk management yet a lot of fraud occurrences are still being reported. The fraud problem manifests itself in different forms; corruption, asset misappropriation, fraudulent reporting, registers a continuous upward trend. Fraud is an emergent problem affecting public organizations and private companies as well in all the countries, and all the industries/sectors. The governments and regulatory bodies issued regulations aiming at strengthening the control over fraud risk and limit its likelihood and impact. The response to the fraud problem stands not just in the regulatory environment and the supervision bodies' monitor, but first of all in the companies' awareness that fraud does happen and there is a stringent need to proactively manage the risk of fraud.

Corruption remains a major impediment to doing business in Kenya. Kenya ranked 136 out of 177 countries on Transparency International's corruption perceptions index (US Department of State , 2014). Allegations of irregularities in public tenders are frequent. A recent PriceWaterhouseCoopers report lists accounting fraud, procurement fraud, bribery and corruption as areas of major concern, all of which affect over a quarter of businesses and some of which affect up to a third. All organizations are subject to fraud risks and there have been several instances in the past couple of decades when frauds have led to the downfall of organizations as a whole. Some notable examples include, Enron and WorldCom in the USA and Satyam (Ojha, 2012). According to ACFE, (2016) report to the nations, CFEs who participated in the study indicated that the typical organization loses 5% of revenues in a given year as a result of fraud. The Global fraud and risk report by KROLL, (2017) reported

that the incidence of fraud continued to climb markedly. Overall, 82% of surveyed executives reported falling victim to at least one instance of fraud in the past year, up from 75% in 2015. According to KPMG, (2016) the average value of fraud per case increased to £ 24 million in 2015 compared to £ 2 million in 2014.

Nigeria, Kenya, Zimbabwe and South Africa make up 74% of all fraud cases reported in Africa (KPMG, 2012). In East Africa, most cases of reported fraud come from Kenya (KPMG, 2013). In Kenya, the Nairobi based Euro bank which collapsed in 2003 after losing close to 1.4 billion Kenyan shillings saw state corporations like National Social Security Fund, Kenyatta National Hospital, National Hospital Insurance Fund, Kenya Tourist Development Corporation, Kenya Pipeline, Kenya Sugar Board and Kenya Post Office savings bank lose millions of shillings which they had deposited with the bank (BBC News, 2003). As recent as the year 2015, the country saw first-hand effects of fraud on society as a whole. The banking industry was sent into panic mode forcing regulators to step in and implement stringent measures to counter the rise of fraud. Most of the articles emphasized more on the role of external auditor.

In theory, there have been articles and research on management of fraud risk among them being providing insights into fraud prevention, detection and response (KPMG Forensic, 2014): and Fraud , Risk Management: Developing a strategy for prevention detection and Response (KPMG, 2006). Ohando, (2014 ) did a study on relationship between fraud risk management practices and financial performance of commercial banks in Kenya, Odhiambo, (2016) studied an evaluation of fraud management strategies by insurance companies in Kenya and Githecha , (2013) researched on the effect of fraud risk management strategies on the financial performance of commercial banks in kenya . Despite all the authors touching on fraud risk management little is known of the role internal auditors play in fraud risk management and its success on managing the risk of fraud especially in state corporations.

Most of the articles concentrated on banking fraud and insurance fraud. It is therefore the aim of this paper to gain an understanding on the risk of fraud faced by state corporations and investigate the extent to which internal audit practices affect fraud risk management in state corporations in Kenya.

### **1.3 Research Objectives**

The general objective of this study is to establish the extent to which internal audit practices contributes to success of fraud risk management in state corporations in Kenya. The following are the specific objectives;

- i. To establish the extent to which fraud policy contributes to success of fraud risk management
- ii. To establish the extent to which periodic assessment of fraud risk exposure contributes to success of fraud risk management
- iii. To establish the extent to which fraud prevention contributes to success of fraud risk management
- iv. To establish the extent to which fraud detection procedure contributes to success of fraud risk management

### **1.4 Research Hypothesis**

- i. Fraud policy does not significantly contribute to success of fraud risk management
- ii. Periodic assessment of fraud risk exposure does not significantly contribute to success of fraud risk management
- iii. Fraud prevention does not significantly contribute to the success of fraud risk management
- iv. Fraud detection does not significantly contribute to the success of fraud risk management

## **1.5 Justification of the Study**

The findings of this study may benefit the state corporations in the following ways; The state corporations may gain a better understanding of fraud risk management and thus be able to reduce negative impact associated with fraud through effective management, The internal auditors, board audit committees and management of state corporations may gain an in-depth understanding of fraud risk and be able to use the information towards management of fraud in their organizations, The study findings may provide baseline information for policy makers when making fraud and risk management policy decisions to come up with applicable prudential regulations supporting the state corporations in attaining their objectives.

## **1.6 Scope of the Study**

This study focused on the effect of internal audit practices on fraud risk management in state corporations in Kenya. The target group was the head of Internal audits functions in state corporations.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter consists of the review of the concepts, theories and empirical studies from the literature that are related to the major variables of the study. The review of related literature covers; Theoretical Review listing all the theories related to the objectives under study, Empirical overview, conceptual framework and operationalization of variables.

#### **2.2 Theoretical Review**

This is a review of the theories from the literature that relate to the variables of the study and how they relate to the success of fraud risk management.

##### **2.2.1 Donald Cressey's Fraud Triangle Theory**

A common theory that brings together a number of aspects that lead to fraud is Donald Cressey's Fraud Triangle Theory (FTT), an American Criminologist who made innovative contributions to the study of organized crime. Cressey, (1973) studied fraud by arguing that there must be a reason behind everything people do. Questions such as why people commit fraud led him to focus his research on what drives people to violate trust. He relates that pressure, opportunity and rationalization must be present for an offense to take place. According to Cressey, there are three factors that must be present at the same time for an ordinary person to commit fraud: pressure, opportunity and rationalization.

Pressure is what motivates the crime in the first place, an individual having financial difficulties that he is unable to solve through legitimate means and so is pressured to steal cash or falsify a financial statement in order to solve his problem. Opportunity is the method to which the crime is committed; the person must see a way in which he can violate his

position of trust to solve his financial problem without being caught, most of the time this is done when there are weak internal controls in place. Rationalization is the last leg of the fraud triangle, this is where the vast majority of fraudsters are first time offenders and they do not see themselves as criminals, they justify the act as they perceive themselves as ordinary honest people who are caught in a bad set of circumstances hence justifying their crime.

Donald Cressey (1973) hypothesized that “trusted persons become trust violators when they conceive of themselves as having a financial problem which is non-shareable, are aware that this problem can be secretly resolved by violation of the position of financial trust, and are able to apply to their own conduct in that situation verbalizations which enable them to adjust their conceptions of themselves as trusted persons with their conception of themselves as users of the entrusted funds of property” (Page 742).

This theory is applicable to the study since it implies that fraud can be reduced significantly if pressure, opportunity and rationalization is addressed by the organization and internal auditors may have a basis of what to check for when investigating for possible fraudulent activities and may also have a when recommending internal controls to management for fraud prevention.

### **2.2.2 Fraud Diamond Theory**

Wolfe and Hermanson (2004) , expounded on Donald Cressey’s Fraud Triangle Theory (FTT) by presenting a Fraud Diamond Theory (FDT) which includes a fourth element called capability. They believed that the fraud triangle could be enhanced to improve both fraud prevention and detection by considering a fourth element. In their study, they stated that in addition to addressing the elements of fraud triangle theory (FTT) which are pressure, opportunity and rationalization, their four sided fraud diamond theory (FDT) also considers

an individual's capability which includes personal traits and abilities that play a major role in whether fraud may actually occur even with the presence of the other three elements.

Wolfe and Hermanson (2004) further state that, many frauds especially some of the multibillion dollar ones would not have occurred without the right person with the right capabilities in place. Opportunity opens the doorway to fraud while incentive and rationalization can draw the person towards it but the person must have the capability to recognize the open doorway as an opportunity and take advantage of it by walking through not just once but time and time again.

The four elements of the fraud diamond theory are explained as; incentive where a person has a need to commit fraud, opportunity where there is a weakness in the system that the right person could exploit and fraud is possible, rationalization where the perpetrator has convinced themselves that the fraudulent behavior is worth the risks and the fourth element of capability where the person is aware that they have the necessary traits and abilities to be the right person to pull it off and that they have recognized that particular fraud opportunity to turn it into a reality. The authors note that, while these four elements certainly overlap, the primary contribution of fraud diamond is the capabilities to commit fraud are explicitly and separately considered in the assessment of fraud risk. By doing so , the fraud diamond moves beyond viewing the fraud opportunity largely in terms of environmental or situational factors as has been the practice under current and previous auditing standards.

The theory is applicable for this study since it implies that fraud can be reduced significantly if the pressures, opportunities and rationalization of individuals are addressed by the organization through their internal auditors addressing the organizational practices in relation to fraud by ensuring that fraud prevention and detection techniques are in place and that the fraud management program includes the capabilities aspect of the fraud perpetrators who could also be persons in position of influence.

### **2.2.3 Fraud Management Lifecycle Theory**

Wilhelm, (2004) states that the costs of fraud is passed on to society in form of increased customer inconvenience , opportunity costs, unnecessary high prices for goods and services and criminal activities funded by fraudulent gains. He based his research on the question; what if there existed a fraud management lifecycle that when managed effectively with successful balanced components would significantly reduce the loses and societal costs associated with fraud? The study developed a theoretical framework for the fraud management lifecycle and tested it with empirical research.

The fraud management lifecycle is made up of eight stages deterrence, prevention, detection, mitigation, analysis, policy, investigation and prosecution. The theory suggests that the last stage of the lifecycle which is prosecution is the culmination of all successes and failures in the fraud management lifecycle. Failures are there because the fraud was successful while successes are there because the fraud was detected, a suspect was identified , apprehended and charges filed. The prosecution stage includes asset recovery , criminal restitution and conviction with its attendant deterrent value . The interrelationship among each of the stages or nodes in the fraud management network are the building blocks of fraud management lifecycle theory.

The primary hypothesis of the study was that there is an eight stage fraud management lifecycle that drives success or failure in fraud management. A secondary hypothesis of the study establishes the premise that the successful balancing of activity within and among the fraud management lifecycle stages results in improved fraud management performance. The Hypothesis of the study was that fraud detection is but a single component in a comprehensive fraud management lifecycle that includes fraud deterrence, fraud prevention, fraud detection, fraud mitigation, fraud analysis, fraud policy, fraud investigation and fraud

prosecution. When these stages are not successfully intergrated and balanced , the benefits of advancements in fraud detection technologies are muted.

This theory is valuable to the study because the eight stages of fraud management lifecycle focuses on fraud prevention and mitigation and much of the value of the Fraud Management Lifecycle theory is inherent in and derived from its applicability across various industries. The eight stage of fraud management lifecycle also touches on some elements of fraud detection techniques and fraud policy which are variables of the study.

### **2.3 Empirical Review**

This is a review of the major variables of the study and how it affects the success of fraud risk management.

#### **2.3.1 Fraud Policy and Fraud Risk Management**

Petrascu and Tleanu, (2014) concluded that all entities need internal audit for business efficiency in the sense of a good management of its patrimony, of reducing costs (in an organized framework) while maximizing profit, and of achieving medium and long-term objectives. Furthermore, this activity should not be regarded strictly as an activity generating expenditures, but rather from the perspective of the benefits it entails in countering fraud and especially in increasing future added value. As organizations' work towards reducing the losses due to fraud, their anti-fraud programs are increasingly looking towards the internal audit function for support in light of the fact that over time as internal auditors review systems in the organization, they develop an overall knowledge of the organization's processes, risks, control systems and personnel which can contribute to an effective fraud risk management (Ojha, 2012).

A crucial part of an entity's corporate governance is its internal audit function (Coram, Ferguson, and Moroney, 2006). In addition to defining the roles and responsibilities of the audit board, management, and committee, as primarily responsible participants in this process, companies increasingly rely on the strength of internal audit (Dordevic and Dukic, 2015). Although it is clear that even the best established programs and mechanisms cannot provide a guarantee that fraud will not occur, the internal audit is the function from which much is expected in this regard. It is completely logical, given that, by directing its activities towards providing assurance on the effectiveness of all processes in the company and their improvement, internal audit cooperates with everyone in the company, which gives it the ideal position to take a proactive approach to reducing the risk of fraudulent behavior of employees (Dordevic and Dukic, 2015).

A code of conduct correctly applied represents one of the most important mechanisms of communicating to the employees the acceptable standards in their activity and to draw attention to the commitment management undertook in order to respect the entity's integrity (Petrascu and Tianu, 2014). A strong anti-fraud stance and proactive, comprehensive approach to combating fraud is now gradually becoming a pre-requisite and any organization that fails to protect itself appropriately, faces increased vulnerability to fraud (Deloitte, 2014). An organization's code of conduct may be the most important vehicle that management has to communicate to employee's key standards of acceptable business conduct. A well-written and communicated code goes beyond restating company policies such a code sets the tone for the organization's overall control culture, raising awareness of management's commitment to integrity and the resources available to help employees achieve compliance and integrity goals (KPMG Forensic , 2014).

The principal contribution is that internal auditors are primarily responsible for identifying fraud and are consequently more concerned about reporting incidents related to fraud

(Halbouni, 2015). An organizations response to fraud is crucial as it has the ability to prevent future occurrences. Any response to fraud should be swift and effective so as to percolate the right message to the employees (Deloitte, 2015). An important step in creating a culture of intolerance towards fraud is to act consistently when an economic infraction is discovered. In this way, the staff understands what are the consequences of a possible involvement in a fraud and that its detection is certain and inevitable thanks to the efficient system of control and risk management (Petrascu and Tieanu, 2014). Thus it is hypothesized in this study that;

**HO<sub>1</sub>:** *Fraud policy does not significantly contribute to success of fraud risk management*

### **2.3.2 Periodic Assessment of Fraud Risk Exposure and Fraud Risk Management**

A fraud risk assessment is a dynamic and interactive process for identifying and assessing fraud risks relevant to the organization. Fraud risk assessment addresses the risk of fraudulent financial reporting, fraudulent non-financial reporting, asset misappropriation, and illegal acts -including corruption (COSO, 2017). Performing an effective fraud risk assessment is the cornerstone of a fraud risk management program (Deloitte, 2009). To protect itself and its stakeholders effectively and efficiently from fraud, an organization should understand fraud risk and the specific risks that directly or indirectly apply to the organization. A structured fraud risk assessment, tailored to the organization's size, complexity, industry, and goals, should be performed and updated periodically (IIA, AICPA and ACFE, 2008).

According to Chartered Institute of Internal Auditors, the role of internal audit is to provide independent assurance that an organization's risk management, governance and internal control processes are operating effectively. Unlike external auditors, they look beyond financial risks and statements to consider wider issues such as the organization's reputation, growth, and its impact on the environment and the way it treats its employees (Ojha, 2012). Comprehensive knowledge and understanding of the risks of fraud allow internal audit to

adequately specify its tasks, objectives, and activities focused on fraud risk assessment, prevention and detection of fraud and ultimately, investigation of fraud. In this way, internal audit significantly improves the process of fraud risk management (Dordevic and Dukic, 2015). Saleem (2012), in his research concludes that, in general, fraud detection is the responsibility of management, who controls the day-to-day running of the organizations and that Auditors are not responsible for preventing and uncovering fraud. He further asserts that Auditors must do continuous risk assessment and tailoring of their audit strategy to suit.

The entity's capability to prevent and detect fraud depends on a correct and complete assessment of fraud risks (Petrascu and Ticianu, 2014). The need for timely and ongoing assurance over the effectiveness of risk management and control systems is critical. Organizations are continually exposed to significant errors, frauds or inefficiencies that can lead to financial loss and increased levels of risk (Coderre, 2005). While planning their annual audit plan, internal auditors should consider the assessment of fraud risk and review management's fraud management capabilities periodically. They should regularly and closely communicate with those responsible for risk assessments in the organization and also others in key roles throughout the organization, to ensure timely fraud risk management (Ojha, 2012). Organizations typically face a variety of fraud and misconduct risks. Like a more conventional entity-wide risk assessment, a fraud and misconduct risk assessment helps management understand the risks that are unique to the organization's operations, identify gaps or weaknesses in control to mitigate those risks, and develop a practical plan for targeting the right resources and controls to reduce such risks (KPMG Forensic, 2014). A robust fraud risk management thus, requires more than just ensuring an effective system of internal controls. It also requires clearly defined and implemented actions designed to reduce fraud risk and an ongoing assessment of the effectiveness of the organization's approach to managing the business risk of fraud (Deloitte, 2014). The fraud risk exposure should be assessed periodically to identify specific potential schemes and events that the organization



needs to mitigate. A good fraud risk assessment should necessarily answer three questions; Am I aware of all fraud scenarios in my immediate environment? Do I have the necessary controls in place? And am I aware of how a potential fraudster can override or circumvent existing systems and controls (Deloitte, 2015)? Thus it is hypothesised in this study that;

*H<sub>02</sub>: Periodic assessment of fraud risk exposure does not significantly contribute to success of fraud risk management*

### **2.3.3 Fraud Prevention and Fraud Risk Management**

When preventing fraud, opportunity is the most important factor to consider. If you eliminate opportunities for fraud to be committed, then it can be greatly reduced. Preventing fraud is much cheaper for companies than detecting it later because there is little chance that losses may be recovered once the fraud has already occurred. Opportunity is therefore where internal controls come into play (Kennedy, 2012). Increasingly, the internal audit function is not to monitor and detect but also to investigate fraud incidences when they arise. The role of internal audit in fraud risk management by way of preventing, detecting and investigating fraud has amplified as a result of economic uncertainty and increased focus of certain organization's management on fraud risks (Ojha, 2012).

It is profitable to prevent losses, and fraud prevention activities can help to ensure the stability and continued existence of a business. However, based on recent surveys, many organizations do not have a formal approach to fraud prevention (Doody, 2008). When it comes to fraud, there are many preventative measures that can be taken, but it is nearly impossible to fully extinguish it. If someone wants to commit fraud, they are most likely find a way to do it no matter what controls are in place. That is why preventing opportunities, through internal controls or otherwise, is the most important part of the fraud triangle. Once

an individual has established a rationalization and motive, they may commit the fraud once an opportunity presents itself (Kennedy, 2012).

One of the most effective ways to deal with the problem of fraud is to adopt methods that may decrease motive, restrict opportunity and limit the ability for potential fraudsters to rationalize their actions. In the case of deliberate acts of fraud, the aim of preventative controls is to reduce opportunity and remove temptation from potential offenders (Doody, 2008). An effective reporting mechanism is one of the key elements in fraud prevention program and can also have a positive impact on detection of fraud. It is essential for the internal audit function to have independent authority and reporting lines and have adequate access to the audit committee (Ojha, 2012). The role of the internal audit can include a varied set of responsibilities: supporting the management in establishing auditable anti-fraud mechanisms (Petrascu and Tieanu, 2014).

More often there is an expectation that the auditors have a responsibility to detect and prevent fraud. Though the auditors have a role to play in fraud risk management, they do not have a primary responsibility since this lies with management and those charged with governance of the organization. At the end of the 20th century and the beginning of the 21<sup>st</sup> century, auditors have become a necessity for the good-functioning and efficiency of an economic entity's management that can prevent and deter possible scenarios of trickery, funds embezzlement, or theft (Petrascu and Tieanu, 2014). The internal audit represents an efficient line of defense against fraud, having a role both in monitoring risks, as well as in fraud prevention and detection. The internal audit constitutes a tool at the disposal of the audit committee, the only one able to independently assess fraud risks and anti-fraud measures implemented by the executive board (Petrascu and Tieanu, 2014). Despite the serious risk that fraud presents to business, many organizations' still do not have formal systems and procedures in place to prevent, detect and respond to fraud (Doody, 2008). Thus it is hypothesized in this study that;

*HO<sub>3</sub>: Fraud Prevention does not significantly contribute to the success of fraud risk management*

### **2.3.4 Fraud Detection and Fraud Risk Management**

Fraud detection is an examination of the facts to identify the indicators of fraud. Reviewing and improving the internal control system is the primary defense against fraud and abuse (Saleem, 2012). Organizations have a better chance of detecting fraud and misconduct early when they have built a culture where firstly, employees believe they have a stake in the company or see that integrity is a key element of their organization and secondly, that they have the affirmative obligation to raise their hands and report improper conduct. It is important to understand that employees are more likely to raise concerns when they know where to turn for help, feel comfortable doing so without fear of retaliation and believe that management may be responsive to their concerns (KPMG Forensic , 2014).

A major reason why people commit fraud is because they are allowed to do so. There are a wide range of threats facing businesses. The threat of fraud can come from inside or outside the organization, but the likelihood that a fraud may be committed is greatly decreased if the potential fraudster believes that the rewards may be modest, that they may be detected or that the potential punishment may be unacceptably high (Doody, 2008). Internal auditors must: have enough knowledge in order to identify the signs of a possible fraud; be attentive of the cases that involve a risk of fraud; and appreciate the necessity to further investigate a case, inform the responsible persons from an organization and take actions to eliminate or reduce the possibility of fraud occurrence (Petrascu andTieanu, 2014).

ISA 240 states that an auditor conducting an audit in accordance with ISA's is responsible for obtaining reasonable assurance that the financial statements taken as a whole are free from material misstatement, whether caused by fraud or error. Where an organization has its own internal audit department the likelihood is that the task of investigating any incidence of fraud

would fall to them (Doody, 2008). A carefully planned and properly executed investigation can address a number of organizational objectives. First, the investigation can help determine the extent of potential liabilities and/or losses that may exist by gathering relevant information and facts. Such data can often be critical to various stakeholders in the organization including senior management, the board of directors and audit committee, shareholders, outside auditors, and others. Second, a properly executed investigation can result in partial or full recovery of losses, stop future losses and help mitigate other potential consequences (Deloitte, 2009).

Internal auditors, during their assignments, should spend an adequate time and attention to evaluating the framework and internal controls related to fraud risk management. It is also imperative to have a well-defined response plan to handle potential frauds uncovered during an internal audit assignment (Ojha, 2012). It is critical for an organization to develop fraud response strategies, which would help in minimizing the impact of frauds that occur, or are discovered, and come to the attention of the company, authorities and other interested parties (Deloitte, 2014). As organizations expand their global presence, it can be important that they have a well devised Fraud Response Management program in place that allows them to respond appropriately to allegations of fraud and misconduct around the world. This can be especially important in light of the world economic conditions (Deloitte, 2009).

Coram, Ferguson, and Moroney (2006) in their study , “value of internal audit in fraud detection”, found that organization’s with an internal audit function are more likely than those without to detect fraud, they further states that organization’s that relied solely on outsourcing their internal audit function were less likely to detect fraud. They concluded that, internal audit adds value through improving the control and monitoring environment within organization’s to detect fraud. The internal audit function is not to monitor and detect but also to investigate fraud incidences when they arise. The role of internal audit in fraud risk

management by way of preventing, detecting and investigating fraud has amplified as a result of economic uncertainty and increased focus of certain organization's management on fraud risks (Ojha, 2012). Thus it is hypothesised in this study that;

*HO<sub>4</sub>: Fraud detection does not significantly contribute to the success of fraud risk management*

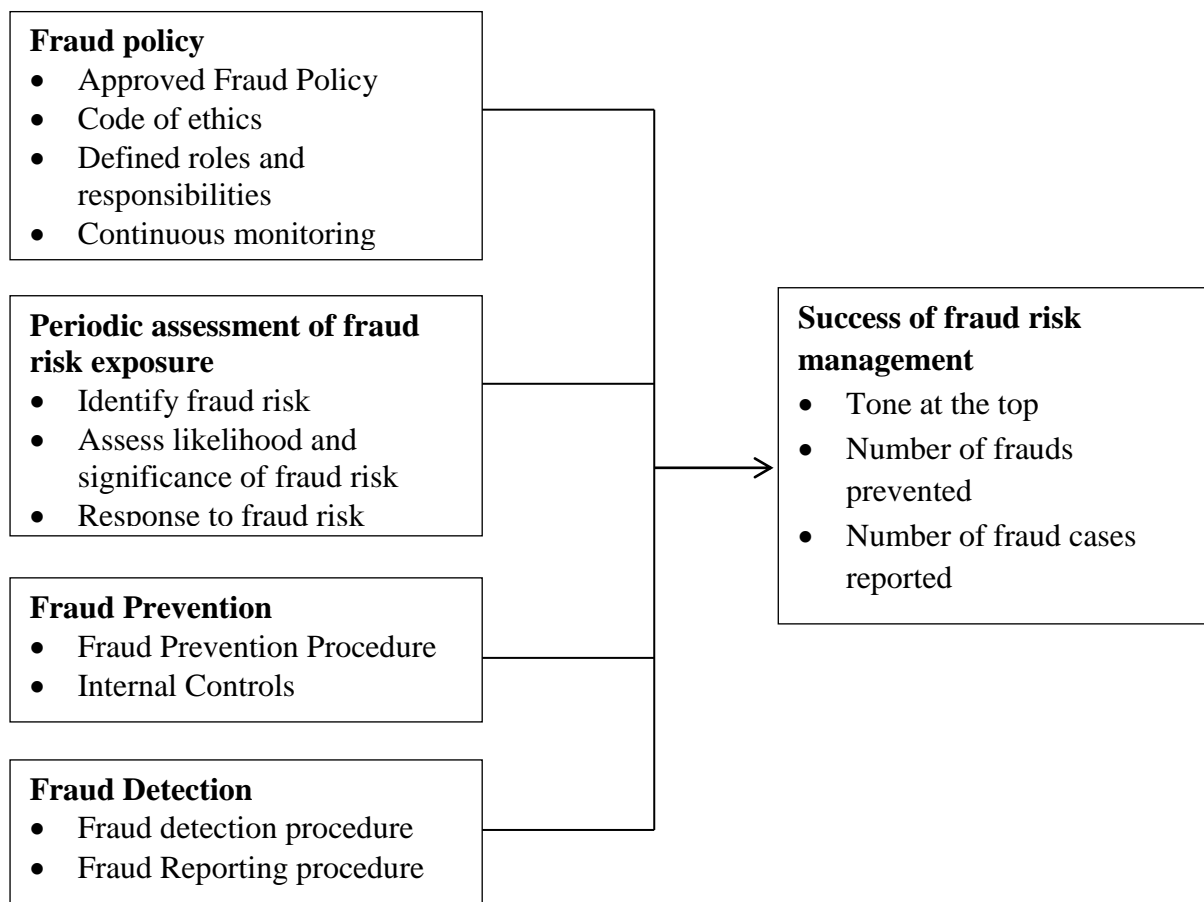
## **2.4 Knowledge Gaps**

There have been articles and research on management of fraud risk among them being providing insights into fraud prevention, detection and response (KPMG Forensic, 2014): and Fraud, Risk Management: Developing a strategy for prevention detection and Response (KPMG, 2006). Ohando, (2014 ) did a study on relationship between fraud risk management practices and financial performance of commercial banks in Kenya, Odhiambo, (2016) studied an evaluation of fraud management strategies by insurance companies in Kenya and Githecha , (2013) researched on the effect of fraud risk management strategies on the financial performance of commercial banks in Kenya . Despite all the authors touching on fraud risk management little is known of the role internal auditors' play in fraud risk management and its success on managing the risk of fraud especially in state corporations. Most of the articles concentrated on banking fraud and insurance fraud. It is therefore the aim of this paper to gain an understanding on the risk of fraud faced by state corporations and investigate the extent to which internal audit practices affect fraud risk management in state corporations in Kenya.

## 2.5 Conceptual Framework

**Independent Variables**

## **Dependent Variables**



**Figure 1: Figure 2.4: Conceptual Framework**

## 2.6 Operationalization of Variables

Operationalization as defined by Shuttleworth, (2008) is the process of strictly defining variables into measurable factors.

**Table 2.1: Operationalization of Variables**

Concept	Variable	Indicator	Measurement scale
Success of Fraud Risk Management	Dependent	-Tone at the top -Number of frauds prevented -Number of fraud cases reported	Ordinal/Interval
Fraud Policy	Independent	-Approved Fraud Policy -Code of ethics -Defined roles and responsibilities -Continuous monitoring	Ordinal/Interval
Periodic assessment of fraud risk exposure	Independent	-Identify fraud risk -Assess likelihood and significance of fraud risk -Response to fraud risk	Ordinal/Interval
Fraud Prevention	Independent	-Fraud Prevention Procedure -Internal Controls	Ordinal/Interval
Fraud Detection	Independent	-Fraud detection procedure -Fraud Reporting procedure	Ordinal/Interval

## 2.7 Research Hypothesis

The following are the research hypothesis

*HO<sub>1</sub>*: Fraud Policy does not significantly contribute to success of fraud risk management

*HO<sub>2</sub>*: Periodic assessment of fraud risk exposure does not significantly contribute to success of fraud risk management

*HO<sub>3</sub>*: Fraud Prevention does not significantly contribute to the success of fraud risk management

*HO<sub>4</sub>*: Fraud detection does not significantly contribute to the success of fraud risk management

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the methods and procedures the researcher employed to conclusively answer the research questions. The chapter covered the following areas ; Research Design, Target Population, Sampling and Sampling procedure, Research Instrument , Validity and Reliability of the instrument, Data Collection and Data Processing analysis.

#### **3.2 Research Design**

Research design can be thought of as the structure of research. It is the glue that holds all the elements of the research project together (Trochim, 2006). The researcher adopted a descriptive survey design in conducting this research. Descriptive studies are those that are used to describe phenomena associated with a subject population or to estimate proportions of the population that have certain characteristics (Cooper and Schindler, 2003). Descriptive research design can enable the researcher to capture quantitative data to provide in depth information through the use of frequencies, means, standard deviations and percentages. Descriptive research portrays an accurate profile of persons, events or situations (Robinson , 2002).

Quantitative research is usually used to provide numerical measurement and analysis of the usage dynamic and also provide if the relationship is positive or negative. This research design also portrays the characteristics of a population fully (Chandran , 2004). The study expects to capture quantitative data to enable the researcher measure the effect of internal audit practices in the success of fraud risk management. The research design therefore was suitable in conducting the study.



### 3.3 Target Population

A population is a well-defined set of people, services, elements and events, group of things or households that are being investigated (Ngechu, 2004). The population for this research covered all state corporations in Kenya. From information gathered from individual ministries websites and Kenya Gazette vol. CXVII no. 43 dated 27<sup>th</sup> April 2015 there are 158 state corporations in Kenya. The researcher selected the population since minimal research has been done on the state corporations in relation to internal audit practices in fraud risk management at the same time it has a well established governance structure hence considered best in collecting the required information to assist in achieving the objectives of the study.

### 3.4 Sample Size and Sampling Procedure

Sampling is the process of selecting units (people, organizations) from a population of interest so that by studying the sample, we may fairly generalize our results back to the population from which they were chosen (Trochim, 2006) .

**Table 3.4: Sample Size of State Corporations**

Name of Ministry	Total no. of state corporations	Percentage Population for Sample Size?	Sample Size
Industry Trade and Co-operatives	22	12.5	5
East African Affairs Commerce and Tourism	8	5	2
Health	3	2.5	1
Treasury	16	10	4
Sports , Culture and the Arts	8	5	2
Transport and infrastructure	26	15	6
Education	9	5	2
Information, Communication And Technology	11	7.5	3
East African Community Labor and Social Protection	6	2.5	1
Environment and natural resources	5	2.5	1
Interior and coordination of national government	14	10	4
Lands , Housing and Urban development	4	2.5	1
Energy and Petroleum	11	7.5	3
Defense	1	2.5	1
Agriculture , Livestock and Fisheries	14	10	4
<b>Total</b>	<b>158</b>	<b>100</b>	<b>40</b>

Proportionate stratified random sampling was used. The population was divided in strata which was the various ministries under which the state corporations are placed. The researcher subdivided the state corporations into strata (ministries), after which a simple random sample was used to select a sample from each strata. The researcher sampled 40 state corporations using a sampling fraction of 25% using the formula  $f = n/N$ , where  $f$ = sampling fraction,  $n$ = sample population and  $N$ = Target population.

### **3.5 Research Instrumentation and Data Collection**

The data collection method for this study was based on primary data. Primary data was collected by use of questionnaire as a research instrument. This allowed the researcher to ask more in depth questions for more insight and allowed immediate follow-up questions to the respondent and also guaranteed the relevance of information gathered. The data was collected from heads of audit function of these state corporations. The questionnaire was divided into six parts Section I had demographic data, Sections II to VI covered the questions related to the objectives of the study. The questionnaire was structured in order to enable the researcher collect quantitative data. The questionnaires solicited ideas related to the research problem from respondents addressing the research objective and research questions. Primary data was collected using a structured questionnaire administered by the researcher to the respondents through a drop and pick method.

### **3.6 Validity and Reliability of the Instrument**

Validity refers to how well a scientific test or piece of research actually measures what it sets out to, or how well it reflects the reality it claims to represent (AQR, 2016). Construct Validity was used to measure validity of the questionnaire. Construct validity is used to ensure that the measure actually measures what it is intended to measure (the construct), but not other variables. Using a panel of “experts” familiar with the construct is a way in which

this type of validity can be assessed. The experts can examine the items and determine what the specific item is intended to measure (Phelan and Wren, 2006). In order to demonstrate validity of the questionnaire, the researcher ensured that all the items in the questionnaire was based on the objectives of the study and was written in clear and precise words to avoid ambiguity and confusion among respondents, this was done in consultation with my supervisor. The questionnaire was developed based on the effect of internal audit practices on fraud risk management in state corporations. The questionnaire was administered to at least 2 internal auditors, 2 lay persons and my supervisor for validity check before administration.

Reliability has to do with the quality of measurement. In its everyday sense, reliability is the “consistency” or “repeatability” of your measures (Trochim, 2006). Reliability can be thought of as consistency. If the instrument consistently measures what it is intended to measure (Githinji, 2013)? A measure is considered reliable if it would give us the same result over and over again (assuming that what we are measuring is not changing) (Trochim, 2006). The questionnaire was tested for reliability using pilot method in state corporations that were not part of the sample population to ensure the instrument gives the same results when given the second time to a relatively different sample. The reliability was tested using Cronbach’s alpha coefficient. Cronbach’s alpha (or coefficient alpha); developed by Lee Cronbach in 1951 is a way to measure reliability of internal consistency of psychometric instrument (Andale, 2014). According to George and Mallery (2003), a Cronbach alpha coefficient of 0.7 is acceptable.

To measure the reliability of the data collection instruments, an internal consistency technique of Cronbach’s Alpha test was computed using SPSS. From the analysis, the research instrument was reliable since all the obtained independent variables had a Cronbach’s Alpha of greater than 0.7. This means that the research data had a relatively high internal consistency.

Variable	Cronbach's Alpha	Comments
Fraud Policy	0.876	Acceptable
Periodic Assessment of Fraud Risk Exposure	0.928	Acceptable
Fraud Prevention	0.873	Acceptable
Fraud Detection	0.844	Acceptable

### 3.7 Data Processing and Analysis

Completed questionnaires were checked for consistency and completeness. The data collected was gathered, sorted and coded to ensure all the responses are grouped as per the research objectives. Quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS) for regression analysis. The results obtained from the data was be summarized under common themes and presented in form of frequency tables, percentages, pie charts and graphs. Data was analyzed using descriptive statistics which include measures of central tendency, variance and standard deviation. A written explanation was provided to interpret data, draw conclusions and make recommendations. The purpose is to measure the effect of internal audit practices on fraud risk management in state corporations. Below is a model of the presentation;

$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon \dots \dots \dots \text{Equation (1)}$$

Where;

Y= Success of Fraud Risk Management (Dependent Variable)

$\alpha$ = constant

$\beta_1 \dots \dots \dots \beta_4$  = coefficients

$x_1 \dots \dots \dots x_4$  = independent variables

$x_1$  = Fraud Policy

$x_2$  = Periodic Assessment of Fraud Risk Exposure

$x_3$  = Fraud Prevention

$x_4$  = Fraud Detection

$\beta_1$  = Regression Coefficient of Variable  $x_1$

$\beta_2$  = Regression Coefficient of Variable  $x_2$

$\beta_3$  = Regression Coefficient of Variable  $x_3$

$\beta_4$  = Regression Coefficient of Variable  $x_4$

$\varepsilon$  = error term which is here assumed to be normally distributed with mean 0 and some constant variance.

### **3.7.1 Testing of Hypothesis**

According to Kothari, (2004) hypothesis testing enables us to make probability statements about parameters. The hypothesis may not be proved absolutely but in practice it is accepted if it has withstood a critical testing. The researcher performed the following diagnostic tests on the regression model; Chi Square Test, ANOVA, Normality test, Correlation and Multicollinearity tests.

Chi Square test ( $X^2$ ) is a statistical measure used in the context of sampling analysis for comparing a variance to a theoretical variance (Kothari, 2004). As a non-parametric test, it can be used to determine if categorical data shows dependency or the two classifications are independent. It can also be used to make comparisons between theoretical populations and actual data when categories are used. Thus, the chi-square test is applicable in large number of problems. The test is, in fact, a technique through the use of which it is possible for all researchers to test the goodness of fit, test the significance of association between two attributes and test the homogeneity or the significance of population variance (Kothari, 2004). The researcher used the Chi Square Test to test for significance of association between variables

Correlation observes whether movement in value of numbers in one data set is related to movement in value of numbers in the other data set by comparing two data sets together. For instance, this study used correlation to establish relationship between various independent variables and the dependent variable for example the relationship between fraud policy and success of fraud risk management in state corporations. The equation to test for correlation report this relationship as a coefficient that is between zero (0) as absolutely no relationship between the two data sets and as one perfect relationship between the two data.

The relationship of a set of all independent variable in relation to the dependent variable is known as multiple correlations while partial correlation measures a relation between a dependent variable and a particular independent variable holding all other variables constant (Kothari, 2009). In this study, the independent variables included fraud policy, periodic assessment of fraud risk exposure, fraud prevention and fraud detection. Multiple correlation analysis was used to answer the following hypothesis;

The entire set of independent variables; fraud policy, periodic assessment of fraud risk exposure, fraud prevention and fraud detection do not significantly contribute to success of fraud risk management in state corporations in Kenya (dependent variable).

The test for significance of multiple correlations was determined by the use of F-test. This test checks the significance of the whole regression model with the prediction that all the independent variable that is Fraud policy, periodic assessment of fraud risk exposure, fraud prevention and fraud detection has no effects on the dependent variable hence;  $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$  and the alternative prediction is that at least one of the independent variable is not equal to zero (0) that is;  $\beta_j \neq 0$ ;  $j = 1, 2, 3, 4$ . The prediction was to be rejected if  $F_{cal} \geq F_{crit}$  hence concluding that at least one of the partial regressions  $\beta_1, \beta_2, \beta_3$  or  $\beta_4$  is not equal to zero and therefore the overall model is significant. In this study analysis of partial correlation between variables was determined to find out which particular independent

variable has effects on dependent variable (success of fraud risk management in state corporations).

Kothari, (2009) further points out that if partial coefficient of correlation is measured separately the relationship between two variables in a way that affect other related variable are eliminated; the aim of the analysis is to measure the relationship between and independent variable on the dependent variable holding all other variables constant; thus each partial coefficient of correlation measures the effect of its independent variable on dependent variable. For this reason coefficient of correlation between each sets of pairs of variables was computed guided by research hypothesis as follows;

- a) Fraud policy does not significantly contribute to success of fraud risk management. To answer this hypothesis, the relationship between fraud policy and success of fraud risk management in state corporations is determined by use of regression equation  $y = \alpha + \beta_x + \epsilon$  where y is success of fraud risk management in state corporations; x is fraud policy and  $\beta$  is the coefficient of correlation.

The independent variables; periodic assessment of fraud risk management, fraud prevention and fraud detection are held constant. The same was computed to apply on the remaining hypothesis for the rest of the independent variables respectively.

To test for the *significance* of each of the partial regression coefficient the hypothesis was that each independent variable does not significantly contribute to the success of fraud risk management in state corporations that is  $\beta_j = 0$  otherwise where  $\beta_j \neq 0$ ;  $j = 1,2,3,4$ . If  $t_{calc} \geq t_{crit}$  then the prediction is rejected hence there is effect at five percent (5%) significance level. In this study analysis of partial correlation between variables is determined to find out which particular independent variable has effects on dependent variable (success of fraud risk management in state corporations).

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION OF FINDINGS AND DISCUSSION**

#### **4.1 Introduction**

This chapter is the implementation of the research methodology. It describes the methods and procedures the researcher employed to conclusively answer the research questions. The chapter covered the following areas; Response rate, Demographic information, study variables, diagnostic tests and model fitting.

#### **4.2 Response Rate**

The study targeted all state corporations in Kenya with a sample of 40 state corporations in Kenya. 33 questionnaires were fully filled out and returned while 7 were not. The study managed to obtain a positive response rate of 82.5%.

#### **4.3 Demographic Information**

This is the background information of the respondents that includes age, gender, education level and years of service.

##### **4.3.1. Age of respondents**

Most of the respondents were aged between 25 to 35 years. As per the data collected 54.5% of the respondents were aged between 25-35 years while 45.5% were 36 years and above indicating that most of the internal auditors in state corporations are aged between 25-35 years.

##### **4.3.2 Gender of Respondents**

From the response 60.6 % of the respondents were male while 39.4% of the respondents were female indicating that audit profession in the state corporations is majorly male dominated.



### 4.3.3 Education Level of Respondents

The majority of respondents had obtained a postgraduate certificate as their highest level of education which translated to 75.8% of the total respondents the least being those who had attained undergraduate certificate translating to 24.2%. This indicated that the majority of employees in the state corporations are educated and provide skilled labor.

### 4.3.4 Number of years within the organization

Majority of the respondents had served the organization for less than 5 years which translated to 51.5% followed by 36.4% serving the organization for a period of between 5-9 years the least of them being 12.1% serving for a period between 10-15 years. This is an indication of high staff turnover rate in the field of audit in the state corporations.

**Table 4.1: Years of Service**

	Frequency	Percent	Valid Percent	Cumulative Percent
	less than 5	17	51.5	51.5
Valid	5-9 years	12	36.4	87.9
	10-15 years	4	12.1	100.0
	<b>Total</b>	<b>33</b>	<b>100.0</b>	<b>100.0</b>

### 4.4 Study Variables

The study variables include; Fraud policy, Periodic Assessment of fraud risk exposure, Fraud prevention, Fraud detection and Success of fraud risk management. The research findings of each are presented and discussed below;

#### **4.4.1 Fraud Policy**

The researcher sought to find out whether fraud policy had an effect on success of fraud risk management. Standard deviations and mean with values ranging between 1 and 5 were used where a mean of 1.0-1.49 indicates that the respondents strongly disagreed, 1.5-2.49 indicates that the respondents disagreed, 2.5-3.49 indicates that the respondents were neutral, 3.5-4.49 indicates the respondents tend to agree while 4.5-5.0 indicates the respondents strongly agreed. The data shows that the perception of the respondents was mostly neutral with an average mean of 3.19.

Referring to table 4.2 below, respondents were asked to indicate their level of agreement or disagreement based on aspects of Fraud Policy. From the analysis, majority of the respondents were in support to the statement that the company has a code of ethics that is signed by all employees in regards to fraud and corruption which had a highest mean of 3.64 and standard deviation of 1.454 and variance of 2.114 while the statement the company has a variety of reporting channels of fraudulent activities to which staff have been sensitized on had a least mean of 2.85 and standard deviation of 1.395 and a variance of 1.945. This implies that most of the respondents agreed with the statement that their company had a code of ethics that is signed by all employees in regards to fraud and corruption and that majority of the respondents neither agreed nor disagreed with the statement the company has a variety of reporting channels of fraudulent activities to which staff had been sensitized on.

**Table 4.2: Descriptive Statistics: Fraud Policy**

	N	Min	Max	Mean	Std. Deviation	Variance
Company has a variety of reporting channels of fraudulent activities to which staff have been sensitized on	33	1	5	2.85	1.395	1.945
Company's internal audit function maintains a record of fraudulent activities prevented	33	1	5	2.88	1.431	2.047
Company's internal audit function maintains a record of fraudulent cases that have been reported	33	1	5	2.94	1.413	1.996
Company has an approved fraud policy that has been shared to all employees	33	1	5	3.15	1.584	2.508
Company's fraud policy has defined roles and responsibilities of all staff in all levels in management of fraud risk	33	1	5	3.27	1.376	1.892
Company's internal audit function performs a continuous monitoring of possible fraudulent activities	33	1	5	3.58	1.226	1.502
Company has a code of ethics that is signed by all employees in regards to fraud and corruption	33	1	5	3.64	1.454	2.114
Valid N (list wise)	33					

#### 4.4.2 Periodic Assessment of Fraud Risk Exposure

The researcher sought to find out whether periodic assessment of fraud risk exposure had a significant effect on success of fraud risk management. Standard deviations and mean with values ranging between 1 and 5 were used where a mean of 1.0-1.49 indicates that the respondents strongly disagreed, 1.5-2.49 indicates that the respondents disagreed, 2.5-3.49 indicates that the respondents were neutral, 3.5-4.49 indicates the respondents tend to agree while 4.5-5.0 indicates the respondents strongly agreed. The data shows that most respondents were neutral with the statement with an average mean of 3.13. From the analysis of the statement on periodic assessment of fraud risk exposure, respondents were asked to

respond to their level of agreement or disagreement. Most of the respondents were in support to the statement that the internal audit function shares risk assessment report with the management for improvement purposes with a highest mean of 3.39 standard deviation of 1.298 and variance of 1.684 while the company's internal audit function performs a periodic fraud risk assessment of all areas of operation had a lowest mean of 2.85, standard deviation of 1.349 and variance of 1.820. This implies that the respondents neither agreed nor disagreed to the statement that internal audit function shares risk assessment report with management for improvement purposes and also the company's internal audit function performs a periodic fraud risk assessment of all areas of operation ( see table 4.3 below).

**Table 4.3: Descriptive Statistics: Periodic Assessment of Fraud Risk Management**

	N	Min	Max	Mean	Std. Deviation	Variance
Company's internal audit function performs a periodic fraud risk assessment of all areas of operation	33	1	5	2.85	1.349	1.820
All the possible fraud areas have been identified and documented	33	1	5	3.03	1.357	1.843
Company has a fraud risk register identifying all fraud risks in all areas of operation	33	1	5	3.06	1.368	1.871
The likelihood of occurrence of the fraud risks have been identified and documented	33	1	5	3.18	1.310	1.716
Mitigating measures for the identified fraud risks have been put in place	33	1	5	3.18	1.185	1.403
The fraud risks have been ranked according to their impact	33	1	5	3.21	1.364	1.860
The internal audit function shares risk assessment report with the management for improvement purposes	33	1	5	3.39	1.298	1.684
Valid N (list wise)	33					

### **4.4.3 Fraud Prevention**

The researcher sought to find out whether fraud prevention had an effect on success of fraud risk management. Standard deviations and mean with values ranging between 1 and 5 were used where a mean of 1.0-1.49 indicates that the respondents strongly disagreed, 1.5-2.49 indicates that the respondents disagreed, 2.5-3.49 indicates that the respondents were neutral, 3.5-4.49 indicates the respondents agree while 4.5-5.0 indicates the respondents strongly agreed. The data shows that most respondents were neutral with the statements on fraud prevention with an average mean of 2.92.

Most of the respondents were in support to the statement the company has internal controls in place designed to help in prevention of fraud and misconduct which had a highest mean of 3.85 standard deviation of 0.972 and a variance of 0.945 while the company has sensitized staff on most common fraud within the business functions and how to avoid them had the lowest mean of 2.36, standard deviation of 1.319 and variance of 1.739. This implies that majority of the respondents agree that the company has internal controls in place designed to help in prevention of fraud and misconduct while majority of the respondents disagreed that the company had sensitized staff on most common fraud within the business functions and how to avoid them.(see Table 4.4 below).

**Table 4.4: Descriptive Statistics: Fraud Prevention**

	N	Min	Max	Mean	Std. Deviation	Variance
Company has sensitized staff on most common fraud within the business functions and how to avoid them	33	1	5	2.36	1.319	1.739
Company has automated controls that capture antifraud related activities	33	1	5	2.42	1.226	1.502
The fraud risk management program has been shared across the organization	33	1	5	2.67	1.291	1.667
Company has a fraud prevention strategy in place	33	1	5	2.88	1.409	1.985
Company's internal audit function continuously test the effectiveness of antifraud and prevention controls	33	1	5	3.09	1.259	1.585
Company's internal audit function from time to time does ad-hoc testing to look for indicators of fraud	33	1	5	3.18	1.357	1.841
Company has internal controls in place designed to help in prevention of fraud and misconduct	33	1	5	3.85	.972	.945
Valid N (list wise)	33					

#### 4.4.4 Fraud Detection

The researcher sought to find out whether fraud detection had an effect on success of fraud risk management. Standard deviations and mean with values ranging between 1 and 5 were used where a mean of 1.0-1.49 indicates that the respondents strongly disagreed, 1.5-2.49 indicates that the respondents disagreed, 2.5-3.49 indicates that the respondents were neutral, 3.5-4.49 indicates the respondents agree while 4.5-5.0 indicates the respondents strongly agreed. The data shows that most respondents were neutral with the statements on fraud prevention with an average mean of 2.93.

Respondents were asked to indicate their support level to the statement relating to fraud detection, from the analysis the company has internal controls designed to detect fraud had the highest mean of 3.55 standard deviation of 1.092 and variance of 1.193 while the company has forensic investigators apart from internal audit function to help in fraud investigation had lowest mean of 2.03 standard deviation of 1.380 and variance of 1.905. This implies that most of the respondents agree with the statement the company has internal controls designed to detect fraud while majority of the respondents disagreed that the company had forensic investigators apart from internal audit function to help in fraud investigation. (See Table 4.5 below).

**Table 4.5: Descriptive Statistics: Fraud Detection**

	N	Min	Max	Mean	Std. Deviation	Variance
Company has forensic investigators apart from internal audit function to help in fraud investigation	33	1	5	2.03	1.380	1.905
Internal audit function has data analytics procedures for detecting fraud	33	1	5	2.67	1.242	1.542
Company has documented fraud detection techniques in place	33	1	5	2.73	1.353	1.830
Company has identified fraud investigation protocols to follow when a fraud is detected	33	1	5	3.00	1.299	1.688
There is a defined process of fraud investigation procedure	33	1	5	3.06	1.273	1.621
Company has corrective actions in place in the event of fraud occurring	33	1	5	3.48	1.228	1.508
Company has internal controls designed to detect fraud	33	1	5	3.55	1.092	1.193
Valid N (list wise)	33					

#### **4.4.5 Success of Fraud Risk Management**

The researcher sought to find out the level of agreement on the statement related to success of fraud risk management. Standard deviations and mean with values ranging between 1 and 5 where a mean of 1.0-1.49 indicates that the respondents strongly disagreed, 1.5-2.49 indicates that the respondents disagreed, 2.5-3.49 indicates that the respondents were neutral, 3.5-4.49 indicates the respondents agreed while 4.5-5.0 indicates the respondents strongly agreed. The data shows that most respondents were neutral with the statements on fraud prevention with an average mean of 2.98.

Statement relating to Success of fraud risk management was analyzed and compared using mean range in ascending order. From the analysis top management enforces values and ethics and expectation from employees in regards to fraud and misconduct had the highest mean of 3.82, standard deviation of 1.211 and variance of 1.466 while the company has a culture of rewarding employee integrity had the lowest mean of 2.30 standard deviation of 1.185 and variance of 1.405. This implies that most of the respondents agreed that top management values, ethics and expectations from employees in regards to fraud and misconduct while majority of the respondents disagreed that the company had a culture of rewarding employee integrity (See Table 4.6 below).



**Table 4.6: Descriptive Statistics: Success of Fraud Risk Management**

	N	Min	Max	Mean	Std. Deviation	Variance
Company has a culture of rewarding employee integrity	33	1	5	2.30	1.185	1.405
The reputation of the company in terms of fraud and corruption is commendable	33	1	5	2.82	1.211	1.466
Company has safe mechanism for reporting fraud and misconduct that employees can use without fear of retaliation	33	1	5	2.85	1.326	1.758
Company deals with fraud perpetrators by ensuring they are charged	33	1	5	2.91	1.156	1.335
Company's top management have set the tone at the top in regards to fraud risk management	33	1	5	2.94	1.144	1.309
Company supports zero tolerance to fraud and corruption at all levels in the organization	33	1	5	3.24	1.062	1.127
Top management enforces values and ethics and expectation from employees in regards to fraud and misconduct	33	1	5	3.82	1.211	1.466
Valid N (list wise)	33					

#### 4.5 Diagnostic Tests

Diagnostics Tests were performed on the data collected. Below is the presentation of the research findings

##### 4.5.1 Chi- Square test ( $X^2$ )

Chi-Square test ( $X^2$ ) was performed to test for significance between variables and the aim was to establish the relationship between the independent variables (fraud policy, periodic assessment of fraud risk management, fraud prevention and fraud detection) and the success of fraud risk management.

The study sought to find out how fraud policy influences the success of fraud risk management. The results of statistical significance by using Pearson Chi-Square ( $X^2$ ) were summarized in table 4.7 below. The value of Pearson Chi –Square statistic ( $X^2$ ) from the sample data was 442.420. A significance level of  $\alpha= 0.05$  or 5% was used in making inference. If the Pearson Chi-Squared statistic which is 0.001 is less than 0.05; there is a relationship between fraud policy and success of fraud risk management. This means that there is 0.1% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant. In other word fraud policy as an internal audit practice had a statistically significant influence on the success of fraud risk management.

**Table 4.7: Chi-Square Test: Fraud Policy and Success of Fraud Risk Management**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	442.420 <sup>a</sup>	357	.001
Likelihood Ratio	149.354	357	1.000
Linear-by-Linear Association	13.047	1	.000
N of Valid Cases	33		

a. 396 cells (100.0%) have expected count less than 5. The minimum expected count is .03.

Similarly, the study sought to find out how periodic assessment of fraud risk exposure influences the success of fraud risk management. After analysis of data gathered from the respondents, the results of statistical significance by using Pearson Chi –Square ( $X^2$ ) were summarized in table 4.8 below. The value of Pearson Chi –Square statistic ( $X^2$ ) from the sample data was 300.254. The test statistics to use in making inference with a significance level,  $\alpha= 0.05$  or 5%. If the Pearson Chi-Squared statistic which was 0.582 and is greater than

0.05, there is no relationship between. This means that there is 58% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically not significant. In other words, Periodic assessment of fraud risk exposure does not significantly contribute to success of fraud risk management.

**Table 4.8: Chi-Square Tests: Periodic Assessment of Fraud Risk Exposure and Success of Fraud Risk Management**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	300.254 <sup>a</sup>	306	.582
Likelihood Ratio	137.722	306	1.000
Linear-by-Linear Association	3.162	1	.075
N of Valid Cases	33		

a. 342 cells (100.0%) have expected count less than 5. The minimum expected count is .03.

The study also sought to find out the effect of fraud prevention on the success of fraud risk management. After analysis of data gathered from the respondents, the results of statistical significance by using Pearson Chi –Square ( $X^2$ ) were summarized in table 4.9 below. The value of Pearson Chi –Square statistic ( $X^2$ ) from the sample data was 299.796. A significance level of  $\alpha= 0.05$  or 5% is used in making inference. Since the Pearson Chi-Square statistic which is 0.319 is greater than 0.05; there is no relationship between the variables. This means that there is 31.9% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population so therefore the rule of inference was that this relationship was statistically not significant. In other words fraud prevention does not significantly contribute to the success of fraud risk management

**Table 4.9: Chi-Square Test: Fraud Prevention and Success of Fraud Risk Management**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	299.796 <sup>a</sup>	289	.319
Likelihood Ratio	131.810	289	1.000
Linear-by-Linear Association	2.641	1	.104
N of Valid Cases	33		

a. 324 cells (100.0%) have expected count less than 5. The minimum expected count is .03.

The study also sought to find out how fraud detection influences on the success of fraud risk management. The results of statistical significance by using Pearson Chi –Square ( $X^2$ ) are summarized in table 4.10 below. The value of Pearson Chi –Square statistic ( $X^2$ ) from the sample data was 316.580. A significance level,  $\alpha= 0.05$  or 5% is used in making inference. If the Pearson Chi-Square statistic which is 0.005 is less than 0.05; there is a relationship between the variables. This means that there is 0.5% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant. In other words fraud detection significantly contributes to the success of fraud risk management.

**Table 4.10: Chi -Square Test: Fraud Detection and Success of Fraud Risk Management**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	316.580 <sup>a</sup>	255	.005
Likelihood Ratio	132.351	255	1.000
Linear-by-Linear Association	3.978	1	.046
N of Valid Cases	33		

a. 288 cells (100.0%) have expected count less than 5. The minimum expected count is .03.

### 4.5.2 Inferential Statistics

Results in table 4.11 below shows that there is positive and significant relationship between Success of Fraud Risk Management and Fraud Policy  $r = 0.639$ ,  $p$  value  $< 0.05$ . There is positive and significant relationship between Success of Fraud Risk Management and Periodic Assessment of Fraud Risk Exposure  $r = 0.314$ ,  $p$  value  $< 0.05$ . There is positive and significant relationship between Success of Fraud Risk Management and Fraud Prevention  $r = 0.287$ ,  $p$  value  $< 0.05$ . There is positive and significant relationship between Success of Fraud Risk Management and Fraud Detection  $r = 0.353$ ,  $p$  value  $< 0.05$ . (See table 4.11)

**Table 4.11: Correlation Matrix**

		Success of Fraud Fraud Risk Policy Management	Periodic Assessment of Fraud Risk Exposure	Fraud Prevention	Fraud Detection	
Success of Fraud Risk Management	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	33				
Fraud Policy	Pearson Correlation	.639**	1			
	Sig. (2-tailed)	.000				
	N	33	33			
Periodic Assessment of Fraud Risk Exposure	Pearson Correlation	.314	.669**	1		
	Sig. (2-tailed)	.075	.000			
	N	33	33	33		
Fraud Prevention	Pearson Correlation	.287	.588**	.643**	1	
	Sig. (2-tailed)	.105	.000	.000		
	N	33	33	33	33	
Fraud Detection	Pearson Correlation	.353*	.712**	.580**	.726**	1
	Sig. (2-tailed)	.044	.000	.000	.000	
	N	33	33	33	33	33

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

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

### 4.5.3 Analysis of Variance

This test was conducted to test for significance of the multiple correlations to prove that fraud policy, periodic assessment of fraud risk exposure; fraud prevention and fraud detection do not significantly contribute to success of fraud risk management. Analysis of variance shows

that Fraud Detection, Periodic Assessment of Fraud Risk Exposure, Fraud Prevention and Fraud Policy has a joint contribution to success of fraud risk management at  $F = 5.606$  and p-value 0.002 (See Table 4.12 below).

**Table 4.12: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.598	4	2.399	5.606	.002 <sup>b</sup>
	Residual	11.984	28	.428		
	Total	21.582	32			

a. Dependent Variable: Success of Fraud Risk Management

b. Predictors: (Constant), Fraud Detection, Periodic Assessment of Fraud Risk Exposure, Fraud Prevention, Fraud Policy

#### 4.6 Model Fitting

The model summary below explains the model; the percentage of variation in success of fraud risk management which can be explained jointly by Fraud Policy, Periodic Assessment of Fraud Risk Exposure, Fraud Prevention, Fraud Detection. An  $R^2$  of 0.365 shows that 36.5% of the changes in success of fraud risk management can be explained by Fraud Detection, Periodic Assessment of Fraud Risk Exposure, Fraud Prevention and Fraud Policy while the remaining percentage can be explained by other factors which are excluded in the model (See Table 4.13 below;).

**Table 4.13: Model Summary**

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
1	.667 <sup>a</sup>	.445	.365	.65422	1.680

a. Predictors: (Constant), Fraud Detection, Periodic Assessment of Fraud Risk Exposure, Fraud Prevention, Fraud Policy

b. Dependent Variable: Success of Fraud Risk Management

#### 4.6.1 Regression Co-efficient

Regression equation  $Y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + e$

$$Y = 1.691 + 0.671X_1 - 0.133X_2 + 0.016X_3 - 0.0163X_4$$

Success of Fraud Risk Management = 1.61 + 0.671 Fraud Policy - 0.133 Periodic assessment of Fraud Risk Exposure + 0.016 Fraud Prevention - 0.0163 Fraud Detection

From the model, when other factors (Fraud Detection, Periodic Assessment of Fraud Risk Exposure, Fraud Prevention and Fraud Policy) are constant, Success of Fraud Risk Management is 1.691.

Table 4.14 below shows that there is positive and significant relationship between the Success of Fraud Risk Management and Fraud Policy (B = 0.671, p value > 0.05. Thus holding other factors constant (Fraud Detection, Periodic Assessment of Fraud Risk Exposure, Fraud Prevention) Fraud policy increases the Success of Fraud Risk Management by 0.671 units.

Secondly, there is negative relationship between the Success of Fraud Risk Management and Periodic Assessment of Fraud Risk Exposure (B = - 1.33, p value > 0.05. Holding other factors constant (Fraud Detection, Fraud policy, Fraud Prevention) Periodic Assessment of Fraud Risk Exposure causes a decrease on success Fraud Risk Management by -1.33.

Third, there is a positive and significant relationship between the Success of Fraud Risk Management and Fraud Prevention (B = 0.016, p value > 0.05. Holding other factors constant (Fraud Detection, Periodic Assessment of Fraud Risk Exposure, Fraud Policy) Fraud Prevention increases the Success of Fraud Risk Management by 0.016 units.

Fourth, there is negative relationship between the Success of Fraud Risk Management and Fraud Detection (B = -0.163, p value > 0.05. Holding other factors constant (Periodic

Assessment of Fraud Risk Exposure, Fraud Prevention, Fraud policy) Fraud Detection decreases the Success of Fraud Risk Management by -0.163 units.

**Table 4.14: Regression of Coefficients and Multicollinearity**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.691	.423		3.996	.000		
Fraud Policy	.671	.172	.876	3.904	.001	.394	2.539
Periodic Assessment of Fraud Risk Exposure	-.133	.155	-.179	-.860	.397	.457	2.190
Fraud Prevention	.016	.192	.019	.085	.933	.398	2.511
Fraud Detection	-.163	.215	-.181	-.757	.456	.348	2.873

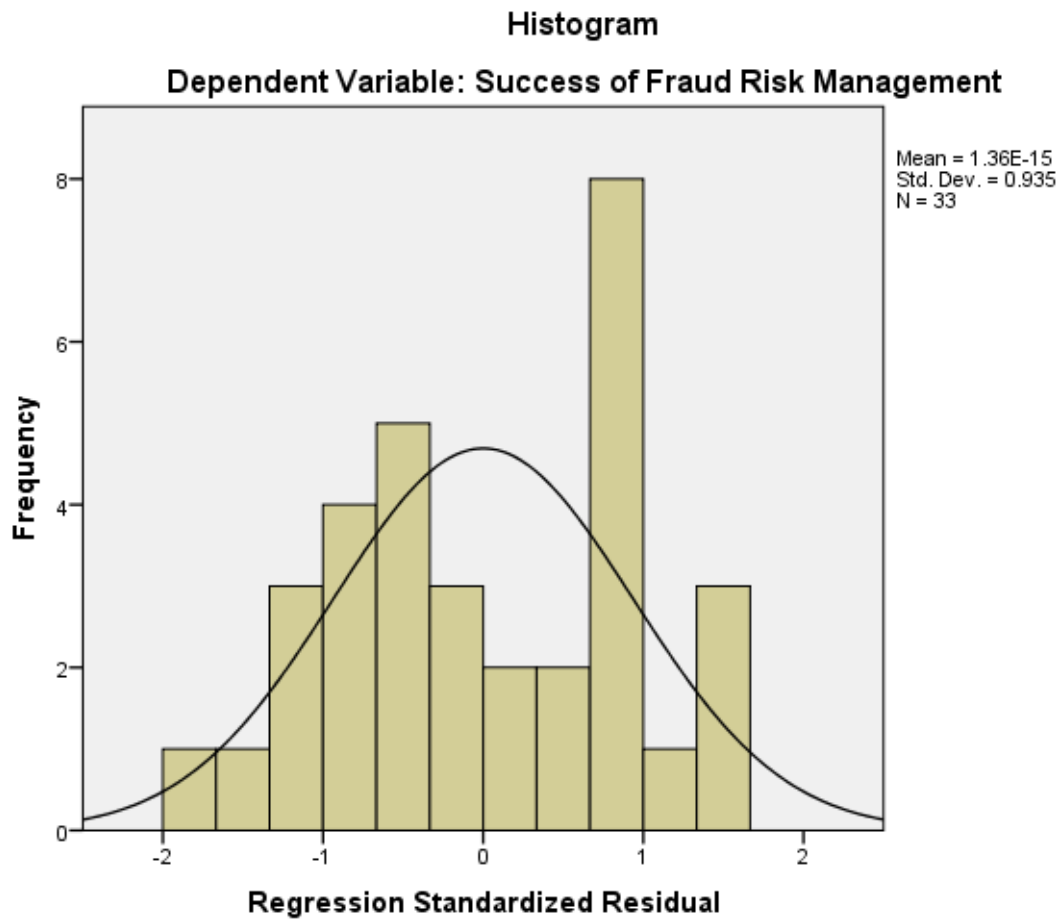
a. Dependent Variable: Success of Fraud Risk Management

#### 4.6.2 Normality Test

Figure 4.1 below shows that success of fraud risk management was normally distributed since the mean was 0 and standard deviation was 1



**Figure 2: Normality Tests**



#### **4.6.3 Multicollinearity**

Table 4.14 above also tests for multicollinearity of the model to determine the association among the independent variables; both variance inflation factor (VIF) and tolerance limits were used to examine the association among independent variables. According to Gujrati (2012) the threshold for VIF should be 10, thus for VIF greater than 10 there is multicollinearity. In the study the sum of the VIF of the independent variables was 10.113 hence greater than 10 thus the independent variables had related impact on the success of fraud risk management.

#### 4.7 Hypothesis Testing

According to the value and level of significance of the regression coefficients, we fail to reject the three null hypothesis and conclude that Fraud policy has no significant effect on Success of Fraud Risk Management, Fraud Risk Exposure has a significant effect on Success of Fraud Risk Management, Fraud Prevention has a significant effect on Success of Fraud Risk Management and Fraud Detection has a significant effect on Success of Fraud Risk Management

**Table 4.15: Hypothesis Testing**

<b>Hypothesis Statement</b>	<b>Test mode</b>	<b>Results</b>
Fraud Policy	$Y = \beta_0 + \beta_1 X_1 + \varepsilon$	$p > 0.05$ Rejected
Periodic Assessment of Fraud Risk Exposure	$Y = \beta_0 + \beta_2 X_2 + \varepsilon$	$P < 0.5$ Fail to reject
Fraud Prevention	$Y = \beta_0 + \beta_3 X_3 + \varepsilon$	$p > 0.05$ Fail to reject
Fraud Detection	$Y = \beta_0 + \beta_4 X_4 + \varepsilon$	$P < 0.5$ Fail to reject

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECCOMENDATIONS**

#### **5.1 Introduction**

In this chapter, a summary of the main findings are presented and conclusions drawn. Recommendations for action are made and areas for further research identified.

#### **5.2 Summary**

The study main objective was to analyze the effect of internal audit practices in fraud risk management in state corporations in Kenya with special emphasis on the state corporations as the target population. The following was the summary of the data collected.

##### **5.2.1 Fraud Policy and Success of Fraud Risk Management**

The first specific objective was to establish the extent to which fraud policy contributes to success of fraud risk management in state corporations. From the study findings various techniques of fraud policy were studied including; variety of fraud reporting channels, whether internal audit function maintains a record of fraudulent activities prevented, whether internal audit function maintains a record of fraudulent cases that have been reported, approved fraud policy, defined roles and responsibilities of all staff in all levels in management of fraud risk, whether internal audit function performs a continuous monitoring of possible fraudulent activities and code of ethics that is signed by all employees in regards to fraud and corruption.

According to Deloitte (2014), a strong anti-fraud stance and proactive, comprehensive approach to combating fraud is now gradually becoming a pre-requisite and any organization that fails to protect itself appropriately, faces increased vulnerability to fraud. Dordevic and Dukic, (2015) also argues that, Although it is clear that even the best established programs

and mechanisms cannot provide a guarantee that fraud will not occur, internal audit is the function from which much is expected in this regard. KPMG forensic, (2014) also states that an organization's code of conduct may be the most important vehicle that management has to communicate to employee's key standards of acceptable business conduct. This notion seems to be in correspondence with the study findings as it showed a statistically significant relationship between fraud policy and success of fraud risk management. This had a combined mean of 3.19, standard deviation of 1.072 and a variance of 1.149. From the study findings using Pearson Chi square test of independence fraud policy has an influence on success of fraud risk management. The values of Pearson Chi-Square at  $\alpha = 0.05$  or 5% significance level yielded a Pearson Chi-Squared statistic which was 0.001 that is less than 0.05, showing existences of a significant relationship. In addition, fraud policy exhibited a positive correlation with success of fraud risk management  $r = 0.639$ .

### **5.2.2 Periodic Assessment of Fraud Risk Exposure and Success of Fraud Risk Management**

The second objective was to establish the extent to which periodic assessment of fraud risk exposure contributes to the success of fraud risk management in state corporations. This involved researching whether the company's internal audit function performs a periodic fraud risk assessment of all areas of operation, whether possible fraud areas have been identified and documented, fraud risk register identifying all fraud risks in all areas of operation, occurrence of the fraud risks have been identified and documented, mitigating measures for the identified fraud risks have been put in place, fraud risks have been ranked according to their impact and internal audit function shares risk assessment report with the management for improvement purposes. The combined analysis had a mean of 3.13 standard deviation of 1.103 and a variance of 1.217. The analysis showed existence of statistically insignificant relationship between the periodic assessments of fraud risk exposure on success of fraud risk

management as the value of Pearson Chi –Square statistic ( $X^2$ ) from the sample data was 300.254 and the Asymptotic. Sig. (2-sided) for the Pearson Chi-Squared statistic which was 0.582 this being greater than 0.05, there is no relationship between the two stated variables. Further there was positive correlation between Success of Fraud Risk Management and Periodic Assessment of Fraud Risk Exposure  $r = 0.314$ ,  $p$  value  $< 0.05$ . This is supported by the empirical review where Ojha (2012), in her study indicated that while planning their annual audit plan, internal auditors should consider the assessment of fraud risk and review management’s fraud management capabilities periodically and they should regularly and closely communicate with those responsible for risk assessments in the organization and also others in key roles throughout the organization, to ensure timely fraud risk management. COSO, (2017) also indicates that fraud risk assessment addresses the risk of fraudulent financial reporting, fraudulent non-financial reporting, asset misappropriation, and illegal acts -including corruption. The findings of the study are also supported by Petrascu and Tieanu, (2014) who indicate in their study that the entity’s capability to prevent and detect fraud depends on a correct and complete assessment of fraud risks.

### **5.2.3 Fraud Prevention and Success of Fraud Risk Management**

The third objective of the study involved to establish the extent to which fraud prevention contributes to success of fraud risk management in state corporations in Kenya. This involved checking whether; the company has sensitized staff on most common fraud within the business functions and how to avoid them, automated controls that capture antifraud related activities, fraud risk management program has been shared across the organization, fraud prevention strategy in place, internal audit function continuously test the effectiveness of antifraud and prevention controls, company's internal audit function from time to time does ad-hoc testing to look for indicators of fraud and internal controls in place designed to help in prevention of fraud and misconduct. The combined analysis had a mean of 2.92 standard

deviation of 0.956 and a variance of 0.915. The value of Pearson Chi –Square statistic ( $X^2$ ) from the sample data was 299.796 the test statistics to use in making inference with a significance level,  $\alpha= 0.05$  or 5. The Asymptotic Sig. (2-sided) for the Pearson Chi-Squared statistic was 0.319 is more than 0.05, this showed there was no relationship between the stated variables.

The analysis of correlation showed there was a positive and significant relationship between Success of Fraud Risk Management and Fraud Prevention  $r = 0.287$   $p$  value  $< 0.05$ . According to the empirical review, Doody (2008) highlights that based on recent surveys; many organizations do not have a formal approach to fraud prevention. Kennedy (2012) asserts that when it comes to fraud, there are many preventative measures that can be taken, but it is nearly impossible to fully extinguish it she further states that if someone wants to commit fraud, they are most likely find a way to do it no matter what controls are in place and that is why preventing opportunities, through internal controls or otherwise, is the most important part of the fraud triangle.

#### **5.2.4 Fraud Detection and Success of Fraud Risk Management**

The fourth and last objective was to establish the extent to which fraud detection contributes to the success of fraud risk management in state corporations in Kenya. Aspects of fraud detection were based on the company having forensic investigators apart from internal audit function to help in fraud investigation, internal audit function has data analytics procedures for detecting fraud, documented fraud detection techniques in place, identification of fraud investigation protocols to follow when a fraud is detected, process of fraud investigation procedure, corrective actions in place in the event of fraud occurring and internal controls designed to detect fraud. The analysis of fraud detection had a combined mean of 2.930, standard deviation of 0.912 and variance of 0.832. Referring to the value of Pearson Chi – Square statistic ( $X^2$ ) from the sample data was 316.580 and the test statistics to use in making

inference with a significance level,  $\alpha = 0.05$  or 5. The Asymptotic Sig. (2-sided) for the Pearson Chi-Squared statistic was 0.005 that is less than 0.05; this showed existence of a relationship between. There was positive and significant relationship between Success of Fraud Risk Management and Fraud Detection  $r = 0.353$ ,  $p \text{ value} < 0.05$ . According to KPMG Forensic (2014), organizations have a better chance of detecting fraud and misconduct early when they have built a culture where firstly, employees believe they have a stake in the company or see that integrity is a key element of their organization and secondly, that they have the affirmative obligation to raise their hands and report improper conduct. They further state that it is important to understand that employees are more likely to raise concerns when they know where to turn for help, feel comfortable doing so without fear of retaliation and believe that management may be responsive to their concerns. This is also supported by Coram, Ferguson, and Moroney (2006) in their study where they concluded that, internal audit adds value through improving the control and monitoring environment within organization's to detect fraud.

### **5.3 Conclusions**

As per the regression analysis, Fraud policy independently contributes towards the success of fraud risk management in state corporations in Kenya yet as per variance inflation factor tests for multicollinearity the sum of the independent variables amounted to 10.113 indicating there was existence of multicollinearity among the variables. When these objectives are combined together as per the Analysis of variance test which had a p value of 0.002 they had a defined and positive significance contribution to the success of fraud risk management in state corporations. The study involved an in-depth analysis and outlined the existence of a correlation between the independent and dependent variables. The specific objectives had a defined and positive significance contribution to the success of fraud risk management in state corporations.

#### **5.4 Recommendations**

The analysis of the study topic and more so the specific objectives that involved fraud policy, periodic assessment of fraud risk exposure, fraud prevention and fraud detection in state corporations in Kenya are key elements of internal audit practices when it comes to managing the risk of fraud. The stated determinant variables had a positive and significance relationship to the response variable based on the analysis of correlation. Thus the study recommends that: State corporations should promote fraud policy as part of their key policies in terms of governance and they strengthen measures as a way of facilitating internal audit in the organizations to make successful fraud risk management; State corporations must analyze and assess periodic fraud risk exposure in the organization as a way of promoting internal audit that may positively impact on the institutions success on fraud risk management; State corporations to put in place appropriate measures of fraud prevention that may help effective and efficient internal audit that supports on the success fraud risk management and lastly that state corporations must assess all the internal and external environment to help in fraud detection and enable the organization administer and post a successful fraud risk management.

#### **5.5 Recommendations for Future Research**

The research study was based on analyzing the effect of internal audit practices in fraud risk management in state corporations in Kenya. Based on the specific objectives, the author did not fully exhaust on all of the internal audit practices and how they contribute to the success of fraud risk management in state corporations. There is need to conduct another study in line to the effect of internal audit practices in fraud risk management in Non -Governmental Organizations. Since the study was based on state corporations in Kenya the author suggests inclusion of various public ministries under which the state corporations are incorporated.

A study can also be done on challenges faced by internal auditors in fraud risk management.



The author also recommends a future study to be done on the effect of internal audit technology on organization's practices in fraud risk management.

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## **APPENDICES**

### **Appendix 1: Questionnaire**

#### **Introduction**

My name is Beatrice Awuor Obonyo. I am an MSC (Finance and Accounting) student at KCA University undertaking research on Effect of internal audit practices in fraud risk management in state corporations in Kenya. Please read each question and follow the instruction given. Kindly answer the question by ticking in the box provided where applicable. The data that will be collected will be treated with a very high degree of confidence and is meant for academic purposes only.

#### **Section I: General Information**

Please indicate your response by ticking [] in the correct bracket

1) Age Bracket

Below 25 years      [  ]

25 – 35 years      [  ]

36 and above      [  ]

2) Gender

Male      [  ]

Female      [  ]

3) Education Level

O- Level      [  ]

Diploma      [  ]

Undergraduate      [  ]



Post graduate [ ]

Others (Specify).....

4) Number of years within the organization?

Less than 5 [ ]      5-9 [ ]      10-15 [ ]      Over 15 [ ]

**EFFECT OF INTERNAL AUDIT PRACTICES ON FRAUD RISK MANAGEMENT  
IN STATE CORPORATIONS IN KENYA**

Indicate your degree of agreement or disagreement with the following statements on effect of internal audit practices in fraud risk management in state corporations in Kenya.

Please indicate in the table with a tick [√] with a scale of

**1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree**

**Section II: Success of Fraud Risk Management**

Statement		1	2	3	4	5
1.	The company's top management have stated clearly in the fraud policy the organizations values and ethics and expectation from employees in regards to fraud and misconduct					
2.	The company has provided a safe mechanism for reporting fraud and misconduct that employees can use without fear of retaliation					
3.	The company's top management has set the tone at the top in regards to fraud risk management					
4.	The company support zero tolerance to fraud and corruption at all levels in the organization					
5.	The company has a culture of rewarding employee integrity					
6.	The reputation of the company in terms of fraud and corruption is commendable					
7.	The company deals with fraud perpetrators by ensuring they are charged for the offense committed and that fraud is properly dealt with					

**Section III: Fraud Policy**

<b>Statement</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.	The company has an approved fraud policy that has been shared to all employees					
2.	The company has a code of ethics that is signed by all employees in regards to fraud and corruption					
3.	The company's fraud policy has defined roles and responsibilities of all staff in all levels in management of fraud risk					
4.	The company's internal audit function performs a continuous monitoring of possible fraudulent activities					
5.	The company has a variety of reporting channels of fraudulent activities to which staff have been sensitized on					
6.	The company's internal audit function maintains a record of fraudulent activities prevented					
7.	The company's internal audit function maintains a record of fraudulent cases that have been reported					

**SECTION IV: Periodic Assessment of Fraud Risk Exposure**

<b>Statement</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.	All the possible fraud areas have been identified and documented					
2.	The fraud risks have been ranked according to their impact					
3.	The likelihood of occurrence of the fraud risks have been identified and documented					
4.	Mitigating measures for the identified fraud risks have been put in place					
5.	The company has a fraud risk register identifying all fraud risks in all areas of operation					
6.	The company's internal audit function performs a periodic fraud risk assessment of all areas of operation					
7.	The internal audit function shares risks assessment report with the management for improvement purposes					

**SECTION V: Fraud Prevention**

<b>Statement</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.	The company has a fraud prevention strategy in place					
2.	The company has internal controls in place designed to help in prevention of fraud and misconduct					
3.	The company's internal audit function continuously test the effectiveness of antifraud and prevention controls					
4.	The company has automated controls that capture antifraud related activities					
5.	The company has sensitized staff on most common fraud within the business functions and how to avoid them					
6.	The fraud risk management program has been shared across the organization					
7.	The company's internal audit function from time to time does ad-hoc testing to look for indicators of fraud					

**SECTION VI: Fraud Detection**

<b>Statement</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.	The company has documented fraud detections techniques in place					
2.	The company has internal controls designed to detect fraud					
3.	Internal audit function has data analytics procedures for detecting fraud					
4.	The company has identified fraud investigation protocols to follow when a fraud is detected					
5.	The company has forensic investigators apart from internal audit function to help in fraud investigation					
6.	There is a defined process of fraud investigation procedure					
7.	The company has corrective actions in place in the event of a fraud occurring					

THANK YOU FOR TAKING YOUR TIME TO FILL THE QUESTIONNAIRE

## **Appendix 2: List of Kenyan Parastatals (State Corporations)**

### **1) Ministry of Industry Trade and Cooperatives**

1. African Trade Insurance Agency
2. Anti-Counterfeiting Agency (ACA)
3. Brand Kenya Board
4. Business Premises Rent Tribunal
5. East African Portland Cement Company (EAPCC)
6. Export Processing Zones Authority (EPZA)
7. Export Promotion Council
8. Industrial Development Bank
9. Kenya Accreditation Service (KENAS)
10. Kenya Bureau of Standards (KEBS)
11. Kenya Industrial Estates (KIE)
12. Kenya Industrial Property Institute (KIPI)
13. Kenya Industrial Research and Development Institute (KIRDI)
14. Kenya Institute of Business Training
15. Kenya Investment Authority (KIA)
16. Kenya National Trading Corporation
17. Kenya Wine Agencies (KWAL)
18. Micro and Small Enterprises Authority (MSEA)
19. New Kenya Co-operative Creameries (New KCC)
20. Numerical Machining Complex (NMC)
21. Sacco Societies Regulatory Authority (SASRA)
22. Special Economic Zones Authority

### **2) Ministry of East African Affairs , Commerce and Tourism**

23. Kenya Tourism Board (KTB)
24. Kenya Tourist Development Corporation (KTDC)
25. Kenyatta International Convention Centre (KICC)
26. Bomas of Kenya
27. Kenya Safari Lodges and Hotels (KSLH)
28. Tourism Fund
29. Tourism Regulatory Authority
30. Kenya Utalii College

### **3) Ministry of Health**

31. Kenya Medical Research Institute (KEMRI)
32. Kenya Medical Supplies Agency (KEMSA)
33. National Hospital Insurance Fund (NHIF)

### **4) The National Treasury**

34. Kenya Accountants and Secretaries National Examinations Board (KASNEB)
35. Privatization Commission
36. Insurance Regulatory Authority
37. Public Procurement Oversight Authority
38. State Corporations Appeals Tribunal
39. Kenya National Assurance Company (2001)
40. Capital Market Authority
41. Deposit Protection Fund Board
42. National Bank of Kenya
43. Kenya Post Office Savings Bank
44. Consolidated Bank of Kenya
45. Retirements Benefit Authority

46. Kenya Reinsurance Corporation
47. Kenya Revenue Authority
48. Kenya Trade Network Agency
49. Competition Authority of Kenya
- 5) Ministry of Sports Culture and the Arts**
  50. Sports Kenya
  51. National Sports Academy
  52. National Sports Fund
  53. Kenya Cultural Centre
  54. National Museums of Kenya
  55. Kenya Film Commission
  56. Kenya Film Classification Board
  57. Kenya National Library Service
- 6) Ministry of Transport and Infrastructure**
  58. Kenya Railways Corporation (KRC)
  59. Kenya Railways Training School
  60. Kenya Ports Authority (KPA)
  61. Kenya Airports Authority (KAA)
  62. East African School of Aviation (KCAA)
  63. Kenya Civil Aviation Authority (KCAA)
  64. Transport Licensing Board
  65. Transport Licensing Appeals Board
  66. National Transport Safety Authority (NTSA)
  67. Kenya Ferry Services
  68. LAPSSET Authority
  69. Kenya Maritime Authority
  70. Kenya Institute of Technology
  71. Kenya Roads Board
  72. Kenya National Highways Authority
  73. Kenya Urban Roads Authority
  74. Kenya Rural Roads Authority
  75. Kenya Institute of Highways and Building Technology
  76. Engineers Registration Board of Kenya
  77. National Construction Authority
  78. National Housing Corporation
  79. Kenya Building Research Center
  80. Rent Restriction Tribunal
  81. Bandari College
  82. The Kenya National Shipping Line
  83. The Merchant Shipping Act
- 7) Ministry of Education**
  84. National Commission for Science, Technology and Innovation (NACOSTI)
  85. Higher Education Loans Board (HELB)
  86. Commission for University Education (CUE)
  87. Kenya Institute of Curriculum Development (KICD)
  88. Kenya Institute of Special Education (KISE)
  89. Teachers Service Commission (TSC)
  90. Kenya National Examinations Council (KNEC)
  91. Jomo Kenyatta Foundation (JKF)
  92. Technical Vocational Education and Training Authority (TVET)
- 8) Ministry of Information Communications and Technology**

- 93. Communication Authority of Kenya (CAK)
- 94. Kenya Broadcasting Corporation
- 95. Postal Corporation of Kenya
- 96. Konza Technopolis Development Authority
- 97. Kenya ICT Authority
- 98. Kenya Yearbook Editorial Board (KYEB)
- 99. Media Council of Kenya
- 100. Kenya Film Classification Board
- 101. Kenya Institute of Mass Communication
- 102. National Communications Secretariat
- 103. Communications Appeal Tribunal
- 9) Ministry of East African Community, Labor and Social Protection**
- 104. National Industrial Training Authority
- 105. National Social Security Fund
- 106. National Council for Persons with Disabilities
- 107. Social Protection Secretariat
- 108. Productivity Centre of Kenya
- 109. National Council for Children Services
- 10) Ministry of Environment and Natural Resources**
- 110. National Environment Management Authority (NEMA)
- 111. Kenya Water Towers Agency (KwTA)
- 112. Kenya Wildlife Service (KWS)
- 113. Kenya Forest Service (KFS)
- 114. Kenya Forest Research Institute (KEFRI)
- 11) Ministry of Interior and Coordination of National Government**
- 115. The National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA)
- 116. Directorate of Immigration & Registration of Persons
- 117. National Government Administration and Field Services
- 118. National Police Service
- 119. Peace Building & Conflict management
- 120. Small Arms Control & Management
- 121. National Disaster Operations Centre
- 122. Government Printer
- 123. National Cohesion & National Values
- 124. Kenya School of Adventure & Leadership
- 125. Probation & Aftercare Services
- 126. Betting Control & Licensing Board
- 127. General Administration Services
- 128. Kenya Prisons Department
- 12) Ministry of Lands, Housing and Urban Development**
- 129. National Housing Corporation
- 130. National Construction Authority
- 131. Kenya Building Research Centre
- 132. Settlement Fund Trustees
- 13) Ministry of Energy and Petroleum**
- 133. Energy Regulatory Commission
- 134. Rural Electrification Authority
- 135. Kenya Pipeline Company
- 136. Geothermal Development Company
- 137. Kenya Petroleum Refineries

138. Kenya Power
139. Kenya Electricity Generating Company
140. Kenya Electricity Transmission Company
141. National Oil
142. Kenya Nuclear Electricity Board
143. Renewable Energy Portal
- 14) Ministry of Defense**
  144. Kenya Ordnance Factories Corporation (KOFC)
- 15) Ministry of Agriculture , Livestock and Fisheries**
  145. Kenya Seed Company
  146. Nyayo Tea Zones Development Corporation
  147. Muhoroni Sugar Company
  148. Nzoia Sugar Company
  149. Chemelil Sugar Company
  150. Kenya Animal Genetic Resources Centre (KAGRC)
  151. Kenya Meat Commission
  152. Kenya Veterinary Vaccines Production Institute (KEVEVAPI)
  153. National Cereals and Produce Board
  154. Kenya Marine and Fisheries Research Institute
  155. National Drought Management
  156. National Irrigation Board
  157. Agricultural Development Corporation
  158. National Water Conservation and Pipeline Corporation

#### **Source of information**

Individual ministries websites

The Kenya Gazette, Nairobi 27<sup>th</sup> April 2015. Retrieved from [http://mygov.go.ke/wp-content/uploads/2015/04on\\_11/5/2017](http://mygov.go.ke/wp-content/uploads/2015/04on_11/5/2017)

## Appendix 3: Introduction Letter from KCA University



Thika Road, Ruareka  
P.O. Box 56808-00200 Nairobi Kenya  
Pilot Line: +254 20 8070408/9

Tel: +254 20 3537842  
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Email: [kca@kca.ac.ke](mailto:kca@kca.ac.ke)  
Website: [www.kca.ac.ke](http://www.kca.ac.ke)

KCAU/SGS/MSC/June.17/17

June 21, 2017

To whom it may concern,

Dear Sir/Madam,

**RE: BEATRICE AWUOR OBONYO REG NO. 12/02760**

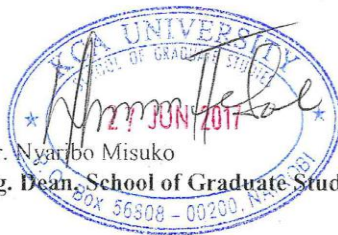
It is my distinct pleasure to introduce to you Ms. Beatrice Obonyo who is a student in our institution pursuing a Master of Science in Commerce at the School of Business and Public Management.

Beatrice is conducting a research on a topic titled: "*Effect of Internal Audit Principles in Fraud Risk Management in Siae Corporations in Kenya*" which is part of the requirements of the program she is pursuing. The research as well as the data procured thereof shall be used for academic purposes only.

Any assistance accorded to her is highly appreciated.

In case of farther inquiry, do not hesitate to contact the undersigned.

Yours faithfully,



Dr. Nyarbo Misuko  
Ag. Dean, School of Graduate Studies & Research