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Influence of fraud prevention and detection techniques on fraud and moderating effect of firm revenue in Kenyan State Corporations.

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INFLUENCE OF FRAUD PREVENTION AND DETECTION TECHNIQUES ON FRAUD AND MODERATING EFFECT OF FIRM REVENUE IN KENYAN STATE CORPORATIONS

BY

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DECLARATION

I declare that this research Thesis has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the research proposal contains no material previously published or written by another person except where due reference was made in the thesis itself.

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APPROVAL

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DEFINITION OF KEY TERMS

Fraud	It denotes unethical and unlawful actions carried out deliberately for personal gain that directly or indirectly injures other individuals (ACFE, 2006). In this study, fraud represented corruption, asset misappropriation and financial statement fraud.
Fraud Prevention	Refers to anti-fraud techniques put in place to discourage fraud from happening in the first place (Othman et al., 2015).
Fraud Detection	Refers to the anti-fraud techniques that reveals an ongoing fraud or a fraud incident that has already happened (Othman et al., 2015).

ABSTRACT

The main goal of this research study was to establish the influence of fraud prevention and detection techniques on fraud and moderating effect of firm revenue in Kenyan state corporations. The main purpose of the study was addressed by three specific objectives. The first specific objective of this study was to establish the influence of fraud prevention techniques on fraud in Kenyan state corporations. The second specific objective of the study was to establish the influence of fraud detection techniques on fraud in Kenyan state corporations. Finally, the third objective was to establish the moderating effect of firm revenue on the influence of fraud prevention and detection techniques on fraud in Kenyan state corporations. Questionnaires were utilized to retrieve primary information that informed the independent variables and dependent variable. Moreover, secondary data was retrieved from the Auditor General Audited Annual Reports of the State Corporations, which also informed the dependent variable. Multiple Linear and Logistic Regression analysis were employed to establish the influence of fraud prevention and detection techniques on fraud in Kenyan State Corporations and if the influence was controlled by firm size. Multiple Linear Regression analysis revealed that fraud prevention and detection techniques significantly mitigates fraud in Kenyan State Corporations. Additionally, the results ascertained that firm revenue significantly controls the influence of fraud prevention and detection techniques on the mitigation of fraud in Kenyan State Corporations. The findings of the logistic regression analysis was not used for discussion since the model summary posted insignificant results. The implication of this study is that it provides a framework of preventive and detective techniques that are effective in curbing fraud, which has not been stated in Mwongozo code of conduct. Thus, it can be incorporated in Mwongozo code of conduct or a separate policy guideline should be developed. The study chips in to the present research knowledge of the relationship between preventive and detective techniques by broadening the scope to incorporate how firm revenue plays a fundamental role is mediating the relationship. The limitation of the study was that although the respondents who were the accounting professions were deemed to have the needed information on anti-fraud controls and fraud aspects in State corporations, the study could not wholly confirm that it obtained credible information on the effectiveness of anti-fraud controls and the degree of fraud occurrences.

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

In 2018 based on an international context, government organizations recorded 16% of fraud cases coming third after the public companies, which experienced 29% of fraud cases and the private firms that experienced 42% of fraud cases (ACFE, 2018). In terms of median fraud loss (loss per organization) experienced, public entities experienced a loss of $ 118,000 in 2018, coming second after private organizations which experienced a loss of $164,000 (ACFE, 2018). Besides that, in public sector, the most common fraud schemes were corruption that record 50% of the fraud cases, financial statement fraud that recorded 22% of the fraud cases and asset misappropriation fraud that recorded 15% of the fraud cases globally, in 2018 (ACFE, 2018). Numerous fraud scandals have occurred internationally in the public sector in recent times. For instance, In USA this year, Mr. Duane Edward Crawson, a former director of the Farm Service Agency and 28 other people were charged for fraudulently diverting $400,000 meant for federal benefits through false claims (Robinson, 2019). In Nigeria in the year 2015, $700 million was allegedly discovered in the residence of Nigeria's Minister of Petroleum, which was suspected to have been embezzled from the Nigerian oil subsidy (Rabiu & Mansor, 2018).

In Kenya, the fraud menace in State Corporations has affected the sector's performance and an estimated amount of 1.4 billion Kenyan shillings has been lost due to fraudulent activities (Masengeli, Kiragu, & Kamau, 2018). A State Corporation in line with this research investigation meant a corporation established by the Act of Parliament/Legislation in a specific Ministry as elaborated in Appendix 5. In April 2014, the former chief executive officer of Geothermal Development Corporation was investigated for allegations of corruption and mismanagement of the firms fund during the procurement of three drilling rigs (The Star, 2015). In 2018, the National Youth Service (NYS) lost Kenya shillings 10.5 billion in a fraud scheme involving more than 48 employees in the management position in NYS, its suppliers and the National Treasury (Obura, 2018).

In Mombasa County, the State Corporations in that area have been on the lime light due to numerous cases of financial fraud owing to the fact that it is a gateway to East Africa with cases ranging from financial statement fraud, tax evasion, bribery and misappropriation of funds (EACC, 2016). Masengeli, Kiragu and Kamau (2018) revealed that Kenyan State Corporations in the context of Mombasa County have reported significant cases of overstatement of expenditure, improper disclosure of financial information and manipulation of financial records. The National Hospital Insurance Fund (NHIF) was caught in a fraud case involving the inflation of the cost of constructing its multi-story car-parking complex by 337% (Kenyan Report, 2018).

On top of that, the Kenya Medical Supplies Authority failed to provide the appropriate legal documents justifying the ownership of several pieces of land it acquired estimated at Kshs. 180 million (Kenyan Report, 2018). Furthermore, Geothermal Development Corporation (GDC) which had sold steam amounting to Kshs. 3.1 billion from 59 wells to KenGen only reported yet the expenses involved that were accounted in the financial report did not represent the whole 59 wells but only 26 (Kenyan Report, 2018). Currently, the Office of the Director of Public Prosecution and the Office of the Directorate of Criminal Investigations have always managed to speed up investigations and prosecute the suspects involved in financial crimes (Ombati & Obala, 2019; Omondi, 2019). Though the problem is that these actions come about after a fraud loss, hence a need to curb fraud before the financial loss is realized (Ombati & Obala, 2019; Omondi, 2019).

Poor internal control systems attributed to traditional fraud detection and prevention techniques have been established as factors that leads to fraud incidents (Kamaliah et al., 2018). Many organizations in both the public and private sectors are employing new different techniques to mitigate the fraud menace since the traditional techniques have proved to be ineffective (Wells, 2004). In 1997, the AAA advocated for research studies that will come up with policy frameworks, which will help auditors and fraud investigators in detecting and preventing potential fraud (Bierstaker et al., 2006). The employment of the researched fraud risk management policies would make it hard for fraudsters to perpetuate fraud (Ijeoma & Aronu, 2013).

1.1.1 The Fraud Risk Management Framework

Fraud risk management involves the diagnosis of vulnerability to fraud that comprises of the assessment of the current situation of the firm's antifraud techniques concerning how effective they are in managing fraud (Deloitte, 2014). It also involves the evaluation of detection of gaps in the anti-fraud controls follows in and recommendations of how fraud will be best mitigated (Deloitte, 2014). The implementations of the recommendations, which forms part of the firm's anti-fraud policy. Consequently, leads to continuous and periodic monitoring and consequently the development of a fraud response plan to answer to instances of suspected or proven fraudulent actions and lastly investigating the purported fraud cases (Deloitte, 2014). Hence in summary fraud risk management involves prevention, detection and response (investigation and corrective action) which are the three primary elements that constitutes its body (Ernst & Young, 2015).

Based on this research examination the study sought to determine if preventive and detective anti-fraud measures significantly mitigates fraud in Kenyan state corporations. The framework of the anti-fraud controls which this research investigation relied on was borrowed from a number of studies that included ACFE (2018), Bierstaker et al. (2006), Waigumo (2012), Kamaliah et al. (2018), PwC (2018) Ernst & Young (2018), PwC (2018) and Othman et al. (2015). This study relied on the framework of the fraud prevention and detection measures for each study aforementioned since they were distinct from each other and the aim was to exhaust all the preventive and detective measures that are used by any organization be it in the private, public, or non-for-profit sector in this world.

1.1.2 Kenyan Statutory Guidelines for Combating Fraud

There is no clear fraud investigative and deterrence protocols in Kenyan State corporations. However, several laws and policies such as Mwongozo Code of Conduct (2015), Bribery Act (2016) and the Proceeds of Crime and Anti-Money Laundery Amendment Act (2009) have been developed to address fraud in the public sector. The Mwongozo Code of conduct was developed to address governance challenges in state corporations such as corruption through a professional and autonomous board (Mwongozo, 2015). However, it does not clearly talk about the anti-fraud techniques and controls. Which State Corporations can use to manage the fraud problem experienced by these public entities. On the other hand, the Bribery Act (2016) clearly

establishes acts that amount to bribery offences and penalties that are leveled against those engaging in bribery (Kenya Gazette Supplement, 2016). However, it does not provide guidelines for detecting and preventing acts of bribery.

Besides that, the Proceeds of Crime and Anti-Money Laundering Amendment Act (2009) provides laws that discourages, identifies, traces, freezes, seizes and confiscate money earned fraudulently or through acts of crime (Kenya Law Report, 2012). Nevertheless, it does not provide regulations touching on fraud prevention and detection controls that can prevent someone from actually perpetuating fraud in the first place. Hence, a need for a policy framework of fraud detection and prevention techniques that can be used by State corporations to mitigate fraud that it is ailing from.

1.1.3 Influence of Fraud Prevention Techniques on Prevalence of Fraud

Presently, there have been limited studies (Kamaliah et al., 2018; Waigumo, 2012) conducted to establish the influence of fraud prevention techniques on fraud. Kamaliah et al. (2018) found that there was a significant negative association between the fraud deterrence program and the level of fraud prevalence in public entities operating in Malaysia. This meant that fraud prevention techniques significantly reduce fraud incidences. Contrariwise, Waigumo (2012) revealed that fraud prevention techniques had an insignificant negative relationship with fraud in Kenyan banking sector. Though the study construed the insignificant negative association as that the introduction of a new type of fraud renders the present fraud prevention techniques ineffective until a new anti-fraud technique is employed to address that particular fraud issue.

Moreover, most fraud studies (Akomea-Frimong, Andoh & Ofosu-Hene, 2016; AKI, 2013; Bierstaker et al., 2006; Zamzami, Nusa & Timur, 2016; Othman et al. 2015; Omar & Abu Bakar, 2012) have been anchored on the perceptions of the effectiveness of fraud prevention techniques. Perception entails the attitudes or opinions of people about a particular phenomenon based on their knowledge and experience (Cambridge Dictionary, 2019). Bierstaker et al. (2006) carried out a research examination on private firms in America and observed that code of conduct was regarded to be very effective in managing fraudulent actions. The findings concurred with Zamzami, Nusa & Timur (2016) who conducted a similar study in tertiary institutions operating in Indonesia. Similarly, Othman et al. (2015) also observed the same findings in the public institutions operating in Malaysia. On the other hand, Omar and Abu Bakar (2012) revealed that

code of conduct was perceived to be ineffective in government-linked firms in the Malaysian public sector. Moreover, Akomea-Frimong, Andoh & Ofosu-Hene (2016) and (AKI, 2013) established that fraud detection and prevention training programs have been perceived to be very effective in mitigating fraud in the Ghanaian and Kenyan Insurance sectors respectively.

Conversely, Omar and Abu Bakar (2012) revealed that anti-fraud policy and training sessions were perceived to be ineffective in preventing fraud in government-linked firms in the Malaysian public sector. Presently there has been limited research based on reviewed literature (Waigumo, 2012; Kamaliah et al., 2018) conducted to establish the influence of fraud prevention techniques on mitigation of fraud incidences in Kenyan state corporations, Nairobi County. Moreover, most of the studies (Akomea-Frimong, Andoh & Ofosu-Hene, 2016; AKI, 2013; Bierstaker et al., 2006; Zamzami, Nusa & Timur, 2016; Othman et al. 2015; Omar & Abu Bakar, 2012) have been based on perceptions testing the effectiveness of fraud prevention techniques without really showing its influence on curbing fraud. None of these studies has tried to assess the relationship between the fraud prevention techniques and fraud incidences. The study sought to bridge the knowledge gap. Consequently, the study sought to establish the influence of fraud prevention techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County.

1.1.4 Influence of Fraud Detection Techniques on Prevalence of Fraud

Presently, there have been limited studies (Waigumo, 2012) conducted to establish the influence of fraud detection techniques on fraud. The study conducted by Waigumo (2012) revealed that fraud detection techniques had an insignificant effect on fraud in Kenyan commercial banks. Though insignificant, it had a negative relationship with fraud occurring in banks. Besides that, most of the research investigations have been based on perceptions testing the effectiveness of fraud detection techniques (Agathee & Ramen, 2017; Othman et al., 2015; Aki, 2013; Bierstaker et al., 2006 ; Efiong, Inyang & Joshua, 2016; Zamzami, Nusa & Timur, 2016; Sengur, 2012; Tunji et al., 2016; Rahman, 2014). Generally, the aforementioned studies established that forensic accountants, discovery sampling, fraud hotlines, digital analysis, continuous auditing and data mining were the most effective techniques in detecting fraud both in the private and public sectors. None of these studies has tried to assess the relationship between the fraud detection techniques and fraud incidences. Additionally, the study conducted by Waigumo (2012) was limited to Kenyan commercial banks. The study sought to bridge the knowledge gap.

Consequently, the study sought to establish the influence of fraud detection techniques on prevalence of fraud in Kenyan state corporations, Nairobi County.

1.1.5 The Moderating Effect of Firm Revenue on the Influence of Fraud Prevention and Detection Techniques on the Prevalence of Fraud in Kenyan State Corporations, Nairobi County

Bierstaker et al. (2006) posited and established that big organizations in terms of their revenue size have enough financial resources to invest in the procurement and usage of the effective anti-fraud techniques and IT anti-fraud technology, which are very costly when compared to small firms. The same findings were established by ACFE (2018) in the global fraud survey that they conducted in 2018. Laufer (2011) posited that small firms characterized by low annual revenues use fewer effective anti-fraud techniques and extensively rely on traditional techniques when compared to large firms because they do not have enough finances that can be capitalized on the expensive anti-fraud measures that are very effective. Bierstaker et al. (2006) posited that firms should invest in the most effective anti-fraud techniques even if they are expensive since when looking at the cost-benefit analysis, the deficiency in the utilization of the anti-fraud measures can result to huge fraud losses that can bring down the organization. There was limited research to shows if firm revenue significantly or insignificantly moderates the relationship of the influence of fraud prevention and detection techniques on the prevalence of fraud in Kenyan State Corporations. Thus, this study sought to bridge the research gap.

1.2 Problem Statement

Ernst & Young (2015) revealed that bribery/corruption practices happen widely across all organizations in Kenya. Moreover, people offer gifts and cash payments to win businesses for survival of their organizations and the firms often report cooked financial figures in order to show that they are performing well (Ernst & Young, 2015). The Ethics and Anti-Corruption Commission (EACC) established that corruption increased by 13% in 2016 compared to 2015 (EACC, 2016). Embezzlement of public funds, bribery, theft and conflict of interest were rated as the most common forms of fraudulent acts perpetuated in Kenya (EACC, 2016). Registration and licensing services by state corporations have been seriously affected by bribery, which has consequently made the cost of starting businesses a costly affair (GAN, 2018). Employees in Kenyan State Corporations have been involved in misappropriating the firms' assets,

manipulation of financial reports and being involved in bribery cases (Kenyan Report, 2018; Obura, 2018; Masengeli, Kiragu & Kamau, 2018). This is despite the fact that most of the state corporations have adopted the Mwongozo Code of governance for state corporations (Auditor General, 2016). The possible reasons for continued fraudulent incidences in state corporations can be attributed to poor governance, lack of moral good will, greed and inadequate implementation of fraud prevention and detection techniques.

Currently there has been limited research based on reviewed literature (Waigumo, 2012; Kamaliah et al., 2018) conducted in Kenya to establish the influence of fraud detection and prevention techniques on mitigation of fraud incidences in Kenyan state corporations. This is because Waigumo (2012) was focused on the banking sector and fraud was measured in terms of banking fraud while Kamaliah et al. (2018) only focused on one fraud prevention technique in the Malaysian public sector. Moreover, most of the studies (Othman et al., 2015; Agathee & Ramen, 2017; Bierstaker et al., 2006; Rahman, 2014; Zamzami, Nusa & Timur, 2016; Efiong, Inyang & Joshua, 2016; Sengur, 2012; Tunji et al., 2016; Omar & Abu-Bakar, 2012) have been based on perceptions testing the effectiveness of anti-fraud measures without really showing its influence on curbing fraud. This is because the studies did not really show how effective the techniques were by failing to correlate them with the fraud occurrence experienced by the assessed organizations in order to show if they significantly or insignificantly reduce the level of fraud cases. Thus, the study sought to bridge the knowledge gap. Consequenty, the study sought to establish the influence of fraud prevention and detection techniques on the prevalence of fraud in Kenyan state corporations.

Firm revenue is significant concerning investing in the most effective anti-fraud measures that can contribute in significantly reduce fraud prevalence (ACFE, 2018; Bierstaker et al., 2006). Thus, it was important to establish if firm revenue influences the usage of the most effective anti-fraud techniques in curbing fraud in Kenyan State Corporations. There was limited research (ACFE, 2018; Bierstaker et al., 2006; Agathee & Ramen, 2017; Laufer, 2011) to show if firm revenue significantly or insignificantly moderates the relationship of the influence of fraud prevention and detection techniques on the prevalence of fraud in Kenyan State Corporations. Consequently, this study sought to bridge the knowledge void.

1.3 General Objective

To establish the influence of fraud prevention and detection techniques on fraud and moderating effect of firm revenue in Kenyan state corporations.

1.3.1 Specific Objectives

i. To establish the influence of fraud prevention techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County.
ii. To establish the influence of fraud detection techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County.
iii. The moderating effect of firm revenue on the influence of fraud prevention and detection techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County.

1.4 Research Questions

i. What is the influence of fraud prevention techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County?
ii. What is the influence of fraud detection techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County?
iii. What is the moderating effect of firm revenue on the influence of fraud prevention and detection techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County?

1.5 Significance of the Study

The research outcomes of this study and its recommendations will be beneficial to the management of State Corporations, the policy makers/the government and the scholars/future researcher as explained in the subsections below;

1.5.1 Policy Makers and the Government

The recommendations of this study based on its findings will assist the government and the policy formulators to generate laws and regulations to which State corporations will be subjected to adhere to concerning incorporating the most effective fraud prevention and detection techniques that can precisely curb fraud in State corporations. Owing to the fact that there is still

a deficiency in laws concerning fraud risk management practices that should be employed by the State corporations to address the fraud issue.

1.5.2 The Management of State Corporations

This study will be beneficial to the management of State corporations since it will alert them on the present state of affairs of their fraud risk management strategies this is because currently it is not clear if the existing ones significantly mitigate fraud in State corporations. Hence, the findings of this study will provide them with sufficient information that will ascertain the effectiveness of the fraud prevention and detection techniques that they have in their existing fraud risk management programs. This means that the findings of the study will help the management to establish if the anti-fraud techniques that they have currently employed are really effective and significant in curbing fraud. If the management establishes that the anti-fraud techniques that they have currently employed are not effective in curbing fraud then appropriate managerial decisions will be made concerning their present fraud risk management strategies.

Furthermore, it would assist the management to reformulate their fraud risk management systems if they realize that the anti-fraud techniques they are currently using are not effective enough in curbing fraud in their respective firms in the public State corporations' sector. The findings of this research study will guide the management to pick out the most perceived fraud prevention and detection techniques that significantly influences mitigation of fraud. This would be incorporated in new fraud risk management systems in order to curb fraud from happening and consequently reduce fraud losses, which are damaging the financial sustainability and reputation of State corporations.

1.5.3 Scholars and Future Researchers

This study will be beneficial to future researchers. Researchers from other countries who would want to make a research inquiry about the influence of fraud prevention and detection techniques on mitigation of fraud either in the non-profit organizations, public or private sector. Future studies can use this research study to build on their literature and check up on the research gap that has to be bridged based in the context of their geographical setting and the fraud problems being faced.

1.6 Scope of the Study

The scope of the study was focused on establishing the influence of fraud prevention and detection techniques on fraud based on the views of the senior management limited to the financial directors, head of internal audit, the accountants and internal auditors in Kenyan State corporations operating in Nairobi County. The study focused on the views of the select senior management and the employees because they have sufficient knowledge on the organization's financial control systems that mitigates or are vulnerable to fraud. Moreover, the study focused on establishing the current state of affairs of fraud prevention and detection techniques. Consequently, primary data was acquired at one point in time. Finally, the scope of the study was limited to all State corporations situated in Nairobi City County. This is because virtually all the State corporations were located in the County owing to the fact that it is the capital city of Kenya. Concerning this study, a State Corporation denoted government owned firms established by the Act of Parliament/legislation in a specific ministry as elaborated in Appendix 5.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presented the fraud theories that were applicable to this study under the theoretical review. It also presented the empirical review that discussed about the findings of previous studies that were linked to the objectives of this. Moreover, it presented the summary of the literature review and the research gaps that are needed to be addressed. Finally, based on the reviewed literature the chapter developed the conceptual framework showing the relationships between the variables and how they were operationalized.

2.2 Theoretical Review

There are several theories developed that illustrates the reasons why people commit fraud and the stages of fraud risk management. The fraud theories identified by this study that have been discussed in details in the succeeding sections below included the fraud triangle theory and the fraud management lifecycle theory. The fraud triangle theory entails the three primary factors that leads to fraud occurrence namely; pressure, opportunity and rationalization. On the other hand, the fraud management lifecycle theory entails eight stages namely; fraud deterrence, fraud prevention, fraud detection, fraud mitigation, fraud analysis, fraud policy, fraud investigation and fraud prosecution that controls fraud risk and depict if an organization has successfully or failed to effectively manage fraud. The theoretical models were directly relevant to this study since their aspects are directly linked to the objectives of this study as explained in subsections 2.2.1 and 2.2.2.

2.2.1 Fraud Triangle Theory

The origins of the fraud triangle theory can be traced back to Dr. Donald Cressey an American Criminologist (Cressy, 1953). He formulated the theory after conducting a survey on 250 criminals to establish the primary reasons why people commit fraud (Abdullahi & Mansor, 2018). Cressey (1953) revealed that there must be 3 vital rudiments for a person to commit fraud namely; pressure, opportunity and rationalization which constitutes the fraud triangle (Abdullahi & Mansor, 2018; ACFE, 2019). It is based on the hypothesis that trusted individuals transforms

to trust violators to solve a financial problem by using their position of financial trust and are able to perpetuate the fraudulent act based on chances that are existing and justifying the act since they are the users of the trusted financial resources of the firm (ACFE, 2019). The theoretical model starts with pressure that can be characterized by personal greed, need to pay debt, desire to retain or gain respect or pressure to retain job (Abdullahi, Mansor & Nuhu, 2015; Murphy & Dacin, 2011). Pressure is then followed by opportunity which entails a situation whereby a person can commit fraud without being caught (Murphy & Dacin, 2011). This happens when there is lack of controls, utilization of controls that are not effective or the capability of senior managers to discount the established controls (Murphy & Dacin, 2011). Finally, after opportunity comes in rationalization whereby the potential fraudster internally justifies the fraud action to seem right based on his or her own personal code of ethics (Kabue & Aduda, 2017).

For instance, cases of rationalization can be, "everyone does it", "It was just a portion of money therefore the firm won't loss much" among others. A better comprehension of how rationalization, opportunities and pressure can amount to fraudulent actions can assist firms to precisely identify fraud risk areas and accurately address those risks (Kabue & Aduda, 2017).

Fraud risk cannot be completely eradicated by weakening of one of the three elements that leads to fraud can reduce the whole fraud risk (KPMG Forensic, 2016). Though the motive/pressure can be difficult to be controled, firms can reduce opportunites that can motivate for fraud to be perpetrated (KPMG Forensic, 2016). Thus to mitigate opportunity firms need to to ensure the existence of preventive and detective control mechanisms that can reduce fraud risks (KPMG Forensic, 2016). Considering the fact that opportunity must exist for fraud to be actually perpetrated and mitigating opportunities for commiting fraud can make fraud actualization hard even with the presence of pressure and rationalization.

A global fraud survey conducted by PwC (2018) established that opportunity was listed as the main contibutor of fraud incidences perpetrated by internal actors followed by pressure and rationalization. The findings of the study concurred with KPMG (2016) which also established weak internal controls which results to opportunity to conduct unethical conduct is the primary catalyst of fraud in an international context. The efficaciousness of the preventive and detective measures determines the level of opportunity for a person to perpetuate fraud (Kamaliah et al.,

2018).This is because fraud can be confidently perpetrated when the techniques put in place are not adequate to detect or prevent the fraud or it is because they are not often used to curb fraud. Hence creating an opportunity to commit fraud.

Most studies (Rahman, 2014; Bierstaker et al., 2006; Othman et al., 2015; Omar & Abu-Bakar, 2012; Efiong, Inyang & Joshua, 2016) actually observed that detective controls such as fraud hotlines, discovery sampling, whistle blowing policy, organizational use of forensic accountants were rarely applied in unraveling fraud despite the fact they were perceived to be very effective. Hence this means that the absence of these techniques is the sole reason for why people perpetuate fraud since the organizations are still relying on weak traditional anti-fraud techniques to combat fraud. Hence these studies have managed to upheld the proposition of the theoretical model that weak controls provides loopholes for people to carry out fraud activities without being trailed down.

The theoretical model with specific reference to opportunity was directly linked to this study. Opportunity to perpetuate fraud comes in when there exists ineffective fraud detection and prevention techniques. Besides that, opportunity was the main interest of this study since even if a person is pressured to commit fraud and has justified within his or her mind that it is the right thing to do, fraud would still not be able to be perpetuated when there is lack of opportunity. This study sought to establish the influence of fraud prevention and detection techniques on fraud in Kenyan state corporations. In the context of this study, the higher the degree of perceived effectiveness of fraud prevention and detection techniques the harder it is for opportunities to be presented for potential fraudsters to perpetuate fraud. Thus, the level of fraud occurrence would be lower. Aside from that, the lower the degree of perceived effectiveness of fraud prevention and detection techniques the easier it is for opportunities to be presented for potential fraudsters to perpetuate fraud. Thus, the level of fraud occurrence would be higher.

Consequently, if the study established that most of the assessed fraud prevention and prevention techniques were perceived to be highly effective and are negatively linked to the level of fraud occurrences in Kenyan State Corporations, Nairobi County. Then the proposition of the theoretical model can be upheld, which contends that the presence of effective mechanisms reduces opportunities to perpetuate fraud and the vice versa.

2.2.2 Fraud Management Lifecycle Theory

The pioneer of the fraud management lifecycle theory was Wesley (2004). The theoretical model is made up of eight correlated and interconnected nodes/stages comprising of; fraud deterrence, preventive, detective, mitigation, analysis, policy formulation, investigation and prosecution (Kiragu et al., 2013). The theoretical model theorizes that the last stage of the theoretical model, prosecution is the aggregation of the accomplishments and failures of a firm's fraud risk control cycle (Chepkoech & Rotich, 2017). It can indicate that the firm failed to monitor fraud risks because fraud was carried out successfully and it can also indicate that the firm successfully managed fraud because it was able to identify it, apprehend and successfully prosecute the individuals responsible for those fraudulent actions (Chepkoech & Rotich, 2017).The fraud management lifecycle theory is important since it clearly depicts the phases of fraud risk management in a systematic manner (Ohando, 2015).

For instance in regards to the first phases of fraud management comprising of fraud deterrence and prevention, the firms can offer anti-fraud training programs and well-communicated code of ethics to discourage people from completely participating in fraud. Consequently, fraud detection controls can be instituted to unravel fraud cases and the responsible parties, investigate them and produce evidence that can lead to their successful prosecution and imprisonment. The theory also illustrates the institutional processes that has to be put in place in order for fraud to be effectually controlled (Ohando, 2015). The theoretical model was relevant to this study since it sought to establish the influence of fraud prevention and detection techniques which are part of the fraud management lifecycle, on mitigation of fraud in Kenyan state corporations, Nairobi County. For instance if the study established a negative significant association between the preventive and detective measures and the level of the prevalence of fraud. Then it would mean that the Kenyan state corporations effectively manages fraud based on the two nodes (fraud prevention and fraud detection) of the fraud management lifecycle.

2.3 Empirical Review

The subsections below presented the empirical studies reviewed. Subsection 2.3.1 presented studies reviewed that sought to establish the influence of fraud prevention techniques on fraud and the related studies which sought to establish the perceived effectiveness of fraud prevention techniques. Subsection 2.3.2 presented studies reviewed that sought to establish the influence of

fraud detection techniques on fraud and the related studies which sought to establish the perceived effectiveness of fraud detection techniques. The sections revealed the similarities and contrasts in the findings of the studies conducted in different countries and sectors.

The sections also attempted to explain the reasons behind the findings of the studies which also helped in developing the hypothesis which will be tested by the research outcomes of this study.

2.3.1 Influence of Fraud Prevention Techniques on Prevalence of Fraud

Currently, there have been limited studies (Kamaliah et al., 2018; Waigumo, 2012) conducted to establish the influence of fraud prevention techniques on mitigation of fraud incidences. Kamaliah et al. (2018) found that there was a significant negative association between the fraud deterrence program and the level of fraud incidents in Malaysian institutions in the public sector. The study only focused on one technique which was organizational intergrity plan. The findings of Kamaliah et al. (2018) concurred with Adams et al. (2006) who actually professed that the development and implementation of a fraud prevention program is the most effectual approach of curbing fraud losses. Conversely, Waigumo (2012) revealed that fraud prevention and detection techniques had an insignificant negative relationship with fraud in Kenyan banking sector. Though the study interpreted the negative insignificant relationship as that the introduction of a new type of fraud renders the present fraud prevention techniques ineffective until a new anti-fraud technique is employed to address that particular fraud issue.

Moreover, Waigumo (2012) revealed that the fraud prevention techniques commonly employed in the Kenyan banking sector which had insignificant influence on fraud were reference checks on employees, fraud reporting policy, staff rotation policy and bank reconciliations. Both studies (Kamaliah, 2018; Waigumo, 2012) analyzed fraud differently since they were operating in different sectors. Kamaliah (2018) measured fraud as bribery/kickbacks, theft, misappropriation of assets, procurement fraud, payroll fraud and financial statement fraud while Waigumo (2012) measured fraud as account opening fraud, cheque kitting, and credit and debit cards fraud, money transfer fraud among others. Most of the studies (Akomea-Frimong, Andoh & Ofosu-Hene, 2016; AKI, 2013; Bierstaker et al., 2006; Zamzami, Nusa & Timur, 2016;PwC, 2018; Mangala & Kumari, 2017; Kao et al., 2018; Omar & Abu Bakar (2012) have been anchored on the perceptions of the effectiveness of fraud prevention techniques.

For instance (Bierstaker et al., 2006; Zamzami, Nusa & Timur, 2016) who conducted studies to establish the effectiveness of fraud prevention techniques found that code of conduct had high effectiveness rating. On the contrary, Omar and Abu Bakar (2012) revealed that code of conduct was perceived to be ineffective in government-linked firms in the Malaysian public sector. This is because according to Hassink et al, (2007) and Weaver et al. (1999) the code of ethics might lose credibility if it is not really executed by the particular organization. The code of ethics has to be frequently conveyed to the employees of a particular organization in order for them to be enlightened about their responsibility to curb any form of unethical conduct (Albrecht et al., 2009).

Moreover (Akomea-Frimong, Andoh & Ofosu-Hene, 2016) and (AKI, 2013) observed that the anti-fraud training sessions were perceived to be very effective in mitigating fraud in the Ghanaian and Kenyan Insurance sectors respectively. Conversely, Omar and Abu Bakar (2012) revealed that anti-fraud training sessions and anti-fraud policy were perceived to be ineffective in preventing fraud in government-linked firms in the Malaysian public sector. A global fraud survey conducted by PwC (2018) revealed that firms are deriving huge benefits from alternative and disruptive technologies of curbing fraud such as continous monitoring, periodic analysis, email monitoring and transaction testing. The PwC (2018) revealed that only a few organizations have ethics and compliance programmes the study also established that there is a decrease of a number of firms investing in fraud risk management training programmes.

Mangala and Kumari (2017) contended that despite the escalation of fraud, the anti-fraud techniques of most corporations are not up-to-date. The study had revealed that the most effective fraud prevention techniques were the employment of information technology, timely audits, corporate governance mechanisms, regular inspections and corporate policies and procedures. Moreover, Mangala and Kumari (2017) argued that the investment of funds on the most effective anti-fraud expense should not be considered as a costly affair but as a remedy for potential financial and reputational losses due to fraud. Besides that, Kao et al. (2018) observed that cash reviews, annual auditing and installation of passwords were effective in preventing fraud occurrence in the Ghananian financial organizations. Interestingly the study revealed that ethical integrity and anti-fraud training sessions were ineffective in preventing fraud. The findings concurred with Omar & Abu Bakar (2012) who also revealed that fraud prevention and

detection training is ineffective in detering fraudululent actions. Moreover the findings of Kao et al. (2018) also agreed with the research outcomes of (Agathee & Ramen, 2017; Othman et al., 2015) that password protection was regarded by the accounting professions to be highly effectual in deterring fraud prevalence.

In the context on Kenyan state corporations there is no clear guideline for fraud prevention policies that has been recommended for mitigation corruption, asset misappropriation or financial statement fraud. Furthermore, the Mwongozo Code of Governance for State Corporations 2015 only stipulates the roles of the board and the guidelines of establishing it but there is no clear information on how corporate governance as a fraud prevention technique can be used to alleviate in State corporations. Additionally, there was limited research conducted to establish the influence of fraud prevention techniques on fraud in Kenyan state corporations, Nairobi County.

2.3.2 Influence of Fraud Detection Techniques on Prevalence of Fraud

Presently, there have been limited studies (Waigumo, 2012) conducted to establish the influence of fraud detection techniques on fraud. The study conducted by Waigumo (2012) revealed that fraud detection techniques had an insignificant effect on fraud in Kenyan commercial banks. Though insignificant it had a negative relationship with fraud occurring in banks. Meaning that the increased usage of fraud detection techniques consequently results to reduction of fraud. The insignificant association was due to the fact that Kenyan commercial banks emlpoyed old controls to manage fraud and are yet to incorporate electronic techniques to combat the fraud menace. The old detective techniques, the Kenyan banks depended on comprised of manually administered techniques, fraud vulnerability reviews, financial ratios reconciliation of accounts, document examination and tips from staff.

Most of the studies have been based on perceptions testing the effectiveness of fraud detection (Agathee & Ramen, 2017; Othman et al., 2015; Bierstaker, Brody & Pacini, 2006; Ernest & Young, 2018; Zamzami, Nusa & Timur, 2016; Sengur, 2012; Tunji et al., 2016; Rahman, 2014; Efiong, Inyang & Joshua, 2016; PwC, 2018). Generally the studies established that discovery sampling, forensic accountants, fraud hotlines, continuous auditing, digital analysis and data mining were the most effective controls to curtail fraud in both the private and public sectors. Additionally, most studies such as (Efiong, Inyang & Joshua, 2016; Bierstaker et al., 2006;

Othman et al., 2015; Rahman, 2014; Omar & Abu-Bakar, 2012) observed that detective measures comprising of fraud hotlines, discovery sampling, whistle blowing program, organizational use of forensic accountants and data mining were rarely applied despite the fact that they were perceived to be very effective in curbing fraud.

For instance it has been revealed that digital analysis is rarely used in Malaysian banks employed since the accounting professionals were not familiar with the anti-fraud IT technology (Rahman, 2014).On the other hand, Albrecht and Albrecht (2002) argued that even though the employment of digital analysis is quite easy, the anti-fraud technique cannot align the symptom revealed with the exact type of fraud perpetrated. Moreover, Othman et al., (2015) asserted that forensic accountants, whistle blowing program and fraud hotlines are seldom utilized in Malaysian organizations in the public sector. Since the government has not yet developed effective whistle blowing policies, instituted forensic accounting departments which is a very expensive affair or established more fraud hotlines that can be used anonymously by the employees or the public.

Likewise, Bierstaker, Brody & Pacini (2006) contented that discovery sampling, forensic accountants and data mining are rarely utilized since organizations find it impossible to invest on these fraud detection techniques because they are very taxing. The argument agreed with the reasoning of Kumar, Haat and Ali (2012) who also contended that even though forensic accountants are essential in detecting fraud, their services are costly which consequently makes organizations to shy away from their services. The ACFE (2018) based on the report to the nations revealed that fraud losses were 50% lower in firms that have fraud hotlines than those lacking them. Moreover, ACFE (2018) also established that firms lacking fraud hotlines were twice likely to reveal fraud incidences by accidents or by the external auditors.

On the other hand, a global survey carried out by PwC (2018) found that a huge percentage of fraud incidences such as asset misappropriation, procurement and financial statement fraud were detected by tip off, suspicious activity monitoring, internal audits and detection by accidents. Additionally a global survey conducted by Ernest & Young (2018) established bribery and corruption frauds are commonly detected by whisteblowing. The survey also indicated that 55% of the organizations globally have a whistleblowing mechanism in place. In the U.S.A for instance, the Dodd Frank Act offers financial incentives for whistle blowers to give information regarding an ongoing fraud and the policy has really yielded positive receives in regard to

exposing fraud. This is because the investigative bodies in U.S.A always gets more tips from whistleblowers than from self reports.

There are two many types of whistleblowing mechanisms namely; formal and informal whistleblowing (Onodugo, 2014). Formal whistleblowing is applied when a fraud action is reported in line with the organizational protocol, on the other hand, informal whistleblowing is employed when a witness of a fraud action report it to his or her close associates or other informal channels other than the ones recommended by the firms. Most studies like (Efiong, Inyang & Joshua, 2016; Omar & Abu-Bakar, 2012; Ernest & Young, 2018; Othman et al., 2015) assessed the perceived effectiveness of whistleblowing mechanism on a holistic point of view but this study will try to establish the perceived effectiveness of formal and informal whistleblowing mechanisms separately to establish which type of whistleblowing mechanism is really vital in detecting and mitigating fraud occurrences. (Kao et al., 2018) also established that whistleblowing policy is effectual in unraveling fraud in Ghananian financial firms. Interestingly, the study established that fraud hotlines and fraud vulnerability reviews were perceived to be ineffective for detecting fraud.

In the context of Kenyan state corporations there is no clear guideline of fraud detection policies or programs that has been recommended on mitigation of corruption, asset misappropriation or financial statement fraud for the organizations. Additionally there was limited research conducted to establish the influence of fraud prevention techniques on fraud in Kenyan state corporations, Nairobi County.

2.3.3 The Controlling Effect of Firm Revenue on the Influence of Fraud Prevention and Detection Techniques on Fraud

Studies such as ACFE (2018); Bierstaker, Brody and Pacini (2006) revealed that small organizations employ few anti-fraud controls to prevent and detect fraudulent actions when compared to larger organizations that have sufficient anti-fraud controls to mitigate fraud. This is because small firms fear investing in anti-fraud controls especially the most effective ones since they are highly costly (Bierstaker, Brody & Pacini 2006). Bierstaker, Brody and Pacini (2006) established that corporations with a high turnover of between $250 million to $ 1billion dollars. Devotes their financial resources to anti-fraud technology which accountants utilizes to curtail or unravel fraud and commits the resources in the utilization of the forensic accountants and the

usage of continuous auditing to successfully curb fraud when compared to firms with low turnover. Therefore, we proposed that firms with high annual revenue are less likely to experience incidences of fraud since they implement the most effective anti-fraud techniques compared to firms with low annual revenues who are likely to experience a high level of fraud incidences. Since they cannot use the most effective anti-fraud techniques owing to the fact, they do not have sufficient funds to invest in them. Consequently, firm revenues controls the relationship between the fraud prevention and detection techniques and fraud incidences as presented in the conceptual framework in figure 2.1.

2.4 Summary of Literature Review and Research Gap

This chapter discussed the existing theories that comprised of the fraud triangle and agency theoretical models that were applicable to this study. It also identified the studies conducted in line with the specific objectives of this research investigation. It established the comparisons and contrasts on the research findings of the past studies and the research methods used to address the objectives linked to this study. Presently there has been limited research based on reviewed literature (Waigumo, 2012; Kamaliah et al., 2018) conducted to establish the influence of fraud prevention techniques on mitigation of fraud incidences in Kenyan state corporations. This is because the study conducted by Waigumo (2012) focused on the Kenyan banking sector while the study conducted by Kamaliah et al. (2018) was exclusively focused in the Malaysian public sector. But a study in the Kenyan public sector on the influence of fraud prevention techniques on fraud whose recommendations could be used to precisely address fraud in public insititutions in Kenya is currently lacking.

Moreover, most of the studies (Akomea-Frimong, Andoh & Ofosu-Hene, 2016; AKI, 2013; Bierstaker, Brody & Pacini, 2006; Zamzami, Nusa & Timur, 2016; Othman et al. 2015; Mangala & Kumari, 2017; Kao et al., 2018; Omar & Abu Bakar, 2012) have been based on perceptions testing the effectiveness of fraud prevention techniques without really showing its influence on curbing fraud. None of these studies have tried to assess the relationship between the fraud prevention techniques and fraud incidences. The study sought to bridge the knowledge gap. Consequently, the study sought to establish the influence of fraud prevention techniques on fraud in Kenyan state corporations, Nairobi County.

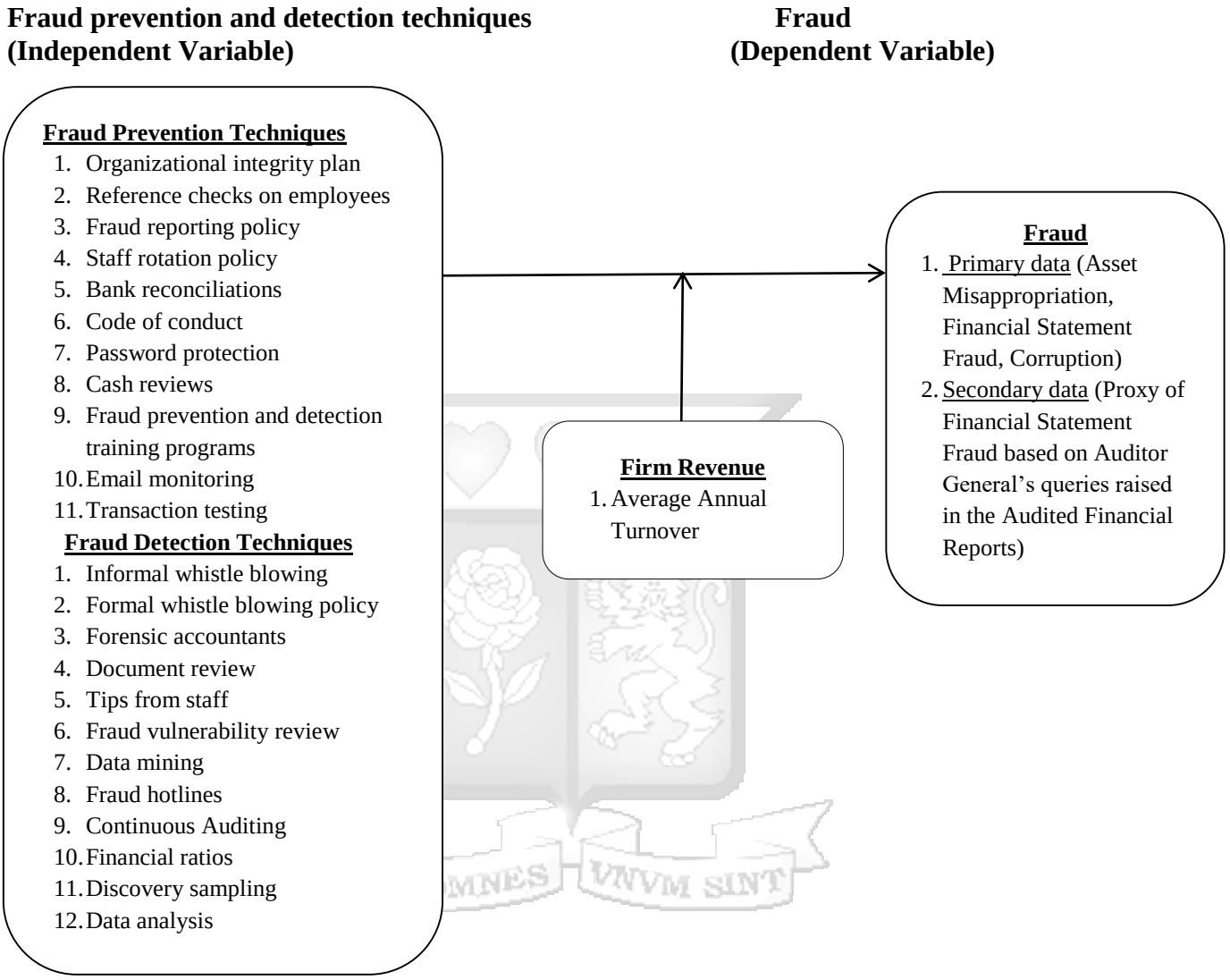
Additionally, there has been limited research based on reviewed literature (Waigumo, 2012) conducted to establish the influence of fraud detection techniques on mitigation of fraud incidences in Kenyan state corporations. This is because the study conducted by Waigumo (2012) focused on the Kenyan banking sector while the study conducted by Kamaliah et al. (2018) was exclusively focused in the Malaysian public sector. But a study in the Kenyan public sector on the influence of fraud detection techniques on fraud whose recommendations could be used to precisely address fraud in public insititutions in Kenya is currently lacking.

Moreover, most of the studies (Efiong, Inyang & Joshua, 2016; Sofia, 2016; Othman et al. 2015; Rahman, 2014; Zamzami, Nusa & Timur, 2016; Omar & Abu-Bakar, 2012) have been based on perceptions testing the effectiveness of fraud detection techniques without really showing its influence on curbing fraud. None of these studies have tried to assess the association between the detective measures and the level of fraud prevalence. The study sought to bridge the knowledge gap. Consequenty, the study sought to establish the influence of fraud detection techniques on fraud in Kenyan state corporations, Nairobi County. In addition there have been limited studies conducted (ACFE, 2018; Bierstaker, Brody & Pacini, 2006) to establish the controlling effect of firm revenues on the influence of fraud prevention and detection techniques on fraud. This study sought to bridge the gap by establishing if firm revenue controls the influence of fraud prevention and detection techniques on fraud in Kenyan State Corporations, Nairobi County.

2.5 The Conceptual Framework

The conceptual framework presented in figure 2.1 in the next page depicted the relationship between fraud prevention and detection techniques (independent variables) on fraud (dependent variable) and the moderating effect of firm revenue.

Figure 2.1: Relationship between Fraud Prevention and Detection Techniques on Fraud in Kenyan State Corporations



Source: Researcher (2019)

2.6 Operationalization of Variables

The constructs of the fraud prevention techniques comprised of; organizational integrity plan, reference checks on employees, fraud reporting policy, staff rotation policy, bank reconciliations, email monitoring, transaction testing, code of conduct, password protection, cash reviews and fraud detection and prevention training programs. The constructs were operationalized on the basis of their perceived effectiveness measured by a 5-point Likert scale. This style of operationalization was supported by (Kamaliah et al., 2018; Omar & Abu-Bakar, 2012; ACFE,

2018; PwC, 2018; Agathee &Ramen, 2017; Kao et al., 2018; Othman et al., 2015;Akomea-Frimong, Andoh & Ofosu-Hene, 2016; AKI, 2013; Efiong, Inyang & Joshua, 2016; Kao et al., 2018; Bierstaker, Brody &Pacini, 2006) since the studies assessed the perceived effectiveness of the fraud prevention techniques by using Likert scales to rate the level of perceived effectiveness as a tool of measurement.

The fraud management lifecycle theory informed the independent variable (fraud prevention techniques) since it is the second stage of managing fraud in the lifecycle. The findings of the study established whether the perceived effectiveness of the fraud prevention techniques contributes to the successful mitigation of fraud or failure to prevent fraud as proposed by the theoretical model. Furthermore, the fraud triangle theoretical model also informed the independent variable with specific focus on opportunity characterized by weak controls. If the study established that the fraud prevention techniques are perceived to be very effective and negatively influences fraud then it would uphold the proposition of the theoretical model that presence of robust controls denies fraudsters the opportunity to perpetuate fraud. On the other hand, if the study revealed that fraud prevention techniques are perceived to be less effective and positively influences fraud then it would uphold the proposition of the theoretical model that the presence of weak controls provides opportunity for people to carry out unethical activities.

Besides that, in regard to the second independent variable (fraud detection techniques) its constructs included; Informal whistleblowing, formal whistleblowing policy, forensic accountants,document review, tips from staff, fraud vulnerability reviews, fraud hotlines, digital analysis, data mining, financial ratios, discovery sampling and continous auditing. The constructs were operationalized on the basis of their perceived effectiveness measured by a 5-point Likert scale. This approach of operationalization had been employed by previous studies conducted by Efiong et al. (2016), Bierstaker et al. (2006), Rahman (2014), Agathee and Ramen (2017), Zamzami et al. (2016), Othman et al. (2015) and Sengur (2012) in assessing the perceived effectiveness of fraud detection techniques. The independent variable was supported by the fraud management lifecycle theory since it was linked with the third phase of managing fraud in the lifecycle which is fraud detection. The research outcomes of the study established whether the perceived effectiveness of the fraud detection techniques contributed to the successful mitigation of fraud or failure to curb fraud as proposed by the theoretical model. Moreover, the fraud

triangle theoretical model also informed the independent variable with specific focus on opportunity characterized by weak controls the same way as it was explained in relation to fraud prevention techniques.

The construct of the moderating variable (firm revenue) applicable to this study was average annual turnover. The construct was operationalized as average annual revenue/total assets ranging between less than Kshs. 250 million to more than Kshs. 1 billion which will be measured on a categorical scale. This concept of operationalizing the moderating variable was borrowed from Bierstaker, Brody and Pacini (2006) who had applied the same in assessing the level of firm revenues and how they influenced the perceived effectiveness of fraud prevention and detection techniques.

Fraud was operationalized as a fraud proxy whereby an audited financial report by the Auditor General of a State Corporation with a raised query on particular element in its financial statement represented a proxy for a fraud firm and those with no queries on any element of the financial statement represented a proxy for a non-fraud firm. The proxy for a fraud firm was represented by 1 while a proxy for a non-fraud firm will be represented by 0. This idea of the operationalization of fraud was borrowed from Zhang and Kryzanowski (2013) who sought to establish if the characteristics of the board deters corporate fraud and Othman and Salleh (2015) who sought to establish the relationship between executive compensation and canadian financial restatements.

Furthermore, based on primary data the constructs of fraud was based on the three main types of fraud as theorized by ACFE (2018) namely; corruption fraud, asset misappropriation fraud and financial statement fraud. The supporting statements that indicated asset misappropriation as hypothesized by ACFE (2018) included; billing schemes, asset requisitions and transfers, multiple reimbursements, false sales and shipping and inflated costs in regard to procurement of services. On the other hand, the supporting statements that indicated financial statement fraud as theorized by ACFE (2018) included; improper asset valuations, overstated liabilities and expenses, fictitious revenue and providing misleading disclosures.

Finally, the supporting statements that indicated corruption fraud included; invoice kickbacks, bid rigging, illegal gratuities and conflict of interest involving purchasing and sales schemes. The

constructs were operationalized based on the level of frequency of occurrence (often, less often, not sure, rarely, never) which were measured by a 5-point Likert scale of frequency as it had been previously done by Kamaliah et al. (2018). The operationalization of variables were summarized and presented in Table 2.1 below.

Table 2.1: Operationalization of Variables

Independent Variable	Construct	Operational Construct	Measurement	Supporting Literature	Supporting Theory
Fraud Prevention Techniques	Organizational Integrity Plan	The perceived effectiveness of Organizational Integrity Plan	A 5-point Likert Scale of perceived effectiveness	Kamaliah et al. (2018); Adams et al. (2006)	The fraud management lifecycle model and the fraud triangle model
	Reference checks on employees	The perceived effectiveness of reference checks on employees	A 5-point Likert Scale of perceived effectiveness	Waigumo (2012)	The fraud management lifecycle model and the fraud triangle model
	Fraud Reporting Policy	The perceived effectiveness of fraud reporting policy	A 5-point Likert Scale of perceived effectiveness	Waigumo (2012); Omar and Abu-Bakar (2012)	The fraud management lifecycle model and the fraud triangle model
	Password Protection	The perceived effectiveness of password protection	A 5-point Likert Scale of perceived effectiveness	Agathee and Ramen (2017); Kao et al. (2018); Othman et al. (2015)	The fraud management lifecycle model and the fraud triangle model
	Cash reviews	The perceived effectiveness of cash reviews	A 5-point Likert Scale of perceived effectiveness	Kao et al. (2018)	The fraud management lifecycle model and the fraud triangle model
	Fraud Prevention and Detection training programs	The perceived effectiveness of fraud prevention and detection training programs	A 5-point Likert Scale of perceived effectiveness	Akomea-Frimong, Andoh and Ofosu-Hene (2016); ACFE (2018); Efiong, Inyang and Joshua (2016); Omar and Abu-Bakar (2012); Kao et al. (2018)	The fraud management lifecycle model and the fraud triangle model
	Code of Conduct	The perceived effectiveness of code of conduct	A 5-point Likert Scale of perceived effectiveness	Bierstaker, Brody and Pacini (2006); ACFE (2018); Omar and Abu-Bakar (2012)	The fraud management lifecycle model and the fraud triangle model
	Bank Reconciliations	Perceived effectiveness of bank reconciliations	A 5-point Likert of perceived effectiveness	Waigumo (2012); Sofia (2016)	The fraud management lifecycle model and the fraud triangle model
	Staff Rotation Policy	Perceived effectiveness of staff rotation policy	A 5-point Likert of perceived effectiveness	Waigumo (2012)	The fraud management lifecycle model and the fraud triangle model

	Email monitoring	Perceived effectiveness of email monitoring	A 5-point Likert of perceived effectiveness	PwC (2018)	The fraud management lifecycle model and the fraud triangle model
	Transaction testing	Perceived effectiveness of transaction testing	A 5-point Likert of perceived effectiveness	PwC (2018)	The fraud management lifecycle model and the fraud triangle model
Fraud Detection techniques	Informal whistle blowing	Perceived effectiveness of informal whistle blowing	A 5-point Likert of perceived effectiveness	Kao et al. (2018); Ernest & Young (2018); Bierstaker et al. (2006); Onodugo (2014); Efiong, Inyang and Joshua (2016); Othman et al. (2015)	The fraud management lifecycle model and the fraud triangle model
	Formal whistle blowing policy	Perceived effectiveness of formal whistle blowing policy	A 5-point Likert of perceived effectiveness	Kao et al. (2018); Ernest & Young (2018); Bierstaker et al. (2006); Onodugo (2014); Efiong, Inyang and Joshua (2016); Othman et al. (2015)	The fraud management lifecycle model and the fraud triangle model
	Forensic accountants	Perceived effectiveness of forensic accountants	A 5-point Likert of perceived effectiveness	Zamzami et al. (2016);Bierstaker et a. (2006); Othman et al. (2015)	The fraud management lifecycle model and the fraud triangle model
	Document Review	Perceived effectiveness of document review	A 5-point Likert of perceived effectiveness	Waigumo (2012)	The fraud management lifecycle model and the fraud triangle model
	Tips from staff	Perceived effectiveness of tips from staff	A 5-point Likert of perceived effectiveness	PwC (2018); Waigumo (2012)	The fraud management lifecycle model and the fraud triangle model
	Fraud vulnerability reviews	Perceived effectiveness of fraud vulnerability reviews	A 5-point Likert of perceived effectiveness	Waigumo (2012); Kao et al. (2018)	The fraud management lifecycle model and the fraud triangle model
	Data mining	Perceived effectiveness of data mining	A 5-point Likert of perceived effectiveness	Rahman (2014); Agathee and Ramen (2017)	The fraud management lifecycle model and the fraud triangle model
	Fraud hotlines	Perceived effectiveness of fraud hotline	A 5-point Likert of perceived effectiveness	Othman et al. (2015); ACFE (2018); Efiong et al. (2016)	The fraud management lifecycle model and the fraud triangle model
	Continuous auditing	Perceived effectiveness of continuous auditing	A 5-point Likert of perceived effectiveness	Bierstaker, Brody and Pacini (2006); Rahman (2014)	The fraud management lifecycle model and the fraud

					triangle model
	Discovery sampling	Perceived effectiveness of discovery sampling	A 5-point Likert of perceived effectiveness	Bierstaker, Brody and Pacini (2006); Agathee and Ramen (2017)	The fraud management lifecycle model and the fraud triangle model
	Data analysis	Perceived effectiveness of data analysis	A 5-point Likert of perceived effectiveness	Bierstaker, Brody and Pacini (2006); Rahman (2014); Sengur (2012)	The fraud management lifecycle model and the fraud triangle model
	Financial ratios	Perceived effectiveness of financial ratios	A 5-point Likert of perceived effectiveness	Waigumo (2012)	The fraud management lifecycle model and the fraud triangle model
Moderating Variable	Firm revenue	Level of average annual revenue (less than Kshs. 250 million to more than Kshs. 1 billion)	A 5-point Categorical scale	ACF (2018); Bierstaker, Brody and Pacini (2006)	

Dependent Variable(Fraud)	**Construct**	**Operational Construct**	**Measurement**	**Supporting Literature**	**Supporting Theory**
Fraud Proxy	Queries raised concerning particular aspects of the financial statement in the Auditor General's Report will act as a fraud proxy for a particular State corporation	Audited financial reports with Auditor General's raised queries regarding questionable aspects of financial statement will represent a proxy of fraud firms while those with no queries in the Audited reports will represent a proxy for non-fraud firms	Proxy for fraud firm = 1; Proxy for non-fraud firm = 0	Zhang and Kryzanowski (2013);Othman and Salleh (2015)	
Asset Misappropriation	Billing schemes	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)	
	Asset requisitions and transfers	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)	
	Multiple reimbursement	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)	
	False sales and shipping	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)	
	Inflated costs in regard to procurement of	Level of frequency (often, less often, not sure, Rarely,	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)	

	services	never)		
Financial Statement Fraud	Improper asset valuations	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)
	Overstated liabilities and expenses	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)
	Fictitious revenue	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)
	Providing misleading disclosures	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)
Corruption	Invoice kickbacks	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)
	Bid rigging	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)
	Illegal gratuities	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)
	Conflict of interests involving purchasing schemes and sales schemes	Level of frequency (often, less often, not sure, Rarely, never)	A 5-point Likert Scale of Frequency	ACFE (2018); Kamaliah et al. (2018)

Source: Researcher (2019)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the research methodological approaches that the study employed as illustrated in the subsequent sections below while addressing its set objectives in regard to the research philosophy, research design, sample and sampling techniques, research instruments and data analysis techniques.

3.2 Research Philosophy

The research investigation relied on the post-positivist research paradigm. Since post-positivism balances both interpretivism which contends that the truth lies on subjective reality and positivism which contends that the truth lies on objective reality (Panhwar, Ansari, & Shah, 2017). Even though, post-positivist paradigm aims to explore a particular phenomenon scientifically just like positivism, it contends that there is no absolute truth (Philips & Burbules, 2000). Post-positivism's purpose is not to disapprove the quantitative/scientific aspects of positivism in research, instead it emphasizes a proper comprehension of the perspectives and directions of any research study (Fischer, 1998). Post-positivism seeks to examine a particular phenomenon objectively by using quantitative data and strengthening the findings with the assistance of qualitative data (Wildemuth, 1993). The study used Likert scale items in the questionnaire to collect the respondents' personal views/perceptions on the effectiveness of fraud prevention and detection techniques and the level of fraud occurrence in their firms.

The Likert scale was applied to transfigure the qualitative responses into numerical data and statistical analysis comprising of descriptive, correlation and regression analysis was employed to generalize the findings. Then qualitative data retrieved from various literature sources was used to strengthen the quantitative findings. This is because qualitative data is a narrative form which subjective in nature whose aim is to describe and not to measure the object of focus (Sekaran, 2003; Gay et al., 2006). Post-positivism is different from pragmatic research philosophy since, even though pragmatic paradigm adopts both qualitative and quantitative research approaches, it does it in the sense of drawing different views that is triangulated to produce a certain reality (Saunders, Lewis & Thornhill, 2011). For instance, based on a

pragmatic approach, questionnaires can be used to collect data to be analysed quantitatively which is then equated or boosted with qualitative data collected from interviews or focused group discussions to precisely address or understand a particular reality.

3.3 Research Design

The research investigation relied on explanatory research design. An explanatory study is focused on illustrating the provided descriptive information by looking for the causes and the underlying reasons in order to justify or disprove an explanation or prediction (Boru, 2018). It is carried out to determine the associations between the various attributes being studied (Boru, 2018). Consequently, this study provided a description of the state of affairs of the perceived effectiveness of fraud detection and prevention techniques together with the level of fraud occurrence in Kenyan State Corporations. It then went ahead to link the existing literature to illustrate the reasons behind the findings and if the findings agreed or contradicted with the research outcomes of the previous similar studies.

Besides that, it also used the descriptive information to ascertain the relationship between the study variables (fraud, detection, fraud prevention, firm revenue and level of fraud) and the reasons for the established association based on existing fraud literature. On top of that the findings were equated with the previous research outcomes in order to support or refute the research findings that had been established. It was also used to refute or support the underlying theoretical propositions.

3.4 Population of the Study

According to Kombo and Tromp (2009), a target population is a specific set of elements or individuals whose traits are aimed to be examined. The total population of State corporations in Kenya is 262 (Executive Office of the President, 2013). The target population comprised of all state corporations located in Nairobi City County. Nairobi City County proved to be convenient in regard to data collection because the researcher resides in that county. The population of the study included the senior management (financial directors and heads of internal audit), internal auditors (employees) and accountants (employees).

3.5 Sample and Sampling Techniques

Convenience sampling was applied by the study to choose the State corporation firms in located in Nairobi City County since was more accessible to the researcher in terms of collecting data. Moreover, the County has the largest percentage of the firms operating in it when compared to the other parts country. Purposive sampling was utilized to sample a select management team (financial directors and heads of internal) and select employees (accountants and internal auditors) to participate in this study since they were relevant to the main purpose of this study leaving other management members and employees. This is because the selected set of employees deals with the financial management, auditing and internal control management of the corporations unlike the employees drawn from Marketing, Legal, and Human Resource Departments among others who deals with other completely different issues. Furthermore, convenience sampling was employed to select the employees that were relevant to the purpose of this study. This meant that the researcher only targeted the relevant respondents linked to the purpose of the study that she was able to find in the office for the data collection exercise. This is because establishing a sampling frame containing the list of all employees for each State Corporation was not going to be possible. Since, it would have taken a very long time to gather the list of all the employees in each State corporation, which in total is more than 250. Consequently, it would have been time consuming and the researcher would not have been able to complete her research based on the university's timeframe.

Creswell (2011) stated that this kind of sampling technique is employed when a researcher retrieves data from elements that happens to be present at the place of interest and at the time, the data collection exercise is conducted. Cochran (1963) sample size formula was employed to establish the sample size of the respondents since the population of the respondents was large, and the precise number was unknown. The sample size for the unknown population was presented below.

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where;

n_0 = the desired sample size,

e = is the desired level of precision (i.e. the margin of error),

p = is the (estimated) proportion of the population which has the attribute in question,

q = is 1 – p.

Based on the above formula, when a sample size of the population is computed, it is presumed that p=0.5 (maximum estimated proportion of the population). A 95% confidence level is desired with a ± 5% precision. A 95% confidence level gives a Z-value of 1.96 as per the normal table. Consequently, the sample size will be;

$n_0 = ((1.96)^2 (0.5) (0.5)) / (0.05)^2 = 385.$

Therefore, the sample size value of the targeted respondents for this study was 385.

Additionally, Yamane sample size formula that was recommended and used by Mwangi (2017) was employed to establish the number of the State Corporations in Nairobi County that this study targeted to obtain the respondents for the data collection exercise. The Yamane's statistical formula was presented as follows;

n = N/ (1 + Ne^2) (+/- 10%)

Whereby; n = the precise sample size, N = Finite population, e = margin of error = 0.1 (at 90% confidence level) based on the research condition.

Since the total population of State corporations was known (total population was 262). Then the N value will be 262. Consequently, the calculation of the sample size of the total number of State corporations to be targeted in Nairobi County was computed as follows;

N = 262/ (1 + (262×0.1^2))
= 262/ (1 + (262×0.1×0.1))
= 262/ (1 + (262 × 0.01)) = 262 + (1+2.62)
= 262/ (3.62) = 65.157 = 72

Therefore, the total sample size of the State corporations that this study targeted to obtain data from the selected respondents was 65. The total sample size distribution per State corporation was; 385/72 = 5. Consequently, the sample distribution was as follows; for each targeted State corporation at least 1 financial director and 1 head of the internal audit department were targeted to represent the senior management. Moreover, at least 1 accountant and 2 internal auditors were targeted from each sampled State corporation to represent the population of the employees

relevant to this study. This meant that the total sample size of the financial directors from all the targeted State corporations was 72 and the total sample size of the heads of the internal audit departments from all the targeted State corporations was also 72.

On the other hand, the total sample size of the accountants from all the targeted State corporations was 88. This is because from 66th to 71st State Corporation 3 accountants were considered in each firm, and in the 72nd State Corporation 5 accountants were considered due to their large sizes. Finally, the total sample size of the internal auditors from all the targeted State corporations was 153. This is because from 66th to 71st State Corporation 3 internal auditors were considered in each firm, and in the 72nd State Corporation 5 internal auditors were considered due to their large sizes. Table 3.1 in the next page presents how the total sample size was distributed among the targeted respondents in each of the selected 72 State corporations in Nairobi County. Appendix Six presented the sample size distribution of the study.

3.6 Data Collection Methods

The study employed questionnaires to collect data since it covers a large sample of respondents when compared to interviews and focused group discussions (Peil, Rimmer, 1995). Moreover, it is an economical and quicker technique of retrieving primary data when equated to other research instruments (Kothari, 2004). Additionally, it offers the best responses when the privacy of the respondents is guaranteed (Peil, Rimmer, 1995).

The first part of the questionnaire in Appendix 1, Section A, was used to solicit the deographic information of the respondents. It sought to know the gender of the respondent, the name of the State Corporation that he or she was working in. It also sought to know the job title, level of education, current certification and years of work experience of the respondent. It also sought to know the annual average revenue of the State Corporations. Whose data was used to establish if firm revenue had a controlling effect on the influence of fraud prevention and detection techniques on fraud in Kenyan State Corporations. Section B of the questionnaire sought to establish the perceived effectiveness of fraud prevention techniques on mitigation of fraud. The information was used to address the first objective of the study that sought to establish the influence of fraud prevention techniques on fraud in Kenyan State Corporations. The perceived effectiveness of the studied fraud prevention techniques were measured on a 5-point Likert scale

of effectiveness (1-“Very Ineffective”; 2-“Ineffective”; 3-“Moderately Effective”; 4-“Effective”; 5-“Very Effective”).

Section C of the questionnaire sought to establish the perceived effectiveness of fraud detection techniques on mitigation of fraud. The information was used to address the second objective of the study that sought to establish the influence of fraud detection techniques on fraud in Kenyan State Corporations. The perceived effectiveness of the studied fraud detection techniques were measured on a 5-point Likert scale of effectiveness (1-“Very Ineffective”; 2-“Ineffective”; 3-“Moderately Effective”; 4-“Effective”; 5-“Very Effective”). Section D of the questionnaire was used to retrieve information on the extent of fraud occurring in Kenyan State Corporations which addressed the first and second objectives respectively. The level of fraud occurrence was measured by a 5-point Likert scale of frequency of occurrence (1-“Never”; 2-“Rarely”; 3-“Undecided”; 4-“Always”; 5-“Often”).

Secondary data based on the Auditor-General reports of the audited financial statements of State corporations was used to retrieve proxy fraud information in regard to financial statements with raised queries on particular items of the financial statements by the Auditor-General. The secondary data was based on the 2018 Auditor-General financial reports of the State corporations.

In regards to collecting data, a research permit was acquired from Strathmore University. Then it was sent to the state corporations a week before the commencement of the data collection exercise in order to prepare the staff in advance for the data collection. The researcher personally administered the questionnaires to the staff after getting permission to collect data. The participants in each respective state corporation was given a limited period of one week to fill the questionnaires. Those who failed to respond on time were given an allowance of two extra days. Necessary follow-ups were made via e-mails and phone calls to ensure that the participants had completed filling the questionnaires. The researcher collected data between the months of April and May 2019.

3.8 Research Quality

The research quality of a specific research investigation is based on its validity and reliability of its research instruments. This study assessed the content validity of the questionnaire through a pilot study like it had been done by previous related studies (Rahman, 2014;Kamaliah et al., 2018) before the final questionnaire will be administered during the main data collection exercise. The pilot study was conducted on a sample of 40 participants who were not considered in the final data collection exercise to mitigate cases of biasness. The sample size of the pilot test constituted roughly 10% of the total sample size of the population. Barringer and Meshoulam (2000) recommended that a sample of 10% of the total sampled population is sufficient for pilot studies. The pilot test targeted 10 Kenyan State Corporations in Nairobi County.

Consequently, 1 accountant and 1 internal auditor from each of the targeted State Corporation in Nairobi City County were requested to evaluate the questionnaire items to make sure that they have been adequately covered and they precisely address the objectives of the study. The respondents selected were expert judges to authenticate the validity of the questionnaire based on their profession experience and adequate knowledge in the field of fraud examination matters. Based on their views and proposals, the irrelevant items were erased and some questions were changed for clear understanding before producing the final questionnaire.

The reliability of the questionnaire is measured by the Cronbach's Alpha, which tests for the internal consistency of the questionnaire items. The values of the Cronbach's Alpha ranges from 0 to 1, and the numerical values close to 1 reveals a robust internal consistency of the questionnaire items and therefore can be relied on for further analysis. According to Kamaliah et al. (2018) a Cronbach's alpha value of 0.70 portrays a strong internal consistency of the questionnaire items. This is the benchmark value that this study employed to test for the reliability of its questionnaire after conducting the pilot study. The results of the reliability test analysis were displayed in Table 3.1 in the next page.

Table 3.1: Reliability Test Results

Scale	Cronbach's Alpha	Number of Items
Fraud Prevention Techniques	0.857	11
Fraud Detection Techniques	0.862	12
Fraud Occurrence Indicators		
Asset Misappropriation	0.872	5
Financial Statement Fraud	0.789	4
Corruption	0.870	4

Source: Researcher (2019)

In Table 3.1 above, all the 11 items in fraud prevention techniques' scale were internally consistent in measuring the same construct since the scale posted a Cronbach's Alpha co-efficient value of 0.857, which was above the benchmark value of 0.7. Furthermore, all the 12 items in Fraud Detection Techniques' scale were also internally consistent in assessing the same construct since the scale posted a Cronbach's Alpha co-efficient figure of 0.862. In addition, all the questionnaires items in the fraud occurrence indicators' scale were also internally consistent in measuring the same construct since all the 13 items posted Cronbach's Alpha coefficient values that were more than the benchmark value of 0.7.

3.9 Data Analysis Techniques

Exploratory factor analysis was employed to establish the perceived effectiveness of fraud prevention and detection techniques. Factor analysis functions on the notation that it preserves the variables that accounts for a high percentage of variability and discards those with a low percentage of variability thus simplifying multivariate analysis with respect to regression analysis (Yong & Pearce, 2013). This meant that the factors representing fraud detection and prevention techniques accounting for a high percentage of variance were retained for further analysis. The Eigenvalue is used to assess the variance the factors attempts to explain (Fredrick, 2013). A factor that posts a value of more than 1 indicates that it accounts for a high percentage of variance and is also retained for further analysis (Fredrick, 2013).

On the other hand, a factor posting a value less than 1 indicates that it accounts for a low percentage of variance and consequently it is discarded (Fredrick, 2013). This is the rule of thumb that this study used to establish if the factors/anti-fraud techniques accounted for a high percentage of variance and those accounting for a high percentage of variance were retained and

used for regression and correlation analysis. The sample adequacy of the dataset was evaluated by the Bartlett's test of Sphericity to establish if the data was sufficient for factor analysis. Kaiser (1974) as cited by Omondi (2018) recommended that a KMO value of 0.5 indicates that the sample adequacy of the data is sufficient and satisfactory. Moreover, the Bartlett's test of Sphericity should be greater than 150. The study used these benchmark values to establish if the dataset is sufficient for factor analysis.

Moreover the research study employed the Ordinal logistic regression model to analyze the relationship between the fraud prevention and detection techniques (based on primary data retrieved) and fraud represented by proxy of fraud based on audit queries raised by the Auditor General financial reports of State corporations (based on secondary data retrieved). This was because the dependent variable were dichotomous which were measured using binary codes; proxy for fraud firm and proxy for non-fraud firm (proxy for fraud firm = 1; proxy for non-fraud firm = 0) (Othman & Salleh, 2015) and the independent variables were in an ordinal scale. Ordinal logistic regression model is best suited in analyzing relationships between the independent and dependent variables when compared to other regression models only if the dependent variable has only two values, such as 0 and 1 (Peng, Lidalee, & Ingersoll, 2002). Furthermore, the regression model is flexible and suited for modeling situations because it does not presume that the independent variables are normally distributed as discriminate analysis does (Wilson & Press, 1978).

Consequently, the following logistic regression model was used;

$$\text{Logit } (Y) = \text{In } \frac{(\pi\ )}{1 - \Pi} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu i \qquad \text{(Equation 1)}$$

Whereby (Y) represented fraud (Based on secondary data retrieved from Auditor General financial reports of State corporations). On the other hand, (α) represented the constant term. The independent variables (that were measured on a Likert scale) included: fraud prevention techniques (X_1) and detection techniques (X_2). (X_3) represented firm revenue (measured at a categorical scale) which was the moderating variables of the study. Additionally β_1, β_2 and β_3 represented Beta coefficients for which we were trying to predict the value of Y and (μi) was the error term. Multiple Linear Regression model was employed to establish the influence of fraud prevention and detection techniques on the mitigation of fraud in Kenyan State corporations and

the moderating effect of firm revenue. Previous studies such as (Kamaliah et al., 2018; Waigumo, 2012) employed this type of regression model to test the relationship between the fraud detection and prevention techniques on mitigation of fraud based on primary data on Likert scale items from the questionnaire.

The following proposed regression model was used;

$$Y= \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_1Z + \beta_5X_2Z + \mu i \quad \text{(Equation 2)}$$

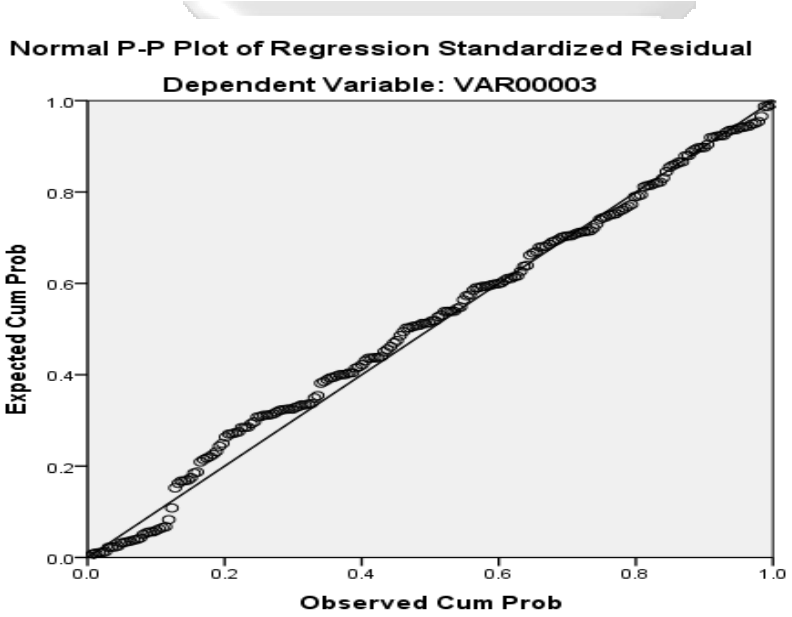
Whereby (Y) represented the level of fraud occurrence (which was based on statements measured on a Likert scale linked to corruption, financial statement fraud and asset misappropriation). On the other hand, (α) represented the constant term. The independent variables (measured on a Likert scale) were fraud prevention techniques (X_1) and detection techniques (X_2). Besides that, (X_3) represented the average annual turnover measured at a categorical scale to represent firm revenue. The data of firm revenue retrieved was converted into dichotomous variables in order for them to be interacted with the data of the anti-fraud techniques so that the moderating effect could be established. Aside from that, (X_1Z) represented interaction term between fraud prevention techniques and firm revenue. Moreover, (X_2Z) interaction term between fraud detection techniques and firm revenue additionally β_1, β_2, β_3, β_4 and β_5 represented Beta coefficients for which we were trying to predict the value of Y and (μi) was the error term.

Descriptive statistics was used to provide a synopsis and state of affairs of all the variables that were used in the study. Finally, virtually all the studies (Agathee & Ramen, 2017; Bierstaker et al., 2006; Zamzami, Nusa & Timur, 2016; Othman et al., 2015; Efiong, Inyang & Joshua, 2016; Sengur, 2012; Tunji et al., 2016; AKI, 2013; Rahman, 2014; Kamaliah et al., 2018; Omar & Abu-Bakara, 2012) employed descriptive analysis to establish the state of affairs in summary form of fraud prevention and detection techniques. The studies used means scores, standard deviations and ranking method to assess the level of perceived effectiveness of fraud detection and prevention techniques. This study employed the same methodology too. The data analysis measurements comprised of mean and standard deviation and variance. The data analysis was done by using the Statistical Package for Social Sciences (SPSS) software.

3.9.1 Regression Diagnostic Tests

Before conducting Multiple Linear Regression analysis, the relevant diagnostic tests were carried out to establish if the dataset was appropriate for the analysis. The first test was to establish if the relationship between the independent variables (X) and the dependent variable (Y) was linear. Thus, the Normal P-P plot was employed to reveal if the linearity assumption was met (Altman & Krzywinski, 2016). Figure 3.1 revealed a linear relationship between the independent variables (fraud prevention and detection techniques) and the dependent variable (prevalence of fraud occurrence).

Figure 3.1: Normal P-P Plot of the Linear Relationship between Fraud Prevention and Detection Techniques (X) and Prevalence Fraud (Y)



Source: Researcher (2019)

The second test was to establish if the independent variables were autonomous from each other. Thus, Collinearity diagnostic tests were performed to assess for Multicollinearity between the independent variables. Multicollinearity exists when there is a strong relationship between the independent variables. Multicollinearity is undesirable since the independent variables are supposed to be free from each other. Pallant (2007) posited that in order to know if there exists no case of serious Multicollinearity. The tolerance figures of all the independent variables have to be greater than 0.1 and their Variance Inflation Factor (VIF) figures have to be greater than 1

but less than 10. In the case of this study, based on the findings presented in Table 3.2 below, the independent variables posted tolerance values that were greater than 0.1 and VIF values that were more than 1 but less than 10.

Table 3.2: Collinearity Diagnostic Tests

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Fraud Prevention Techniques	0.412	2.429
	Fraud Detection Techniques	0.412	2.429
a. Dependent Variable: Fraud			

Source: Researcher (2019)

Durbin-Watson test was also employed to establish if the error terms were not auto-correlated in order for the independence assumption to be met. A value that is more than 1 and nearer to 2 means that the error terms are sovereign from each other (Field, 2013). As depicted in Table 3.3 the error terms were not serially correlated thus independent from each other since the Durbin-Watson test posted a value of 1.380.

Table 3.3: Durbin-Watson Test Results

Model Summary[b]
Durbin-Watson
1.380
a. Predictors: (Constant), Fraud Detection Techniques, Fraud Prevention Techniques
b. Dependent Variable: Level of Fraud Occurrence

Source: Researcher (2019)

Shapiro-Wilk's test was carried out to ascertain if the dataset was normally distributed. A key requirement before conducting regression analysis. The test was appropriate because the sample size of the study was small since it was less than 2000 (Laerd Statistics, 2018). For the dataset to be deemed to be normally distributed, then the Shapiro-Wilk test coefficients have to be statistically insignificant (p-value>0.05) (Laerd Statistics, 2018). Based on the results for normality test posted in Table 3.4 in the next page, the data was normally distributed since the Shapiro-Wilk test coefficients were statistically insignificant.

Table 3.4: Kolmogorov-Smirnov and Shapiro-Wilk Tests of Normality

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Fraud Prevention Techniques	0.214	216	0.138	0.863	216	0.285
Fraud Prevention Techniques	0.197	216	0.102	0.847	216	0.283
Level of Fraud Occurrence	0.151	216	0.099	0.940	216	0.298
a. Lilliefors Significance Correction						

Source: Researcher (2019)

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presented the presentations and interpretations of the data analysis findings. Descriptive statistical analysis comprising of frequencies and percentages were used to analyze and present the findings of the response rate and the demographic information of the respondents from Kenyan State Corporations in Nairobi County. Furthermore, descriptive statistical analysis comprising of mean and standard deviation was also employed to assess the level of perceived effectiveness of fraud detection and prevention techniques. Additionally it was used to establish the perceived level of the types of fraud occurring in Kenyan State Corporations. Factor analysis was employed to establish the fraud detection and prevention factors that accounted for a high percentage of variability in the dataset and if all the questionnaire statements could be retained for further analysis (correlation and regression analysis). Correlation analysis was applied to establish the relationship between fraud prevention and detection techniques and types of fraud occurring in Kenyan State Corporations. Multiple regression analysis was employed to establish the influence of fraud prevention and detection techniques on mitigation of fraud in Kenyan State Corporations and if the relationship was moderated by firm revenue.

4.2 Response Rate

The study managed to retrieve 216 completed questionnaires from the respondents out of the targeted 390. This represented a response rate of 55.4%, which was deemed sufficient since it accounted for more than 52.7% of the targeted sample size (Baruch & Holtom, 2008). The summary of the response rate was presented in Table 4.1.

Table 4.1: Response Rate

	Frequency	Percentage (%)
Responded	216	55.4
Failed to Respond	174	44.6
	390	**100**

Source: Researcher (2019)

4.3 Demographic Profile

The demographic attributes of the targeted respondents and that of the Kenyan State corporations which the study retrieved comprised of gender, job title, level of education, professional certification, years of work experience, annual average revenue, annual total asset size and name of state corporation (in order to ascertain the total number of the State corporations studied). The data analysis findings of the demographic characteristics studied were presented in Table 4.2.

Table 4.2: Demographic Data

Demographic Information of the Respondents		Frequency	Percentage (%)
Gender	Male	116	53.7
	Female	100	46.3
Job Title	Internal Auditor	73	33.8
	Accountant	77	35.6
	Manager	66	30.6
Level of Education	Bachelor Degree	124	57.4
	Higher Diploma	26	12.0
	Master Degree	48	22.2
	Doctorate Degree	18	8.3
Current Certification	CPA	119	55.1
	ACCA	48	22.2
	CISA	30	13.9
	CFE	19	8.8
	CFA	-	-
	Other	-	-
Years of Work Experience	Less than a year	11	5.1
	1-3 years	27	12.5
	3-5 years	68	31.5
	5-10 years	74	34.3
	More than 10 years	36	16.7
Firm Profile of Kenyan State Corporations			
Annual Average Revenue	Less than 250 million Kenyan Shillings	-	-
	250 - 500 million Kenyan Shillings	10	4.6
	500-750 million Kenyan Shillings	34	15.7
	750 million to 1billion Kenyan Shillings	132	61.1
	1 Billion Kenyan Shillings	40	18.5
Total Number of Kenyan State Corporations studied		36	55.9

Source: Researcher (2019)

In Table 4.2, in regard to gender, 53.7% of the aggregate respondents studied were men while 46.3% were female. With reference to the job title held; 33.8% of the respondents were internal auditors, 35.6% were accountants and 30.6% were managers (representing the financial directors and heads of internal audit). In addition, with respect to the level of education obtained; 57.4% of the respondents were Bachelor Degree holders, 12% had achieved Higher Diploma level, 22.2%

possessed a Master Degree and 8.3% had obtained a Doctorate Degree. Besides that, in regard to the current professional certification held; 55.1% of the respondents were CPA holders, 22.2% were ACCA holders, 13.9% were CISA holders and 8.8% were CFE holders.

Concerning the annual average revenue of the Kenyan State corporations; 4.6%of the studied State corporations earned between 250 and 500 million Kenyan Shillings, 15.7% earned between 500 and 750 million Kenyan Shillings, 66.1% of the total Kenyan State corporations studied earned between 750 million to 1billion Kenyan Shillings and 18.5% earned more than 1 billion Kenyan shillings.

4.4 Descriptive Analysis and Presentation

The subsections below present the findings and interpretations of the descriptive analysis results in regard to the perceived effectiveness of fraud prevention techniques, fraud detection techniques and types of fraud occurring in Kenyan State Corporations.

4.4.1 Perceptions of the Effectiveness of Fraud Prevention Techniques in Kenyan State Corporations

In order to establish the influence of fraud prevention techniques on mitigation of fraud in Kenyan State Corporations, descriptive statistical analysis was employed to establish the perceived level of fraud prevention techniques. This was in order understand the perceived level of each of the fraud prevention technique before conducting correlation and regression analysis to establish the influence of the techniques on mitigation of fraud. Descriptive statistics comprising of mean and standard deviation were employed to assess the perceived effectiveness of the techniques. A 5-point Likert scale ("Very Ineffective" = 1; "Ineffective" = 2; "Moderately Effective" = 3; "Effective" = 4; "Very Effective" = 5) was used in assessing the level of the perceived effectiveness of fraud prevention techniques. Table 4.3 in the next page presents the descriptive analysis results of the perceived effectiveness of fraud prevention techniques.

Table 4.3: Perceived Effectiveness of Fraud Prevention Techniques in Kenyan State Corporations

Perceived Effectiveness of Fraud Prevention Techniques		Mean (M)	Standard Deviation (SD)
1.	Fraud reporting policy.	4.907	0.473
2.	Fraud prevention and detection training programs.	4.486	0.602
3.	Email monitoring.	4.065	1.032
4.	Reference checks on employees.	3.977	1.147
5.	Staff rotation policy.	3.972	1.082
6.	Code of conduct.	3.931	1.074
7.	Transaction testing.	3.917	1.130
8.	Password protection.	3.894	1.126
9.	Bank reconciliations.	3.843	1.122
10.	Cash reviews.	3.810	1.010
11.	Organizational integrity plan.	3.662	1.295

Source: Researcher (2019)

In Table 4.3, the fraud prevention techniques perceived by the respondents to be very effective comprised of; fraud reporting policy (M = 4.907; SD = 0.473), fraud prevention and detection training programs (M =4.486; SD = 0.602) and email monitoring (M = 4.065; SD = 1.032). On the other hand, fraud prevention techniques perceived to be effective included; reference checks on employees (M = 3.977; SD = 1.147), staff rotation policy (M = 3.972; SD = 1.082),code of conduct (M = 3.931; SD = 1.074),transaction testing (M = 3.917; SD = 1.130),password protection (M = 3.894; SD = 1.126),bank reconciliations(M = 3.843; SD = 1.122) and cash reviews (M = 3.810; SD = 1.010). Finally, organizational integrity plan was perceived by the respondents to be moderately effective (M = 3.662; SD = 1.295).

The findings of the study agreed with the research outcomes of with Efiong, Inyang and Joshua (2016) and AKI (2013) which established that fraud prevention and detection training was perceived as effective in mitigating fraud. Conversely, the findings study conflicted with the research findings of Kao et al. (2018) and Omar and Abu Bakar (2012) which established that the technique was ineffective in preventing fraud. Besides that the findings of the study concurred with the research outcomes of Bierstaker, Brody and Pacini (2006) and Zamzami, Nusa and Timur (2016) which established that code of conduct was an effective fraud prevention technique. However, the research outcomes of this study disagreed with the findings of Omar and Abu Bakar (2012) which established code of conduct to be an ineffective fraud prevention

technique. On the other hand, the findings of this study concurred with the research outcomes of Othman et al. (2015), Sofia (2016),Kao et al. (2018), Agathee and Ramen (2017) and Bierstaker, Brody and Pacini (2006) which established that cash reviews, bank reconciliations and password protection were perceived to be effective fraud prevention techniques.

4.4.2 Perceptions of the Effectives of Fraud Detection Techniques in Kenyan State Corporations

In order to establish the influence of fraud detection techniques on mitigation of fraud in Kenyan State Corporations, descriptive statistical analysis was applied to establish the perceived level of fraud detection techniques. This was in order understand the perceived level of each of the fraud detection technique before conducting correlation and regression analysis to establish the influence of the techniques on mitigation of fraud. Descriptive statistics comprising of mean and standard deviation were used to assess the perceived effectiveness of the techniques. A 5-point Likert scale ("Very Ineffective" = 1; "Ineffective" = 2; "Moderately Effective" = 3; "Effective" = 4; "Very Effective" = 5) was employed to assess the level of the perceived effectiveness of fraud detection techniques. Table 4.4 presents the descriptive analysis results of the perceived effectiveness of fraud detection techniques.

Table 4.4: Perceived Effectiveness of Fraud Detection Techniques in Kenyan State Corporations

Perceived Effectiveness of Fraud Detection Techniques	Mean (M)	Standard Deviation (SD)
1. Forensic accountants.	4.782	0.590
2. Informal whistle blowing.	4.523	0.702
3. Fraud hotlines.	4.162	1.001
4. Continuous auditing.	4.107	1.071
5. Document review.	4.060	1.166
6. Data analysis.	4.042	1.080
7. Formal whistle blowing policy.	4.028	0.734
8. Data mining.	3.954	1.176
9. Fraud vulnerability review.	3.949	1.202
10. Discovery sampling.	3.944	1.148
12. Financial ratios.	3.926	1.131
13. Tips from staff.	3.833	1.205

Source: Researcher (2019)

In Table 4.4, most of the fraud detection techniques were perceived to be very effective in curbing fraud in Kenyan State Corporations. The techniques included; forensic accountants (M = 4.782; SD = 0.590), informal whistle blowing (M = 4.523; SD = 0.702), fraud hotlines (M = 4.162; SD = 1.001), continuous auditing (M = 4.107; SD = 1.071), document review (M = 4.060; SD = 1.166), data analysis (M = 4.042; SD = 1.080) and formal whistle blowing policy (M = 4.028; SD = 0.734). On the other hand the rest of the fraud detection techniques were perceived to be effective in curbing fraud. They comprised of; data mining (M = 3.954; SD = 1.176), fraud vulnerability review (M = 3.949; SD = 1.202), discovery sampling (M = 3.944; SD =1.148), financial ratios (M = 3.926; SD = 1.131) and tips from staff (M =3.833; SD =1.205).

The research findings agreed with findings of the survey conducted by Ernest and Young (2018) which revealed that bribery and corruption fraud were usually detected by whistle blowing. The findings of this study also agreed with the research outcomes of PwC (2018) which established that a huge percentage of fraud incidences such as asset misappropriation, procurement fraud and financial statement fraud were detected by tip off. Additionally, the findings of this study concurred with the research findings of Othman et al. (2015), Agathee and Ramen (2017), Rahman (2014), Efiong, Inyang and Joshua (2016), Tunji et al. (2016) and Bierstaker, Brody and Pacini (2006) who established that forensic accountants, fraud hotlines, continuous auditing, data mining, discovery sampling, data analysis and fraud vulnerability review were perceived as effective fraud detection techniques. Conversely, the findings of this study disagreed with the research outcomes of Kao et al. (2018) which established that fraud hotlines and fraud vulnerability reviews were perceived as ineffective fraud detection techniques.

4.4.3 Types of Fraud Occurring in Kenyan State Corporations

Descriptive statistical analysis was applied to establish the perceived level of the types of fraud occurring in Kenyan State Corporations. Descriptive statistics comprising of mean and standard deviation were used to assess the perceived level of the types of fraud occurring in Kenya. A 5-point Likert scale (“Never” = 1; “Rarely” = 2; “Undecided” = 3; “Always” = 4; “Often” = 5) was employed to assess the level of fraud occurrence. Table 4.5 presents the descriptive analysis results of the perceived level of types of fraud occurring in Kenyan State Corporations.

Table 4.5: Perceived Level of Types of Fraud Occurrence in Kenyan State Corporations

Types of Fraud Occurrence Level in Kenyan State Corporations	Mean (M)	Standard Deviation (SD)
Asset Misappropriation		
Inflated costs in regards to procurement of services.	2.741	1.339
False sales and shipping.	2.722	1.282
Multiple reimbursements.	2.694	1.394
Asset requisitions and transfers.	2.495	1.361
Billing schemes.	2.472	1.443
Overall Score	**2.625**	**1.364**
Financial Statement Fraud		
Providing misleading disclosures.	2.912	1.387
Fictitious revenue.	2.755	1.333
Improper asset valuations.	2.694	1.377
Overstated liabilities and expenses.	2.589	1.375
Overall Score	**2.738**	**1.368**
Corruption		
Invoice kickbacks.	2.833	1.298
Bid rigging.	2.745	1.210
Illegal gratuities.	2.732	1.280
Conflict of interest involving purchasing schemes and sales schemes.	2.273	1.502
Overall Score	**2.646**	**1.323**

Source: Researcher (2019)

In Table 4.5, generally all the types of fraud were perceived to have a low level of occurrence in generally all the studied Kenyan State Corporations. This is because all the asset misappropriation indicators posted an overall mean score of 2.625 and a standard deviation of 1.364, financial statement fraud posted an overall mean score of 2.738 and a standard deviation of 1.368 and corruption posted an overall mean score of 2.646 and a standard deviation of 1.323. Though the fraud indicators recorded a low level of occurrence financial statement fraud and corruption fraud recorded a higher level of occurrence when compared to asset misappropriation. Besides that, in regard to asset misappropriation indicators; inflated costs in regards to procurement of services and false sales and shipping recorded a higher level occurrence. Though in a weak fashion when compared with other asset misappropriation indicators justified by mean scores of 2.741 and 2.722 respectively and standard deviations of 1.339 and 1.282 respectively.

With reference to financial statement fraud, providing misleading disclosures, fictitious revenue and improper asset valuations recorded a high degree of occurrence. Though in a weak fashion

when compared with the rest of the financial statement fraud indicators justified by mean scores of 2.912, 2.755 and 2.694 and standard deviations of 1.387, 1.333 and 1.377. With respect to corruption; invoice kickbacks, bid rigging and illegal gratuities recorded a high level of occurrence. Though in a weak fashion when compared with the rest of corruption indicators with mean scores of 2.833, 2.745, 2.732 respectively and standard deviations of 1.298, 1.210 and 1.280 respectively.

4.5 Factor Analysis and Presentation

Factor analysis was employed to establish the fraud detection factors, fraud prevention factors and the types of fraud factors that accounted for a high percentage of variability in the dataset. Moreover, the factor analysis results also sought to establish if all the questionnaire statements linked to each of the aforementioned variables could be retained for further analysis. The findings of the factor analysis results in line with fraud prevention techniques, fraud detection techniques and types of fraud indicators were displayed an interpreted in the subsections below.

4.5.1 Derivation of Fraud Prevention Factor

The study conducted a sample adequacy tests to establish if the fraud prevention techniques' dataset was suitable for factor analysis. The tests comprised of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and the Bartlett's Test of Sphericity. Kaiser (1974) as cited by Omondi (2018) recommended that a KMO value of 0.5 and above indicates that the sample adequacy of the data is sufficient and satisfactory moreover the Bartlett's test of Sphericity should be greater than 150. These are the rules of thumb this study employed in establishing if the dataset in the scale of fraud prevention techniques was suitable for factor analysis. The results of the sample adequacy tests were displayed in Table 4.6.

Table 4.6: KMO and Barlet's Test Results for the Fraud Prevention Techniques' Dataset

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.852
Bartlett's Test of Sphericity	Approx. Chi-Square	1092.841
	Df	55
	Sig.	0.000

Source: Researcher (2019)

In Table 4.6, the KMO value of the entire fraud prevention techniques' dataset was 0.852. This actually meant that the data set was suitable for conducting factor analysis. Since the KMO surpassed the stipulated benchmark value of 0.5. Besides that, the Bartlett's Test of Sphericity posted a Chi-Square value of 1092.841 which was greater than 150 and was significant at 0.000 (since its *p*-value was less than 0.05). The results of the Bartlett's Test of Sphericity provided further justification that the dataset was satisfactory for factor analysis.

The study conducted Principal component analysis to pin point the fraud prevention factors that accounted for a high percentage of variance in the dataset. The components which posted eigenvalues of more than 1 were identified as the factors that accounted for a high percentage of variance in the dataset based on the rule of thumb stipulated by Fredrick (2013). The findings of total variance explained were presented in Table 4.7.

Table 4.7: Total Variance Explained by Fraud Prevention Factors

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.940	44.907	44.907	4.940	44.907	44.907	3.305	30.042	30.042
2	1.515	13.770	58.677	1.515	13.770	58.677	2.681	24.374	54.417
3	1.114	10.128	68.805	1.114	10.128	68.805	1.583	14.389	68.805
4	0.707	6.426	75.231						
5	0.591	5.370	80.601						
6	0.516	4.688	85.289						
7	0.467	4.246	89.536						
8	0.331	3.013	92.549						
9	0.303	2.752	95.301						
10	0.284	2.584	97.885						
11	0.233	2.115	100.000						

Extraction Method: Principal Component Analysis.

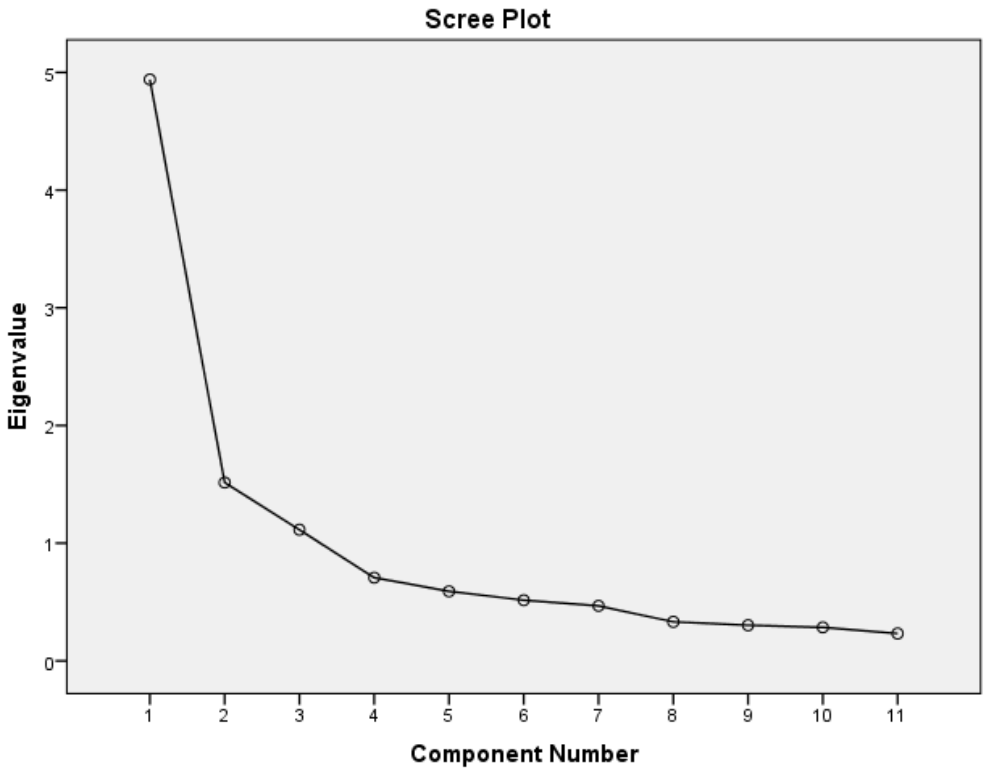
Source: Researcher (2019)

In Table 4.7, only three factors posted eigenvalues of more than one. The three factors comprised of component 1 that recorded an eigenvalue of 4.940, component 2 which recorded an eigenvalue of 1.515 and component 3 which recorded an eigenvalue of 1.114. The three components accounted for a total variance of 68.805% in the entire dataset. These three factors were retained for further analysis while the rest were discarded.

The results of the factor analysis in regard to the factors conceived together with their Eigen values representing the amount of variance explained in the entire dataset were summarized in

the Scree plot portrayed in Figure 4.1. The Scree plot displayed the relationship between the eigenvalues and fraud prevention factors (represented by component numbers). The factors that were retained in the Scree plot represented those after the point where the Scree plot started to take an elbow shape. In Figure 4.1, the Scree plot started to assume an elbow contour from component 4 to 1. Thus, Components 1, 2 and 3 were preserved for further analysis.

Figure 4.1 Scree plot showing the Relationship between Eigenvalues and Fraud Prevention Factors



Source: Researcher (2019)

The study conducted a rotated component variance based on Varimax with Kaiser Normalization method to ascertain the fraud prevention techniques that were grouped in factor 1, 2 and 3. Table 4.8 portrayed the findings of the rotated component matrix. The rule of thumb used was that in order for a fraud prevention technique to be identified as part of a group in a certain factor then it had to possess a factor loading of more than 0.4.

Table 4.8: Rotated Component Matrix for Fraud Prevention Factors

Rotated Component Matrix[a]				
Fraud Prevention Factors		Component		
		1	2	3
1.	Organizational integrity plan.	**0.633**	0.267	-0.049
2.	Fraud prevention and detection training programs.	0.119	-0.003	**0.846**
3.	Code of conduct.	**0.693**	0.296	0.068
4.	Password protection.	**0.883**	0.128	0.065
5.	Reference checks on employees.	**0.763**	0.310	0.182
6.	Cash reviews.	**0.789**	0.275	0.032
7.	Fraud reporting policy.	-0.003	0.109	**0.869**
8.	Bank reconciliations.	0.431	**0.658**	-0.154
9.	Staff rotation policy.	0.245	**0.837**	0.040
10.	Email monitoring.	0.196	**0.842**	0.101
11.	Transaction testing.	0.373	**0.693**	0.173
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				

Source: Researcher (2019)

In Table 4.8, factor 1 (component 1) comprised of; organizational integrity plan (0.633), code of conduct (0.693), password protection (0.883), reference checks on employees (0.763) and cash reviews (0.789). These fraud prevention techniques loaded in factor 1 could have been understood by the respondents as traditional fraud prevention policies put in place to deter fraud occurrence. Since they represented the most common traditional fraud prevention techniques employed to curb fraud. Fraud prevention techniques loaded in factor 2 (component 2) included; bank reconciliations (0.658), staff rotation policy (0.837), email monitoring (0.842) and transaction testing (0.693).

The techniques loaded in factor 2 could have been understood by the respondents as internal control systems put in place to deter fraud from happening. Since all of them were linked to internal control measures that are usually used for mitigating fraud and errors. Factor 3 (component 3) comprised of; fraud prevention and detection training programs (0.846) and fraud reporting policy (0.869). These techniques could have understood by the respondents as fraud risk management programs or policies employed to prevent fraud from occurring. Consequently, all the fraud prevention techniques that were loaded in the three factors which explained a high percentage of variance in the dataset were retained for further analysis.

4.5.2 Derivation of Fraud Detection Factor

The study conducted a sample adequacy tests to establish if the dataset of the fraud detection techniques was suitable for factor analysis. The tests comprised of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and the Bartlett's Test of Sphericity. The results of the sample adequacy tests were displayed in Table 4.9. The findings revealed that the KMO value of the entire fraud detection techniques' dataset was 0.828. This actually meant that the data set was suitable for conducting factor analysis. Since the KMO surpassed the stipulated benchmark value of 0.5. Besides that, the Bartlett's Test of Sphericity posted a Chi-Square value of 1031.900 which was greater than 150 and was significant at 0.000 (since its *p*-value was less than 0.05). The results of the Bartlett's Test of Sphericity provided further justification that the dataset was satisfactory for factor analysis.

Table 4.9: KMO and Barlet's Test Results for the Fraud Detection Techniques' Dataset

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.828
Bartlett's Test of Sphericity	Approx. Chi-Square	1031.900
	Df	66
	Sig.	0.000

Source: Researcher (2019)

The study conducted Principal component analysis to pinpoint the fraud detection factors that accounted for a high percentage of variance in the dataset. The components which posted eigenvalues of more than 1 were identified as the factors that accounted for a high percentage of variance in the dataset based on the rule of thumb stipulated by Fredrick (2013). The findings of total variance explained were presented in Table 4.10.

Table 4.10: Total Variance Explained by Fraud Detection Factors

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.755	39.626	39.626	4.755	39.626	39.626	3.071	25.593	25.593
2	1.663	13.861	53.487	1.663	13.861	53.487	2.562	21.346	46.939
3	1.055	8.792	62.279	1.055	8.792	62.279	1.841	15.340	62.279
4	.920	7.663	69.942						
5	.690	5.749	75.691						
6	.653	5.442	81.133						
7	.583	4.857	85.990						
8	.474	3.951	89.941						
9	.397	3.308	93.249						
10	.299	2.492	95.741						
11	.272	2.269	98.010						
12	.239	1.990	100.000						

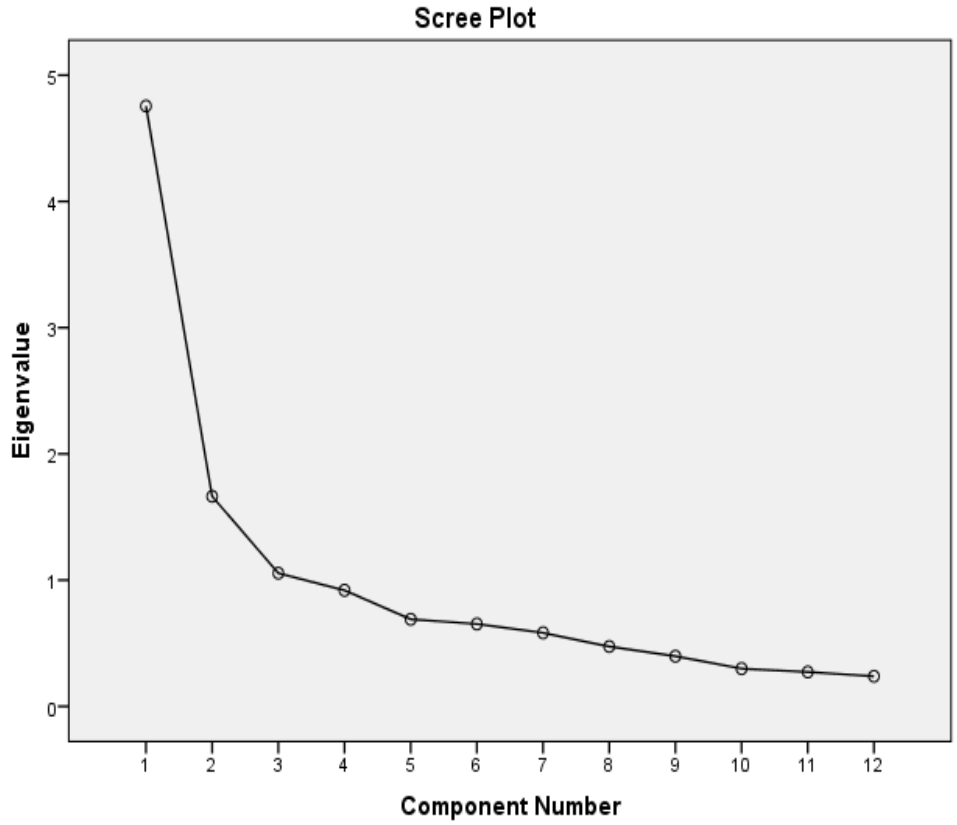
Extraction Method: Principal Component Analysis.

Source: Researcher (2019)

In Table 4.10, only three factors posted eigenvalues of more than one. The three factors comprised of component 1 that recorded an eigenvalue of 4.755, component 2 which recorded an eigenvalue of 1.663 and component 3 which recorded an eigenvalue of 1.055. The three components accounted for a total variance of 62.279% in the entire dataset. These three factors were retained for further analysis while the rest were discarded.

The results of the factor analysis in regard to the factors conceived together with their Eigen values representing the amount of variance explained in the entire dataset were summarized in the Scree plot presented in Figure 4.2. The Scree plot showed the relationship between the eigenvalues and fraud detection factors (represented by component numbers). The factors that were retained in the Scree plot represented those after the point where the Scree plot started to take an elbow shape. In Figure 4.2, the Scree plot started to assume an elbow contour from component 4 to 1. Thus, Components 1, 2 and 3 were preserved for further analysis.

Figure 4.2: Scree plot showing the Relationship between Eigenvalues and Fraud Detection Factors



Source: Researcher (2019)

In addition, the study conducted a rotated component variance based on Varimax with Kaiser Normalization method to ascertain the fraud detection techniques that were grouped in factor 1, 2 and 3. Table 4.1 presented the findings of the rotated component matrix. The rule of thumb used was that in order for a fraud detection technique to be identified as part of a group in a certain factor then it had to possess a factor loading of more than 0.4.

Table 4.11: Rotated Component Matrix for Fraud Detection Factors

Rotated Component Matrix[a]				
Fraud Detection Factors		Component		
		1	2	3
1.	Informal whistle blowing.	0.078	-0.410	**0.644**
2.	Formal whistle blowing policy.	-0.299	0.264	**0.615**
3.	Forensic accountants.	0.118	0.316	**0.694**
4.	Document review.	**0.796**	0.187	0.095
5.	Tips from staff.	**0.772**	0.279	-0.001
6.	Fraud vulnerability review.	**0.763**	0.366	0.042
7.	Data mining.	**0.738**	0.335	0.175
8.	Fraud hotlines.	0.320	0.024	**0.694**
9.	Continuous auditing.	0.328	**0.649**	0.020
10.	Discovery sampling.	0.343	**0.706**	0.127
11.	Data analysis.	0.259	**0.792**	0.095
12.	Financial ratios.	0.458	**0.565**	0.127

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Source: Researcher (2019)

In Table 4.11 the fraud detection techniques that were loaded in factor 1 (component 1) comprised of document review (0.796), tips from staff (0.772), fraud vulnerability review (0.763) and data mining (0.738). The techniques in factor 1 were grouped as fraud detection techniques which are commonly used by the internal audit or the external auditors to unravel a fraudulent action that is suspected to have occurred. Besides that the fraud detection techniques that were loaded in factor 2 (component 2) included; continuous auditing (0.649), discovery sampling (0.706), data analysis (0.792), financial ratios (0.565). These techniques loaded in factor 2 were grouped as anti-fraud technology that is usually employed by forensic accountants/auditors in unraveling fraud and in quantifying the fraud losses.

Finally, the fraud detection techniques that were loaded in factor 3 (component3) comprised of; informal whistle blowing (0.644), formal whistle blowing policy (0.615) and forensic accountants (0.694). The techniques loaded in factor 3 were grouped as fraud detection techniques that not only unravel the fraud which has occurred but the perpetrators behind the fraudulent action. Consequently, all the fraud detection techniques that were loaded in the three factors which explained a high percentage of variance in the dataset were retained for further analysis.

4.5.3 Derivation of Fraud Factor

The study conducted a sample adequacy tests to establish if the dataset of the types fraud indicators was suitable for factor analysis. The tests comprised of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and the Bartlett's Test of Sphericity. The results of the sample adequacy tests were displayed in Table 4.12. The findings revealed that the KMO value of the entire dataset of types of fraud indicators was 0.789. This actually meant that the data set was suitable for conducting factor analysis. Since the KMO surpassed the stipulated benchmark value of 0.5. Besides that, the Bartlett's Test of Sphericity posted a Chi-Square value of 1345.687 which was greater than 150 and was significant at 0.000 (since its *p*-value was less than 0.05). The results of the Bartlett's Test of Sphericity provided further justification that the dataset was satisfactory for factor analysis.

Table 4.12: KMO and Barlet's Test Results for the Dataset of the Types of Fraud Indicators

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.789
Bartlett's Test of Sphericity	Approx. Chi-Square	1345.687
	df	78
	Sig.	0.000

Source: Researcher (2019)

The study conducted Principal component analysis to pinpoint the fraud factors that accounted for a high percentage of variance in the dataset. The components which posted eigenvalues of more than 1 were identified as the factors that accounted for a high percentage of variance in the dataset based on the rule of thumb stipulated by Fredrick (2013). The findings of total variance explained were presented in Table 4.13.

Table 4.13: Total Variance Explained by Fraud Factors

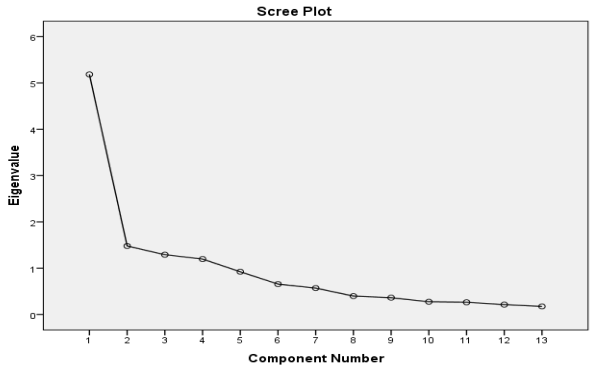
Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.185	39.886	39.886	5.185	39.886	39.886	2.639	20.298	20.298
2	1.480	11.385	51.270	1.480	11.385	51.270	2.520	19.388	39.686
3	1.292	9.941	61.212	1.292	9.941	61.212	2.371	18.242	57.928
4	1.197	9.211	70.423	1.197	9.211	70.423	1.624	12.495	70.423
5	0.923	7.103	77.526						
6	0.658	5.058	82.584						
7	0.571	4.395	86.979						
8	0.399	3.067	90.046						
9	0.363	2.796	92.842						
10	0.276	2.125	94.967						
11	0.265	2.037	97.004						
12	0.214	1.648	98.652						
13	0.175	1.348	100.000						

Extraction Method: Principal Component Analysis.

Source: Researcher (2019)

In Table 4.13, only four factors posted eigenvalues of more than one. The four factors comprised of component 1 that recorded an eigenvalue of 5.185, component 2 which recorded an eigenvalue of 1.480, component 3 which recorded an eigenvalue of1.292 and component 4 which posted an eigenvalue of1.197. The four components accounted for a total variance of 70.423%in the entire dataset. These four factors were retained for further analysis while the rest were discarded. The Scree plot showed the relationship between the eigenvalues and the fraud factors (represented by component numbers). The factors that were retained in the Scree plot represented those after the point where the Scree plot started to take an elbow shape. In Figure 4.3, the Scree plot started to assume an elbow contour from component 5 to 1. Thus, Components 1, 2, 3 and 4 were preserved for further analysis.

Figure 4.3: Scree plot showing the Relationship between Eigenvalues and the Fraud Factors



Source: Researcher (2019)

Besides that, the study conducted a rotated component variance based on Varimax with Kaiser Normalization method to ascertain the types of fraud that were grouped in factor 1, 2, 3 and 4. Table 4.14 presented the findings of the rotated component matrix. The rule of thumb used was that in order for a type of fraud indicator to be identified as part of a group in a certain factor then it had to possess a factor loading of more than 0.4.

Table 4.14: Rotated Component Matrix of the Fraud Factors

Rotated Component Matrix[a]

		Component			
		1	2	3	4
1.	Billing schemes.	**0.746**	0.095	0.005	0.323
2.	Asset requisitions and transfers.	**0.856**	0.151	0.080	0.201
3.	Multiple reimbursements.	**0.819**	0.275	0.208	-0.022
4.	False sales and shipping.	**0.567**	0.275	0.523	-0.153
5.	Inflated costs in regards to procurement of services.	0.046	0.207	**0.871**	0.056
6.	Improper asset valuations.	0.099	0.045	**0.813**	0.341
7.	Overstated liabilities and expenses.	0.305	0.010	0.438	**0.687**
8.	Fictitious revenue	0.129	0.301	0.064	**0.836**
9.	Providing misleading disclosures	-0.029	**0.727**	0.038	0.387
10.	Invoice kickbacks	0.192	**0.803**	0.152	0.090
11.	Bid rigging	0.359	**0.723**	0.118	0.006
12.	Illegal gratuities	0.204	**0.553**	0.416	0.083
13.	Conflict of interest involving purchasing schemes and sales schemes	0.162	**0.448**	0.469	0.039

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Source: Researcher (2019)

The first four fraud indicators namely; billing schemes, asset requisitions and transfers, multiple reimbursements and false sales and shipping were loaded in component 1 (factor 1). They posted factor loading values of 0.746, 0.856, 0.819 and 0.567 respectively**.** These fraud indicators were linked to asset misappropriation. The fraud indicators loaded in component 2 (factor 2) comprised of; providing misleading disclosures (0.727), invoice kickbacks (0.803), bid rigging (0.723), illegal gratuities (0.553) and conflict of interest involving purchasing schemes and sales schemes (0.448). These fraud indicators were linked to corruption. The fraud indicators loaded in component 3 included; inflated costs in regards to procurement of services (0.871) and improper asset valuations (0.813).

These fraud indicators were linked to asset misappropriation that is in a way justified in financial reports in order to account to every single shilling lost in the fraud action hence consequently leading to financial statement fraud. The fraud indicators loaded in component 4 comprised of; overstated liabilities and expenses (0.687) and fictitious revenue (0.836) all of which were exclusively linked to financial statement fraud. Therefore, all the fraud indicators that were loaded in the four factors which explained a high percentage of variance in the dataset were retained for further analysis.

4.6 Multiple Linear Regression Analysis and Presentation

The study employed Multiple Linear Regression analysis model to establish the influence of fraud prevention and detection techniques on mitigation of fraud in Kenyan State Corporations. The findings of the regression analysis were portrayed in Table 4.15 in the following page. In Table 4.15, the first section of the table presented the model summary results. In the model summary the R-value was 0.758 which indicated that 75.8% of the dataset was explained by the regression model. This meant that the model had a perfect goodness of fit and a high predictive power.

The goodness of fit of the model was also justified by the standard error of estimate value that posted a figure of 0.55713. The value was considerably low which indicated that the data was very close to the regression line hence signifying a perfect goodness of fit of the model. The R-square value was 0.575 which meant that 57.5% of the variability on level of fraud occurrence was explained by fraud detection and prevention techniques.

Table 4.15: Regression Analysis Results of the Influence of Fraud Prevention and Detection Techniques on Fraud Mitigation in Kenyan State Corporations

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.758[a]	0.575	0.571	0.55713

a. Predictors: (Constant), Fraud Detection Techniques, Fraud Prevention Techniques

b. Dependent Variable: Fraud

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.299	2	44.649	143.848	0.000[b]
	Residual	66.114	213	0.310		
	Total	155.412	215			

a. Dependent Variable: Fraud

b. Predictors: (Constant), Fraud Detection Techniques, Fraud Prevention Techniques

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6.783	0.255		26.561	0.000		
	Fraud Prevention Techniques	-0.688	0.086	-0.557	-7.995	0.000	0.412	2.429
	Fraud Detection Techniques	-0.325	0.094	-0.241	-3.467	0.001	0.412	2.429

a. Dependent Variable: Fraud

Source: Researcher (2019)

In addition, the Adjusted R-square value of 0.571 meant that 57.1% of the variability on the level of fraud occurrence was explained by the variables that substantially influenced it. The Adjusted R-square value was closer to the R-Square. Hence it meant that all the predictor variables, comprising of fraud prevention and detection techniques substantially explained the variability on the level of fraud occurrence.

The second section of Table 4.15 presented the Analysis of Variance (ANOVA) findings. The Analysis of Variance was conducted to establish if the R-square value was statistically significant. That is if the variance on the level of fraud occurrence was significantly explained by fraud prevention and detection techniques. The rule of thumb employed was that the *p*-value has to be less than 0.05 but more than zero. Based on the ANOVA findings, the study established that the variability on the level of fraud occurrence was significantly explained by fraud prevention and detection techniques. This is because the p-value of the ANOVA was 0.000^{b}which was less than 0.05 and closer to zero.

The third section of Table 4.15 presented the regression co-efficient, which sought to establish how each of the predictor variable influenced the dependent variable and if the influence was significant.

Additionally, based on the results presented in the regression co-efficients' section, the following regression equation was developed and proposed;

$Y = 6.783 – 0.688X_1 – 0.325X_2$

Whereby;

Y = Level of Fraud Occurrence

X_1= Fraud Prevention Techniques

X_2= Fraud Detection Techniques

The value of the constant term was 6.783 which meant that fraud prevention and detection values were zero then the level of fraud occurrence will be 6.783. This was a considerably large figure, since it meant that if there is lack of fraud prevention and detection techniques then the level of fraud occurrence will be 678.3%. The findings of the regression co-efficients in regards X_1 (Fraud Prevention Techniques) and X_2 (Fraud Detection Techniques) are explained in line with the objectives of this study in the subsequent subsections.

4.6.1 Influence of Fraud Prevention Techniques on Prevalence of Fraud in Kenyan State Corporations, Nairobi County

In line with the first specific objective of the study that sought to establish the influence of fraud prevention techniques on prevalence of fraud in Kenyan State Corporations, Nairobi County. The findings of the X_1 regression co-efficient revealed that a unit increase of fraud prevention

techniques subsequently led to the decrease of the level of fraud occurrence in Kenyan State Corporations by 68.8%. Moreover, the negative influence of the fraud prevention techniques on the level of fraud occurrence was statistically significant (*p*-value = 0.000<0.05). Therefore, this meant that fraud prevention techniques have a significant influence on the mitigation of fraud in Kenyan State Corporations. Consequently, we accept our first hypothesis (H_1) that fraud prevention techniques have a statistically significant influence on fraud in Kenyan State Corporations.

4.6.2 Influence of Fraud Detection Techniques on Prevalence of Fraud in Kenyan State Corporations, Nairobi County

In line with the second specific objective of the study that sought to establish the influence of fraud detection techniques on prevalence of fraud in Kenyan State Corporation, Nairobi County. The findings of the X_2 regression co-efficient revealed that a unit increase of fraud detection techniques consequently led to the decrease of the level of fraud occurrence in Kenyan State Corporations by 32.5%. Furthermore, the negative influence of the fraud detection techniques on the level of fraud occurrence was statistically significant (*p*-value = 0.001<0.05).Thus this meant that fraud detection techniques have a significant influence on the mitigation of fraud in Kenyan State Corporations. Therefore, we accept our second hypothesis (H_2) that fraud detection techniques have a statistically significant influence on fraud in Kenyan State Corporations.

4.6.3 Moderating Effect of Firm Revenue on the Influence of Fraud Prevention Techniques on Prevalence of Fraud in Kenyan State Corporations

The study also conducted a Multiple Linear Regression analysis to determine the moderating effect of firm revenue on the relationship between the effectiveness of fraud prevention techniques and level of fraud occurrences in Kenyan State Corporations. The findings of the regression analysis was displayed in Table 4.16 in the next page. In the first section of Table 4.16 that represented the model summary.

The regression analysis results revealed that the variance on the level of fraud occurrence would escalate from 55.1% (R-Square = 0.551) to 57.9% (R-Square = 0.579) when firm size is added as a moderator variable. Consequently, firm revenue accounted for the 2.9% additional change on the variability in the level of fraud occurrence besides the 55.1% variance explained by the effectiveness of fraud prevention techniques.

Table 4.16: Regression Analysis Results of the Moderating Effect of Firm Revenue on the Relationship between the Effectiveness of Fraud Prevention Techniques and the Level of Fraud Occurrence in Kenyan State Corporations

Model Summary[c]

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.742[a]	0.551	0.548	0.57130	0.551	262.172	1	214	0.000
2	0.761[b]	0.579	0.576	0.55392	0.029	14.638	1	213	0.000

a. Predictors: (Constant), Fraud Prevention Techniques

b. Predictors: (Constant), Fraud Prevention Techniques, Interaction term between Fraud Prevention and Firm Revenue

c. Dependent Variable: Fraud

ANOVA[a]

Model		Sum of Squares	df	Mean Squares	F	Sig.
1	Regression	85.567	1	85.567	262.172	0.000[b]
	Residual	69.845	214	0.326		
	Total	155.412	215			
2	Regression	90.058	2	45.029	146.759	0.000[c]
	Residual	65.354	213	0.307		
	Total	155.412	215			

a. Dependent Variable: Fraud

b. Predictors: (Constant), Fraud Prevention Techniques

c. Predictors: (Constant), Fraud Prevention Techniques, Interaction term between Fraud Prevention and Firm Revenue

Co-efficients[a]

Model		Unstandardized Co-efficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	6.374	0.232		27.441	0.000	5.916	6.832		
	Fraud Prevention Techniques	-0.917	0.057	-0.742	-16.192	0.000	-1.029	-0.806	1.000	1.000
2	(Constant)	5.084	0.406		12.535	0.000	4.284	5.883		
	Fraud Prevention Techniques	-0.435	0.138	-0.352	-3.160	0.002	-0.706	-0.164	0.159	6.273
	Fraud Prevention moderated Firm Revenue	-0.196	0.051	-0.426	-3.826	0.000	-0.296	-0.095	0.159	6.273

a. Dependent Variable: Fraud

Source: Researcher (2019)

Moreover, the additional variance on the level of fraud occurrence accounted by firm revenue was statistically significant (*p*-value = 0.000^c <0.05). This was based on the ANOVA results posted in the second section of Table 4.16 in model 2. Additionally, based on the third section of Table 4.16. A unit increase of fraud prevention techniques would significantly lead to the reduction of the level of fraud occurrences by 19.6% (β = -0.196, t = -3.826, p-value = 0.000<0.05) only if firm size increases by a unit. Hence, firm size significantly moderates the influence of fraud prevention techniques on the mitigation of fraud in Kenyan State Corporations. Based on the results of the regression co-efficients summarized in the third section of Table 4.16 in the previous page. The study posited the following regression equation portraying the moderating effect of firm size on the influence of fraud prevention techniques on the mitigation of fraud in Kenyan State Corporations;

$Y = 6.374 – 0.917X_1$

$Y = 5.084 – 0.435\ X_1 – 0.196\ X_1Z$

Whereby; Y = Level of Fraud Occurrence; X_1 = Fraud Prevention Techniques; Z = Firm Revenue; X_1Z = Interaction term between Fraud Prevention Techniques and Firm Revenue.

4.6.4 Moderating Effect of Firm Size on the Influence of Fraud Detection Techniques on Prevalence of Fraud in Kenyan State Corporations

The study also conducted a Multiple Linear Regression analysis to establish the moderating effect of firm revenue on the association between the effectiveness of fraud detection techniques and level of fraud occurrences in Kenyan State Corporations. The regression analysis results were displayed in Table 4.17 in the next page. In the first section of Table 4.17 that represented the model summary. The regression analysis results showed that the variance on the level of fraud occurrence would escalate from 44.7% (R-Square = 0.447) to 55.7% (R-Square = 0.557) when firm size is added as a moderator variable. Consequently, firm revenue accounted for the 11% additional change on the variability in the level of fraud occurrence besides the 44.7% variance explained by the effectiveness of fraud detection techniques. Moreover, the additional variance on the level of fraud occurrence accounted by firm revenue was statistically significant (*p*-value = 0.000^c <0.05). This was based on the ANOVA results posted in the second section of Table 4.17 in model 2. Additionally, based on the third section of Table 4.17 in the next page. A unit increase of fraud detection techniques would significantly lead to the reduction of the level

of fraud occurrences by 29.8% (β = -0.298, t = -7.278, p-value = 0.000<0.05) only if firm revenue increases by a unit.

Table 4.17: Regression Analysis Results of the Moderating Effect of Firm Size on the Relationship between the Effectiveness of Fraud Detection Techniques and the Level of Fraud Occurrence in Kenyan State Corporations

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.669[a]	0.447	0.444	0.63376	0.447	172.929	1	214	0.000
2	0.746[b]	0.557	0.553	0.56849	0.110	52.965	1	213	0.000

a. Predictors: (Constant), Fraud Detection Techniques

b. Predictors: (Constant), Fraud Detection Techniques, Interaction term between Fraud Detection and Firm Size

c. Dependent Variable: Fraud

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.458	1	69.458	172.929	0.000[b]
	Residual	85.954	214	0.402		
	Total	155.412	215			
2	Regression	86.575	2	43.287	133.943	0.000[c]
	Residual	68.837	213	0.323		
	Total	155.412	215			

a. Dependent Variable: Fraud

b. Predictors: (Constant), Fraud Detection Techniques

c. Predictors: (Constant), Fraud Detection Techniques, Interaction term between Fraud Detection and Firm Revenue

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	6.360	0.284		22.379	0.000	5.800	6.920		
	Fraud Detection Techniques	-0.899	0.068	-0.669	-13.150	0.000	-1.034	-0.764	1.000	1.000
2	(Constant)	4.275	0.383		11.148	0.000	3.519	5.031		
	Fraud Detection Techniques	-0.146	0.120	-0.108	-1.212	0.227	-0.383	0.091	0.260	3.848
	Fraud Detection moderated Firm Revenue	-0.298	0.041	-0.651	-7.278	0.000	-0.378	-0.217	0.260	3.848

a. Dependent Variable: Fraud Occurrence

Source: Researcher (2019)

Hence, firm revenue significantly moderates the influence of fraud detection techniques on the mitigation of fraud in Kenyan State Corporations. Moreover, the moderation influence is monumental on the relationship between the effectiveness of fraud detection techniques and the level of fraud occurrences when compared to the relationship between the effectiveness of fraud detection techniques and the level of fraud occurrences.

Based on the results of the regression co-efficients summarized in the third section of Table 4.17. The study posited the following regression equation showing the moderating effect of firm size on the influence of fraud detection techniques on the mitigation of fraud in Kenyan State Corporations;

$Y = 6.360 – 0.899X_1$

$Y = 4.275 – 0.146\ X_1 – 0.298\ X_1Z$

Whereby; Y = Level of Fraud Occurrence; X_1 = Fraud Detection Techniques; Z = Firm Size; X_1Z = Interaction term between Fraud Detection Techniques and Firm Size.

4.7 Logistic Regression Analysis and Presentation

Moreover the study employed the binomial logistic regression model to analyze the relationship between the fraud prevention and detection techniques (based on primary data retrieved) and fraud represented by proxy of fraud based on audit queries raised the Auditor General financial reports of State corporations (based on secondary data retrieved). The regression model was suitable for this study since the dependent variable was measured on a dichotomous scale (proxy for fraud firm = 1, proxy for non-fraud firm = 0) and the independent variables were measured on a categorical ordinal scale. The findings of the binomial logistic regression analysis were presented in Table 4.19. Generally, the fraud level was not high in Kenyan state corporations since only 10 out of 36 firms had audit queries raised on their financial reports.

Based on the first section of Table 4.18 that represented the model summary the findings revealed that the model was statistically insignificant because the final solution could not be found after attaining the maximum iterations. On the other hand, the model had managed to explain 100% (Nagelkerke R Square = 1) of the variance in fraud proxy and correctly classified 100% of the cases as presented in the second section of Table 4.18. Additionally, based on the third section of Table 4.18, fraud prevention techniques, fraud detection techniques and firm revenue did not add any significance value to the model. This was because fraud prevention

techniques posted a *p*-value of 0.999>0.05, fraud detection techniques posted a *p*-value of 1>0.05 and firm size posted a *p*-value of 1>0.05.

Table 4.18: Logistic Regression Analysis and Presentation

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	0.000[a]	0.693	1.000

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Classification Table[a]

Observed			Predicted		
			Fraud Proxy		Percentage Correct
			0.00	1.00	
Step 1	Fraud Proxy	0.00	26	0	100.0
		1.00	0	10	100.0
	Overall Percentage				100.0

a. The cut value is 0.500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1[a]	Fraud Prevention Techniques	-29.180	37087.790	0.000	1	0.999	0.000	0.000	
	Fraud Detection Techniques	-9.454	69761.658	0.000	1	1.000	0.000	0.000	
	Firm Revenue	5.571	21162.133	0.000	1	1.000	262.695	0.000	
	Constant	112.617	78472.743	0.000	1	0.999	8.1095169774381E+48		

a. Variable (s) entered on step 1: Fraud Prevention Techniques, Fraud Detection Techniques, and Firm Size.

Source: Researcher (2019)

4.9 Summary of Research Findings

The main purpose of the study was addressed by three specific objectives. The first specific objective of this study was to establish the influence of fraud prevention techniques on fraud in Kenyan state corporations, Nairobi County. Besides, the second specific objective of the study was to establish the influence of fraud detection techniques on fraud in Kenyan state corporations, Nairobi County. Finally, the third objective was to establish the moderating effect of firm revenue on the influence of fraud prevention and detection techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County. Multiple Linear and Logistic Regression analysis were employed to establish the influence of fraud prevention and detection techniques on fraud in Kenyan State Corporations in Nairobi County and if the influence was controlled by firm revenue. Multiple Linear Regression analysis revealed that fraud prevention and detection techniques significantly mitigates fraud in Kenyan State Corporations, Nairobi County. Additionally, the results ascertained that firm revenue significantly controls the influence of fraud prevention and detection techniques on the mitigation of fraud in Kenyan State Corporations, Nairobi County. The findings of the logistic regression analysis posted insignificant results.

CHAPTER FIVE

SUMMARY OF DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presented a recap the research purpose and process of the study. It also presented a summary of the discussion of the research findings in line with the specific objectives of the study and conclusions made. Moreover it also presented the recommendations based on the research findings to the management and policy makers of Kenyan State Corporations and contribution to knowledge. Finally, it also presented the limitations and suggestions for future research.

5.2 Research Purpose and Process

The major aim of this study was to establish the influence of fraud prevention and detection techniques on fraud and moderating effect of firm revenue in Kenyan state corporations. The main purpose of the study was addressed by two specific objectives. The first specific objective of this study was to establish the influence of fraud prevention techniques on fraud in Kenyan state corporations, Nairobi County. Besides, the second specific objective of the study was to establish the influence of fraud detection techniques on fraud in Kenyan state corporations, Nairobi County. Finally, the third objective was to establish the moderating effect of firm revenue on the influence of fraud prevention and detection techniques on the prevalence of fraud in Kenyan state corporations, Nairobi County. The research process involved writing a research project in line with the specified objectives and the establishment of knowledge gaps to be bridged.

Primary data was collected through questionnaires and secondary data was retrieved from the Auditor General Audited Annual Reports of the State Corporations. The data was analyzed using the SPSS software. The data analysis models used were descriptive analysis comprising of mean and standard deviation, factor analysis, Multiple and Logistic Regression analysis. The findings of the logistic regression analysis was not used for discussion in this chapter since the model summary posted insignificant results. This is because its model summary was statistically insignificant. Hence the findings portraying the influence of fraud prevention and detection techniques on fraud could not statistically be relied on for further analysis and interpretation.

Additionally fraud prevention techniques posted a *p*-value of 0.999>0.05, fraud detection techniques posted a *p*-value of 1>0.05 and firm size posted a *p*-value of 1>0.05 on their influence on fraud based on the proxy fraud information retrieved from secondary sources.

The final output were displayed in Tables. The discussions of the findings and recommendations were subsequently made in this chapter.

5.3 Discussion of Research Findings

The subsections presented in the next page discussed the research findings of this study in line with the specific objectives aforementioned above.

5.3.1 Influence of Fraud Prevention Techniques on Prevalence of Fraud in Kenyan State Corporations

The descriptive analysis results revealed that generally all the fraud prevention techniques were perceived to be effective in deterring fraud in Kenyan State Corporations. These techniques comprised of; fraud prevention and detection training programs, email monitoring, reference checks on employees, staff rotation policy, code of conduct, transaction testing, password protection, bank reconciliations and cash reviews. The findings of the study agreed with Efiong, Inyang and Joshua (2016) and AKI (2013) who established that fraud prevention and detection training was perceived as effective in deterring fraud. This meant that fraud prevention and detection training programs creates awareness about fraud to the employees of Kenyan State Corporations and provides them with the relevant knowledge on ways to stop it from happening. Conversely, the findings study conflicted with the research findings of Kao et al. (2018) and Omar and Abu Bakar (2012) which established that the technique was ineffective in preventing fraud. Besides that the findings of the study concurred with the research outcomes of Bierstaker et al. (2006) and Zamzami, Nusa and Timur (2016) which established that code of conduct was an effective fraud prevention technique.

However, the research outcomes of this study disagreed with the findings of Omar and Abu Bakar (2012) which established code of conduct to be an ineffective fraud prevention technique. This could be due to the fact that the implementation of code of ethics may suffer the shortage of credibility when it is not actually employed (Hassink et al., 2007; Weaver et al., 1999). It has to be communicated frequently to the employees for them to be aware and understand their responsibility to alleviate fraud (Albrecht et al., 2009). Thus, in the context of this study the code

of conduct is regularly communicated to the employees in Kenyan State Corporations who are enlightened of their responsibilities to deter fraud. On the other hand, the findings of this study concurred with the research outcomes of Othman et al. (2015), Sofia (2016), Kao et al. (2018), Agathee and Ramen (2017) and Bierstaker et al. (2006) which established that cash reviews, bank reconciliations and password protection were perceived to be effective fraud prevention techniques. ACFE (2018) indicated that staff rotation policy prevents 23% of fraud losses when adequately implemented based on the global fraud survey conducted in 2018. Moreover, PwC (2018) revealed that firms are deriving huge benefits from alternative technologies such as email monitoring in curbing fraud.

Besides that, the findings revealed that generally in all Kenyan State Corporations the level of fraud occurrence in respect to asset misappropriation, corruption and financial statement were generally low. The findings mean that even though there have been cases of embezzlement of public funds (EACC, 2016) financial statement fraud as in the case of State corporations in Mombasa (Masengeli, Kiragu & Kamau, 2018) together with corruption and asset misappropriation cases (Kenyan Report, 2018). It does not mean that the entire Kenyan State Corporations records a high prevalence rate of fraud cases. Besides that, even though the findings revealed a low prevalence rate of fraud occurrence, the study noted that there was a moderately high prevalence rate of inflated costs in regard procurement of services, fictitious revenues and invoice kickbacks. The findings were consistent and supported the fraud case of NHIF that was involved in inflating its building costs by 337% (Kenyan Report, 2018) and that of the Geothermal Development Corporation which was involving in cooking up its revenue amounting to 3.1 billion shillings in regard to sales made to KenGen (Kenyan Report, 2018).

The regression analysis results revealed that fraud prevention techniques had a significant influence on fraud mitigation in Kenyan State Corporations. The findings of this study implied that the adequate usage of the most perceived effective fraud prevention techniques in Kenyan State Corporations seals all the loopholes that provides fraudsters the opportunity to perpetuate fraud. Thus, consequently reduces the level of fraud occurrences in the sector. The findings of this study agreed with Kamaliah et al. (2018) who found that there was a significant negative association between fraud prevention program and fraud incidents in Malaysian public sector. Adams et al. (2006) argued that the most effective way of curbing fraud losses is by developing

and effecting a fraud prevention program. Conversely, the findings of this study disagreed with Waigumo (2012) who revealed that fraud prevention techniques had an insignificant negative influence on fraud in Kenyan banking sector. This was because the fraud prevention methods used by Kenya commercial banks are old and are solely anchored on manual controls that fails to prevent the current technologized fraud incidences (Waigumo, 2012).

In regard to testing the theoretical propositions. The findings of the study with reference to fraud management lifecycle theory revealed that the first and the second nodes of the cycle (fraud deterrence and prevention) successfully manages fraud in the Kenyan State Corporations. This is because the findings of the study revealed that the fraud prevention techniques were perceived to be highly effective and are associated with the low level of fraud occurrence in Kenyan State Corporations. Consequently, fraud prevention techniques plays an important role in deterring most of the fraud cases such as asset misappropriation, corruption and financial statement fraud from sufficiently occurring and leading to substantial fraud losses. In regard to the fraud triangle theory where opportunity was directly linked to the study. The findings of the study revealed that the presence of the most perceived effective fraud prevention techniques had successfully sealed off all the loopholes that would provide the fraudsters opportunities to perpetuate fraud. This was justified by the low level of fraud occurrences in the Kenyan State Corporations. It was also justified by the findings of the regression analysis results which revealed that fraud prevention techniques has a significant negative influence on the level of fraud occurring in Kenyan State Corporations.

5.3.2 Influence of Fraud Detection Techniques on Prevalence of Fraud in Kenyan State Corporations

The descriptive analysis results revealed that virtually all the fraud detection techniques were perceived to be effective in detecting or curbing fraudulent actions in Kenyan State Corporations. These techniques comprised of; forensic accountants, informal whistle blowing, fraud hotlines, continuous auditing, document review, data analysis, formal whistle blowing policy, data mining, fraud vulnerability review, discovery sampling, financial ratios and tips from staff. The research findings agreed with findings of the survey conducted by Ernst and Young (2018) which revealed that bribery and corruption fraud were usually detected by whistle blowing. The findings of this study also agreed with the research outcomes of PwC (2018) which established

that a huge percentage of fraud incidences such as asset misappropriation, procurement fraud and financial statement fraud were detected by tip off. Additionally, the findings of this study concurred with the research findings of Othman et al. (2015), Agathee and Ramen (2017), Rahman (2014), Efiong, Inyang and Joshua (2016), Tunji et al. (2016) and Bierstaker, Brody and Pacini (2006) who established that forensic accountants, fraud hotlines, continuous auditing, data mining, discovery sampling, data analysis and fraud vulnerability review were perceived as effective fraud detection techniques.

Conversely, the findings of this study disagreed with the research outcomes of Kao et al. (2018) which established that fraud hotlines and fraud vulnerability reviews were perceived as ineffective fraud detection techniques. The regression analysis results revealed that fraud detection techniques had a significant influence on fraud mitigation in Kenyan State Corporations. The findings of this study implied that the adequate usage of the most perceived effective fraud detection techniques in Kenyan State Corporations helps in identifying or sealing of fraud before it is perpetuated. Thus, consequently reducing the level of fraud occurrences in the sector.

The findings of this study disagreed with Waigumo (2012) who revealed that fraud detection techniques had an insignificant negative influence on fraud in Kenyan banking sector. This is due to the fact that commercial banks were still relying on the old traditional fraud detection techniques which cannot be relied on in detecting fraud currently owing to the fact that fraudsters have gotten smarter and are using the latest technological tools to conceal their fraudulent actions. Hence making it hard for the old techniques to pinpoint areas of fraud risk. With reference to testing the theoretical propositions. In regard to the fraud management lifecycle. The findings of the study revealed that the third node of the fraud management lifecycle (fraud detection techniques) were highly effective in detecting and isolating fraud that could be ongoing. Which would have caused fraud losses hence discouraging future fraudulent actions. Thus the negative significant association between fraud detection techniques and fraud in Kenyan State Corporations means that these techniques plays an important role in curbing successful fraudulent activities from taking place.

In regard to the fraud triangle theory which contends that fraud occurs when there exists weak internal controls. Since the weak internal controls provides the fraudsters opportunities to

successfully perpetuate fraud without being detected. The findings of this study upheld the theoretical proposition of the fraud triangle theory which contended that the presence of effective mechanisms reduces opportunities to perpetuate fraud. This is because the findings of the study actually revealed that the most perceived fraud detection techniques was associated with the low level of fraud occurrences in Kenyan State Corporations. Thus meaning that the presence of the fraud detection techniques in Kenyan State Corporations successfully detects an ongoing fraud or completely seals off all loopholes that could be used to perpetuate fraud.

5.3.3 Moderating Effect of Firm Revenue on the Influence of Fraud Prevention and Detection Techniques on the Prevalence of Fraud in Kenyan State Corporations, Nairobi County

The findings of this study revealed that firm revenue significantly moderated the influence of fraud prevention techniques on the mitigation of fraud in Kenyan State Corporations. This meant that an increase of fraud prevention techniques would significantly lead to the reduction of the level of fraud occurrences only if firm revenues increases. Studies conducted by ACFE (2018) and Bierstaker, Brody &and Pacini (2006) revealed that small organizations employ few anti-fraud controls to prevent and detect fraudulent actions when compared to larger organizations that have sufficient anti-fraud controls to mitigate fraud. This is because small firms fear investing in anti-fraud controls especially the most effective ones since they are highly costly (Bierstaker, Brody & Pacini 2006). Hence paying the ultimate price of huge fraud losses. Thus, smaller firms are the ones who may be in dire need of the modern anti-fraud measures because fraud is more costly for the small organizations when compared to the large ones (Wells, 2003; Thomas & Gibson, 2003).

The findings of this study revealed that the influence of fraud detection techniques on the mitigation of fraud is moderated the firm revenue in Kenyan State Corporations. This meant that the Kenyan State Corporation with great annual revenues. Utilizes their finances in the employment of the most effective fraud detection techniques that are costly such as forensic accountants, data analysis, discovery sampling and continuous auditing which can quickly detect and curb fraud before experiencing fraud losses. Consequently, small Kenyan State corporations should assess the cost-benefit analysis of utilizing the most effective fraud detection and prevention techniques inorder to deter huge fraud losses that could lead to their downfall.

5.4 Conclusions

In conclusion the study revealed that both fraud prevention and detection techniques assessed by the study were perceived to be effective in deterring or revealing fraudulent actions in Kenyan State Corporations. Moreover, the study revealed that the perceived effectiveness of fraud prevention and detection techniques significantly mitigates fraudulent incidences such as corruption, financial statement fraud and asset misappropriation. Furthermore, the study ascertained that firm revenue significantly moderates the influence of fraud prevention and detection techniques on the mitigation of fraud in Kenyan State Corporations. This actually meant that when a State Corporation in Kenya manages to record high revenue margins and its asset base. Then it will have no problem in procuring the perceived effective fraud prevention and detection techniques which will effectively and efficient unravel or deter fraudulent actions.

5.5 Recommendations

The government should formulate a policy framework incorporating all the perceived fraud prevention and detection techniques identified by this study in order to make it mandatory for the management of all the Kenyan State Corporations to use them in detecting or curbing fraudulent activities that can result to costly losses. Moreover, the management should devote the firm's financial resources in procuring the most perceived effective fraud prevention and detection techniques that are costly but are very efficient and effective in detecting an ongoing fraud or preventing fraud actions from occurring. Hence in weighing the cost-benefit analysis of procuring the most perceived effective anti-fraud techniques the firms would in the long run prevent huge fraud losses that might cause them to shut down just because they were being economical in deciding whether to procure costly anti-fraud techniques or not.

The study contributes to the existing literature of the influence of fraud detection and prevention techniques on mitigation of fraud by broadening the literature to the Kenyan State Corporations considering the fact that limited research had been conducted in this specific area. Moreover, it contributed to the body of knowledge by assessing if firm annual has a moderating effect on the influence of fraud prevention and detection techniques on mitigation of fraud in Kenyan State Corporations.

5.6 Limitations and Suggestions for Future Research

This study was solely based on a quantitative methodology since it only focused on collecting primary and secondary data to address its objectives. Future studies should consider incorporating qualitative methodologies such as conducting interviews and focus group discussions in order to obtain an in-depth understanding of the effectiveness of fraud prevention and detection techniques and their influence on mitigation of fraud. Moreover even though the respondents of this study who were the accounting professions were deemed to have the needed information on anti-fraud controls and fraud aspects in State corporations. The study cannot wholly confirm that it obtained credible information on the effectiveness of fraud prevention and detection techniques and the level of fraud occurrences. Future studies should consider obtaining secondary data on the fraud prevention and detection techniques and consequently triangulate the information with that retrieved from primary sources in order to get a more objective reliable information.

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APPENDIXES

Appendix One: Questionnaire

The major objective of this research study is to retrieve data on the influence of fraud prevention and detection techniques on mitigation of fraud in Kenyan State Corporations and the moderating effect of firm revenue. You are humbly requested to answer the questions in this questionnaire truthfully. All the responses that you will record in this questionnaire will be treated with utmost confidentially and will be used for generalization purposes. Your voluntary involvement in this study will be greatly valued.

(Please tick √ inside the box ☐ where it is applicable)

SECTION A: DEMOGRAPHIC PROFILE

1. Gender: Male ☐ Female ☐

2.What is the name of the State Corporations that you are currently working for?…….

3. Job Title: Internal Auditor ☐ Accountant ☐ Manager ☐

4. Level of education: Bachelor Degree ☐ Higher Diploma ☐ Master Degree ☐
Doctorate Degree ☐

5. Current certification: CPA ☐ ACCA ☐ CISA ☐ CFE ☐ CFA ☐
Other.....

6. Years of work experience: Less than a year ☐ 1-3 years ☐ 3-5 years ☐
5- 10 years ☐ More than 10 years ☐

7. What is the annual average revenue of your firm (in millions of Kenyan Shillings)?

Less than 250 ☐ 250-500 ☐ 500-750 ☐ 750 to 1000 ☐

More than 1000 ☐

SECTION B: PERCEIVED EFFECTIVENESS OF FRAUD PREVENTION TECHNIQUES ON MITIGATION OF FRAUD

Please respond to the fraud prevention technique items presented in the table below by ticking (√**)** in the appropriate column to show how the techniques are effective in preventing fraud from occurring in State corporations.

No.	Fraud Prevention Technique	Very Ineffective (1)	Ineffective (2)	Moderately Effective (3)	Effective (4)	Very Effective (5)
1.	Organizational integrity plan.					
2.	Fraud prevention and detection training programs.					
3.	Code of conduct.					
4.	Password protection.					
5.	Reference checks on employees.					
6.	Cash reviews.					
7.	Fraud reporting policy.					
8.	Bank reconciliations.					
9.	Staff rotation policy.					
10.	Email monitoring.					
11.	Transaction testing.					

SECTION C: PERCIEVED EFFECTIVENESS OF FRAUD DETECTION TECHNIQUES ON MITIGATION OF FRAUD

Please respond to the fraud detection technique items presented in the table below by ticking (√) in the appropriate column to show how the techniques are effective in detecting fraud occurring in State corporations.

No.	Fraud Detection Technique	Very Ineffective (1)	Ineffective (2)	Moderately Effective (3)	Effective (4)	Very Effective (5)
1.	Informal whistleblowing.					
2.	Formal whistleblowing policy.					
3.	Forensic accountants.					
4.	Document review.					
5.	Tips from staff.					
6.	Fraud vulnerability review.					
7.	Data mining.					
8.	Fraud hotlines.					
9.	Continuous auditing.					
10.	Discovery sampling.					
11.	Data analysis.					
12.	Financial ratios.					

SECTION D: EXTEND OF FRAUD OCCURING IN KENYAN STATE CORPORATIONS

How would rate the level of the occurrence of fraud cases in Kenyan State Corporations presented in the table below? Please respond to the statements in the table below by ticking (√) in the appropriate column.

No.	Type of Fraud Occurrence	Never (1)	Rarely (2)	Undecided (3)	Always (4)	Often (5)
Asset Misappropriation						
1.	Billing schemes.					
2.	Asset requisitions and transfers.					
3.	Multiple reimbursements.					
4.	False sales and shipping.					
5.	Inflated costs in regards to procurement of services.					
Financial Statement Fraud						
6.	Improper asset valuations.					
7.	Overstated liabilities and expenses.					
8.	Fictitious revenue					
9.	Providing misleading disclosures					
Corruption						
10.	Invoice kickbacks					
11.	Bid rigging					
12.	Illegal gratuities					
13.	Conflict of interest involving purchasing schemes and sales schemes					

THANK YOU VERY MUCH FOR YOUR CO-OPERATION

Appendix Two: Research Permit Letter

Strathmore Business School

15th April 2019

To Whom It May Concern

Dear Sir/ Madam

RE: FACILITATION OF RESEARCH – SHARON KANGOGO

This is to introduce Sharon Kangogo who is a Master of Commerce student at Strathmore Business School, admission number MCOM/102754. As part of our MCOM Program, Sharon is expected to do applied research and undertake a project. This is in partial fulfilment of the requirements of the MCOM course. To this effect, she would like to request for appropriate data from your organization.

Sharon is undertaking a research paper on **"Influence of Fraud Prevention and Detection Techniques on Mitigation of Fraud in Kenyan State Corporations."** The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

Our MCOM seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and shall be willing to provide any further information if required.

Yours sincerely,

Caroline Tiara.
Manager – Masters' Programs

Strathmore UNIVERSITY
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Appendix Three: Ethics Approval Letter

Strathmore UNIVERSITY BUSINESS SCHOOL

Strathmore University
17th May 2019
Kangogo, Sharon
sharonnekangogo@gmail.com

Dear Sharon,

REF Protocol ID: SU-IERC0476/19

INFLUENCE OF FRAUD PREVENTION AND DETECTION TECHNIQUES ON MITIGATION OF FRAUD IN KENYAN STATE CORPORATIONS

We acknowledge receipt of your application documents to the Strathmore University Institutional Ethics Review Committee (SU-IERC) which includes:

1. Study Protocol submitted 13th May 2019.
2. Cover letter listing all submitted documents 13th May 2019.
3. Proposal declaration page signed by supervisors 13th May 2019.

The committee has reviewed your application, and your study "Influence of fraud prevention and detection techniques on mitigation of fraud in Kenyan State corporations" has been granted approval. This approval is valid for one year beginning 17th May 2019 until 17th May 2020.

In case the study extends beyond one year, you are required to seek an extension of the Ethics approval prior to its expiry. You are required to submit any proposed changes to this proposal to SU-IERC for review and approval prior to implementation of any change.

SU-IERC should be notified when your study is complete. Thank you.

Yours Sincerely,
Professor Florence Oloo,
Secretary,
Strathmore University Institutional Ethics Review Committee.

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000 Email admissions@strathmore.edu www.strathmore.edu

Appendix Four: NACOSTI Research Authorization Letter

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/61366/30666**

Date: **7th June, 2019.**

Sharon Jemutai Kangogo
Strathmore University
P.O. Box 59857 00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Influence of fraud prevention and detection techniques on mitigation of fraud in Kenyan State Corporations."*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **7th June, 2020.**

You are advised to report to **the County Commissioner, and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix Five: List of State Corporations in Kenya

CURRENT INVENTORY OF STATE CORPORATIONS – OCTOBER 9, 2013

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
1.	Cereals and Sugar Finance Corporation	Cereals and Sugar Finance Corporation Act Cap. 329	Raise and lend money for purchase of cereals or sugar	Agriculture, Livestock & Fisheries
2.	Coffee Development Fund	Coffee Act, 2001	Provide sustainable, affordable credit and advances to coffee farmers	Agriculture, Livestock & Fisheries
3.	Cotton Development Authority	section 4 of the Cotton(Amendment) Act 2006, Cap 335	to promote, coordinate, monitor, regulate and direct the cotton industry in Kenya	Agriculture, Livestock & Fisheries
4.	Kenya Coconut Development Authority (KeCDA)	State Corporations Act, Cap 446 through Kenya Coconut Development Authority Order, 2007, Legal Notice No. 165 of 27th August 2007	to develop the coconut industry through regulatory, research and promotion of the coconut sub-sector in Kenya, in line with the national development goals.	Agriculture, Livestock & Fisheries
5.	Pyrethrum Board of Kenya (now Pyrethrum Regulatory Authority)	Pyrethrum Act, No. 22 of 2013	development, regulation and promotion of the pyrethrum industry	Agriculture, Livestock & Fisheries
6.	Sisal Board of Kenya	Sisal Industry Act, Cap 341	Promote and regulate the sisal industry	Agriculture, Livestock & Fisheries
7.	Tea Board of Kenya	Tea Act, Cap 343	To license tea manufacturing factories; carry out of research on tea through its technical arm, the Tea Research Foundation of Kenya; the register growers, buyers, brokers, packers,	Agriculture, Livestock & Fisheries

1

(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			management agents and any other person dealing in tea; and promote Kenya tea in both the local and the international markets.	
8.	Coffee Board of Kenya	Coffee Act, 2001	Promote competition in the coffee industry, production, processing and branding of Kenya coffee locally and internationally, and generally to regulate the coffee industry in the public interest	Agriculture, Livestock & Fisheries
9.	Kenya Sugar Board (KSB)	Sugar Act, Cap 342 of 2001	Regulate and promote sugar industry	Agriculture, Livestock & Fisheries
10.	Canning Crops Board	Canning Crops Act Cap. 328	Promote canning of scheduled crops including inspection of canning factories and regulation of prices for scheduled crops	Agriculture, Livestock & Fisheries
11.	Agro-Chemical and Food Company	Companies Act, Cap 486	Carry on all or any other businesses of manufacturing related to alcohol, export and importation.	Agriculture, Livestock & Fisheries
12.	Kenya Meat Commission (KMC)	Kenya Meat Commission Act, Cap 363	Operating abattoirs and purchasing and processing of meat products	Agriculture, Livestock & Fisheries
13.	Muhoroni Sugar Company Ltd (Under Receivership)	Companies Act, Cap 486	Production of sugar	Agriculture, Livestock & Fisheries
14.	South Nyanza Sugar Company Limited	State Corporations Act (Cap 446)	To help the country attains self sufficiency in sugar production	Agriculture, Livestock & Fisheries
15.	Kenya Seed Company (KSC)	Companies Act, Cap 486	produce and market top quality seeds. Government seed bank	Agriculture, Livestock & Fisheries

2

(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
16.	Kenya Veterinary Vaccine Production Institute	State Corporations Act, Cap 446 of the laws of Kenya through legal notice No. 223 of 4th June, 1990.	To produce safe, efficacious and affordable veterinary vaccines through undertaking research, providing information, marketing and distribution for improvement of the livestock industry.	Agriculture, Livestock & Fisheries
17.	National Cereals & Produce Board (NCPB)	National Cereals and Produce Board Act, Cap 338	Market stabilization, famine relief and strategic grain reserve	Agriculture, Livestock & Fisheries
18.	Coffee Research Foundation	Companies Act, Cap 486 (limited by guarantee)	Promote research into and investigate all issues relating to coffee and such other agricultural and commercial systems as are associated with coffee	Agriculture, Livestock & Fisheries
19.	Kenya Agricultural Research Institute (KARI)	Science and Technology Act, Cap 250	Carry out research in the fields agriculture, veterinary Sciences, Forestry, Industrial and allied Technology	Agriculture, Livestock & Fisheries
20.	Kenya Sugar Research Foundation	Companies Act, Cap 486	Undertake research in sugar industry	Agriculture, Livestock & Fisheries
21.	Tea Research Foundation	Companies Act	To generate and disseminate knowledge and technology through innovative research for improved production, processing, value addition and marketing of Kenyan tea while conserving the environment	Agriculture, Livestock & Fisheries
22.	National Biosafety Authority	The Biosafety Act No. 2 of 2009	to exercise general supervision and control over the transfer, handling and use of genetically modified organisms (GMOs)	Agriculture, Livestock & Fisheries
23.	Agricultural Development	Agricultural Development Corporation Act, Cap 444	Promotion and execution of agricultural schemes and reconstruction in Kenya by	Agriculture, Livestock

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Corporation	of 1986	initiating, assisting or expansion of agricultural undertaking lands and enterprises. The Government land bank for agriculture land	& Fisheries
24.	Kenya Animal Genetics Resource Centre	State Corporations Act, Cap 446 under Kenya Animal Genetic Resources Centre Order, 2011	Establish a national livestock resources gene bank	Agriculture, Livestock & Fisheries
25.	Kenya Tsetse and Trypanosomiasis Eradication Council	Kenya Tsetse and Trypanosomiasis Eradication Council Order, 2012	advise the Government on the policy on tsetse and trypanosomiasis eradication in Kenya and its implementation;	Agriculture, Livestock & Fisheries
26.	Agricultural, Fisheries and Food Authority	Agriculture, Fisheries and Food Authority Act, No. 13 of 2013	Regulation agriculture sector	Agriculture, Livestock & Fisheries
27.	Kenya Leather Development Council	State Corporations Act, Cap 446 under Kenya Leather Development Council Order, 2011	Promote, direct, coordinate and harmonize all activities in the leather subsector	Agriculture, Livestock & Fisheries
28.	Kenya Plant Health Inspectorate Services (KEPHIS)	Kenya Plant Health Inspectorate Service Act, 2011	Regulate matters relating to plant protection, seeds and plant varieties; administer and enforce sanitary and phytosanitary measures; support the administration and enforcement of food safety measures; establish service laboratories to monitor quality and levels of toxic residues in agro-inputs, irrigation water, plants, soils and produce	Agriculture, Livestock & Fisheries
29.	National	Irrigation Act, Cap 347	development, control and improvement of	Agriculture, Livestock

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Irrigation Board		national irrigation schemes in Kenya,	& Fisheries
30.	Bukura Agricultural College	Bukura Agricultural College Act of 1999	Provide education in agriculture and other auxiliary subjects	Agriculture, Livestock & Fisheries
31.	Kenya Agricultural and Livestock Research Organization	Kenya Agricultural and Livetsock Act, 2013	To undertake research in agriculture and allied areas	Agriculture, Livestock & Fisheries
32.	Kenya Marine and Fisheries Research Institute	Science and Technology, Cap 250	Research in Marine and Freshwater Fisheries	Agriculture, Livestock & Fisheries
33.	The Kenya Veterinary Board (KVB)	Veterinary Surgeons' and Veterinary Para-professionals (VSVP) Act No. 29 of 2011	To exercise general supervision and control over the training, business, practice and employment of veterinary surgeons and veterinary paraprofessionals in Kenya.	Agriculture, Livestock & Fisheries
34.	Animal Technicians Council	Animal Technicians Act No. 11 of 2011	Safeguard interests of all animal technicians Lecence and regulate the business and practice of animal technicians	Agriculture, Livestock & Fisheries
35.	Horticultural Crops Development Authority	Agriculture Act Cap 318 through a subsidiary legislation in 1967, Legal Notice No. 190 HCDA Order 2011	To regulate the horticulture industry through licensing and application of rules as prescribed under the Agriculture Act, Cap 318 and also to provide advisory and marketing services to the stakeholders in the industry for planning purposes	Agriculture, Livestock & Fisheries
36.	Chemilil Sugar Company Ltd	Companies Act, Cap 486	Crush sugar cane and manufacture sugar and related products.	Agriculture, Livestock & Fisheries

(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
37.	Nzoia Sugar Company Ltd	Companies Act, Cap 486	to crush sugar cane and manufacture sugar and related products	Agriculture, Livestock & Fisheries
38.	Kenya Dairy Board	Dairy Industry, Cap 336	improvement and control of the dairy industry and its products	Agriculture, Livestock & Fisheries
39.	LAPSSET Corridor Development Authority	State Corporations Act, Cap 446 under LAPSSET Corridor Development Authority, Order, 2013	plan, co-ordinate and sequence LAPSSET Corridor projects in collaboration with Implementing ministries and agencies	Executive Office of the President
40.	Kenya Ordnance Factories Corporation	State Corporations Act Cap 446 through Legal Notice No. 125 of 23 July 1997	To manufacture military Hardware, Machinery and Equipment	Defence
41.	Anti-Female Genital Mutilation Board	Prohibition of Female Genital Mutilation No. 32 of 2011	Design surveys and coordination public awareness programmes Advise the government on matters relating to female genital mutilation Design and formulate a policy on the planning, financing and coordinating all activities relating to female genital mutilation	Devolution & Planning
42.	South - South Centre	South - South Centre Order, 2012	Initiate, organize and manage South-South activities and projects in consultation with the Government, civil society organizations or private sector institutions	Devolution & planning
43.	Youth Enterprises Development Fund	State Corporations Act, Cap 446	Provide loans to existing micro-finance institutions (MFIs), NGOs and SACCOs for on-lending to youth enterprises, attract and facilitate investment in micro, small and	Devolution & Planning

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			medium enterprises oriented commercial infrastructure such as business or industrial parks, markets or business incubators that will be beneficial to youth enterprises and support youth oriented micro, small and medium enterprises to develop linkages with large enterprises, facilitate marketing of products of youth enterprise products and youth employment;	
44.	Constituency Development Fund	Constituencies Development Fund Act, No. 30 of 2013	Ensure that a specific portion of the national annual budget is devoted to the constituencies for purposes of infrastructural development, wealth creation and in the fight against poverty at the constituency level.	Devolution & Planning
45.	Kenya National Bureau of Statistics	Statistics Act, No. 4 of 2006	principal agency of the Government for collecting, analysing and disseminating statistical data in Kenya and shall be the custodian of official statistical information	Devolution & Planning
46.	National Coordinating Agency for Population & Development	State Corporations Act through The National Coordinating Agency For Population and Development Order, 2004	develop policies relating to population	Devolution & Planning
47.	Public Benfeits Organizations Regulatory Authority (Formerly NGO Coordination	Public Benfeits Organizations Act, 2013	Register public benefit organizations, maintain a register of the organizations and interpret the national policy on public benefit organizations so as to assist in its smooth implementation and observance by Government ministries, departments and agencies	Devolution & Planning

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Board)			
48.	Kenya School of Government	Kenya School of Government Act, 2012	provide learning and development programmes to build capacity for the Public Service	Devolution & Planning
49.	Kenya Institute of Public Policy Research & Analysis (KIPPRA)	Kenya Institute for Public Policy Research and Analysis Act, No. 15 of 2006	Public policy research and analysis and related advisory services	Devolution & Planning
50.	Drought Management Authority	State Corporations Act, Cap 446 through National Drought Management Authority Order, 2011	On its own or in association with other authorities or persons, establish mechanisms to ensure that drought does not become famine and the impacts of climate change are sufficiently mitigated	Devolution & Planning
51.	Institute of Human Resource Management	Human Resource Management Professionals Act, 2012	Establish, monitor and publish the standards of professional competence and practice amongst human resource professionals; Register persons who meet the required professional and ethics standards; Promote research in human resource practice and related matters, Publish books, periodicals, journals and articles on human resource; Regulate the practice, competence and professional conduct of human resource professionals; Promote and protect the welfare and interests of the human resources profession	Devolution and Planning

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
52.	Tourism Research Institute	the Tourism Act, No. 28 of 2011	to undertake and co-ordinate tourism research and analysis in accordance with the provisions of this Act	East African Affairs, Commerce & Tourism
53.	Kenya National Trading Corporation (KNTC)	Companies Act, Cap 486	Promoting and growing wholesale and retail trade through efficiently trade in quality products and services to ensure balance of supply and demand in the Country's distribution networks, while promoting e-commerce and global trade with an aim to maximizing stakeholder's value.	East African Affairs, Commerce & Tourism
54.	Kenyatta International Convention Centre	Tourism Act, Cap 28 of 2011	to promote business of meetings, conferences and exhibitions	East African Affairs, Commerce & Tourism
55.	Kenya Safari Lodges and Hotels Ltd.	Companies Act Cap. 486	Provision of premium hotel and lodge accommodation, current conference and business meeting venues, customized beach and safari experiences as well as high value niche products	East African Affairs, Commerce & Tourism
56.	Kenya Tourist Finance Corporation (Formally KTDC)	The Tourism Act, 2011	to develop tourism facilities and finance private investors	East African Affairs, Commerce & Tourism
57.	Kenya Tourist Board	Tourism Act No. 28 of 2011	Promote and market Kenya as a tourist destination locally and internationally	East African Affairs, Commerce & Tourism
58.	Export Promotion Council (EPC)	Companies Act, Cap 486 (limited by guarantee)	Develop and promote Kenya's exports	East African Affairs, Commerce & Tourism
59.	Tourism Fund Board of Trustees	Hotels and	Control and administration of the training and	East African Affairs,

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	(Formerly Catering and Tourism Development Levy Trustees)	Restaurants Act, Cap 494	tourism development levy fund	Commerce & Tourism
60.	Tourism Regulatory Authority	Tourism Act	regulate the tourism sector	East African Affairs, Commerce & Tourism
61.	Kenya Utalii College (KUC)		training qualified professionals for the Hospitality and Tourism industry	East African Affairs, Commerce & Tourism
62.	Bomas of Kenya	Companies Act, Cap 486	Preserve, maintain and promote the rich diverse cultural values of various ethnic groups of Kenya	East African, Commerce & Tourism
63.	Golf Hotel Kakamega	Companies Act Cap. 486	Hotel and hospitality	East African, Commerce & Tourism
64.	Sunset Hotel Kisumu	Companies Act Cap. 486	Hotel and hospitality	East African, Commerce & Tourism
65.	Kabarnet Hotel Limited	Companies Act Cap. 486	Hotel and hospitality	East African, Commerce & Tourism
66.	Mt Elgon Lodge	Companies Act Cap. 486	Hotel and hospitality	East African, Commerce & Tourism
67.	Kenya National Innovation Agency	Science, Technology and Innovation Act No. 28 of 2013	Develop and manage the Kenya National Innovation System, and for that purpose to institutionalize linkages between universities, research institutions, the private sector, the Government, and other actors in that System; and cause the creation of science and innovation parks, institutes or schools or	Education Science and Technology

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			designate existing institutions as centres of excellence in priority sectors	
68.	Kenya Universities and Colleges Central Placement Service	The universities act No. 42 of 2012 (Section 55)	Uphold equity and balanced access to University and College education and develop suitable criteria to promote affirmative action, and other strategies as may be approved the by Government	Education, Science & Technology
69.	Technical and Vocational Education and Training Curriculum Development, Assessment and Certification	Technical and Vocational Education and Training Act No. 29 of 2013	Design and development of curricula for the training institutions' examination, assessment and competence certification; make rules with respect to such examinations and competence assessments; issue certificates to candidates who satisfy national TVET examination and competence assessment requirements; and promote recognition of its qualifications in foreign systems;	Education, Science & Technology
70.	Jomo Kenyatta Foundation	Companies Act, Cap. 486, Laws of Kenya (limited by guarantee)	Advance education and knowledge for poverty alleviation through quality publishing and provision of scholarships	Education, Science & Technology
71.	Kenya Literature Bureau (KLB)	Kenya Literature Bureau Act, Cap 209	publishing, printing and distributing literary, educational, cultural and scientific books, periodicals, journals, magazines, digital and electronic material and works of every description	Education, Science & Technology
72.	University of Nairobi Enterprises Ltd.	Companies Act Cap. 486	The commercial arm of the University of Nairobi charged with the responsibility of promoting and coordinating income-generating	Education, Science & Technology

(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			activities in the University	
73.	School Equipment Production Unit	Companies Act Cap. 486	Design, manufacture, supply and distribute science materials and apparatus for education	Education, Science & Technology
74.	University of Nairobi Press (UONP)	Companies Act Cap. 486	Publishing	Education, Science & Technology
75.	Jomo Kenyatta University Enterprises Ltd.	Companies Act Cap. 486	Enterprises Ltd. that undertakes several activities related to the business industry for various clients such as MSMEs, banks, parastatals, corporations and government ministries. These activities include training, development of tailor-made curricula, course material development and consultancy services in collaboration with technical JKUAT departments	Education, Science & Technology
76.	Rivatex (East Africa) Ltd.	Companies Act Cap. 486	Training, consultancy, research, extension and manufacture of textile products	Education, Science & Technology
77.	Higher Education Loans Board	Higher Education Loans Board Act, 1995.	Management of a Fund to be used for granting loans to assist Kenyan students to obtain higher education at recognized institutions within and outside Kenya	Education, Science & Technology
78.	Kenya Institute of Curriculum Development	Kenya Institute of Curriculum Development Act, 2013	Advise the Government on matters pertaining to curriculum development, and implement the policies relating to curriculum development in basic and tertiary education and training	Education, Science & Technology
79.	Kenya National Commission for	Kenya National Commission For UNESCO	Liaise with UNESCO and implement UNESCO activities and budgeted programs	Education, Science & Technology

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	UNESCO	Act, No. 5 of 2013		
80.	Kenya National Examination Council (KNEC)	Kenya National Examinations Council Act, 2012	Conduct of examinations at basic and tertiary levels	Education, Science & Technology
81.	Technical and Vocational Education Training Authority	Technical And Vocational Education And Training Act, No. 29 of 2013	governance and management of institutions offering technical and vocational education and training; to provide for coordinated assessment, examination and certification	Education, Science & Technology
82.	Commission for University Education	Universities Act, No. 42 of 2012	The establishment, accreditation and governance of universities	Education, Science & Technology
83.	National Commission for Science, Technology and Innovations	Science and Technology and innovation Act, 2013	Regulate and assure quality in science, technology and innovation sector and advise the government in related matters	Education, Science & Technology
84.	Chuka University	Egerton University Act, Cap 214 through the Chuka University College Order, 2007:	Provide and advance university education and training	Education, Science & Technology
85.	Cooperative University College	Jomo Kenyatta University of Agriculture and Technology Act, Cap 210E through Co-operative University College Order, 2011	Provide and advance university education and training	Education, Science & Technology
86.	Dedan Kimathi	Jomo Kenyatta University	Provide and advance university education and	Education, Science &

(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	University	of Agriculture and Technology Act, No. 8 of 1994 through the Kimathi University College of Technology Order, 2007	training	Technology
87.	Egerton University	Egerton University Act, Cap 214	Provide and advance university education and training	Education, Science & Technology
88.	Embu University College	University of Nairobi Act of 2011	Provide and advance university education and training	Education, Science & Technology
89.	Garissa University College	Moi University Act Chapter 210A	University Education	Education, Science & Technology
90.	Jaramogi Oginga Odinga University of Science and Technology	Maseno University Act, Cap 210D through the Bondo University College Order, 2009	Provide and advance university education and training	Education, Science & Technology
91.	Jomo Kenyatta University of Agriculture And Technology	Jomo Kenyatta University of Agriculture and Technology, Cap 210	Provide and advance university education and training	Education, Science & Technology
92.	Karatina University	Moi University Act, Cap 210A through Karatina University College Order, 2009	Provide and advance university education and training	Education, Science & Technology
93.	Kenya Multi-Media University	Jomo Kenyatta University of Agriculture and Technology Act through the Multimedia University	To provide and advance university education and training	Education, Science & Technology

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
		College of Kenya Order, 2008		
94.	Kenyatta University	Kenyatta University Act, Cap 210C	to provide and advance university education and training	Education, Science & Technology
95.	Kibabii University College	Masinde Muliro University Act	Provide and advance university education and training	Education, Science & Technology
96.	Kirinyaga University College	Jomo Kenyatta University of Agriculture and Technology, Cap 210	to provide and advance university education and training	Education, Science & Technology
97.	Kisii University	Egerton University Act, Cap 214 through the Kisii University College Order, 2007	to provide and advance university education and training	Education, Science & Technology
98.	Laikipia University	Egerton University Act, Cap 214 through the Laikipia University College Order, 2009	to provide and advance university education and training	Education, Science & Technology
99.	Maasai Mara University	Moi University Act, Cap 210A through Narok University College Order, 2008	to provide and advance university education and training	Education, Science & Technology
100.	Machakos University College	Kenyatta University Act	Provide and advance university education and training	Education, Science & Technology
101.	Maseno University	Maseno University Act, Cap 210D	to provide and advance university education and training	Education, Science & Technology

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
102.	Masinde Muliro University of Science and Technology	Masinde Muliro University of Science and Technology Act, Cap 210F	to provide and advance university education and training	Education, Science & Technology
103.	Meru University of Science and Technology	Jomo Kenyatta University of Agriculture and Technology Act, Cap 210E, through the Meru University College of Science and Technology Order, 2008	to provide and advance university education and training	Education, Science & Technology
104.	Moi University	Moi University Act	to provide and advance university education and training	Education, Science & Technology
105.	Murang'a University College	Murang'a University College order legal notice No. 129 of September 2011 as a constituent College of Jomo Kenyatta University of Agriculture and Technology	to provide and advance university education and training	Education, Science & Technology
106.	Pwani University	The Kenyatta University Act, Cap. 210c, through the Pwani University College Order, 2007	to provide and advance university education and training	Education, Science & Technology
107.	Rongo University College	Legal Notice NO.70, Kenya Gazette Supplement NO.51, on 17th June 2011.	to provide and advance university education and training	Education, Science & Technology
108.	South Eastern Kenya University	University of Nairobi Act through the South Eastern	to provide and advance university education and training	Education, Science & Technology

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
		University College Order, 2008		
109.	Taita Taveta University College	Jomo Kenyatta University of Agriculture and Technology, Cap 210	to provide and advance university education and training	Education, Science & Technology
110.	Technical University of Mombasa	Legal Notice No. 160 of 23rd August 2007,	to provide and advance university education and training	Education, Science & Technology
111.	The Technical University of Kenya	the University of Nairobi Act through the Kenya Polytechnic University College Order, 2007	to provide and advance university education and training	Education, Science & Technology
112.	University of Eldoret	Moi University Act, Cap 210A through Chepkoilel University College Order, 2010	to provide and advance university education and training	Education, Science & Technology
113.	University of Kabianga	Moi University Act, Cap 210A through the Kabianga University College Order, 2009	Provide and advance university education and training	Education, Science & Technology
114.	University of Nairobi	University of Nairobi Act, Cap 210	to provide and advance university education and training	Education, Science & Technology
115.	KCA University		Provide University and professional education and training	Education, Science & Technology
116.	Rural Electrification Authority	Energy Act, Cap 12	To accelerate the pace of rural electrification in order to promote sustainable socio-economic development	Energy & Petroleum

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
117.	Kenya Electricity Generating Company (KENGEN	Companies Act, Cap 486	Electric power generation	Energy & Petroleum
118.	Kenya Electricity Transmission Company (KETRACO)	Companies Act, Cap 486	Develop new high voltage electricity transmission infrastructure forming the backbone of the National Transmission Grid	Energy & Petroleum
119.	Kenya Pipeline Company (KPC	Companies Act, Cap 486	Provide the most economical and modern way of transporting and storing petroleum products	Energy & Petroleum
120.	Kenya Power and Lighting Company (KPLC)	Companies Act, Cap 486	transmits, distributes and retails electricity to customers throughout Kenya	Energy & Petroleum
121.	National Oil Corporation of Kenya	Companies Act, Cap 481	Participation in up and downstream aspects of petroleum industry	Energy & Petroleum
122.	Geothermal Development Company (GDC)	Companies Act, Cap 486	To promote rapid development of geothermal resources in Kenya through surface exploration and drilling for steam. To avail steam to power plant developers for electricity generation. To manage the geothermal reservoirs- to ensure constant supply of steam for power generation To promote alternative uses of geothermal resources other than electricity generation. These include green house heating, drying of grains, pasteurizing milk, cooling and heating of rooms, among others.	Energy & Petroleum

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
123.	Energy Regulatory Commission	Energy Act, Cap 12	Regulate the energy sector	Energy & Petroleum
124.	Kenya Nuclear Electricity Board	Kenya Nuclear Electricity Board Order, 2012.	Promote and expedite the development of nuclear electricity in Kenya	Energy and Petroleum
125.	Mombasa Pipeline Board	Mombasa Pipeline Board Cap 373 -	To supply water in bulk to such water undertakers as the Minister may, after consultation with the Board, by notice in the Gazette, designate in that behalf	Environment, Water & Natural Resources
126.	Water Services Trust Fund	Water Act, Cap 372	According to the Trust Deed, WSTF's mandate is to provide financial support for improved access to water and sanitation in areas without adequate services including supporting capacity building activities and initiatives that aim at enabling communities to plan, implement, manage, operate and sustain water services-by creating awareness and disseminating information regarding community management of water services, and encouraging their active participation in implementation and management.	Environment, Water & Natural Resources
127.	Nyayo Tea Zones Development Corporation	State Corporations Act, Cap 446 through Nyayo Tea Zones Development Corporation Order	to promote forest conservation by providing buffer zones of tea and assorted tree species to check human encroachment into forestland. This is achieved through the establishment of tea and assorted tree buffer belts around those forests.	Environment, Water & Natural Resources
128.	National Water Conservation and Pipeline	Water Act 2002	Development of water infrastructure and supply of water	Environment, Water & Natural Resources

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Corporation			
129.	Kenya Wildlife Service (KWS)	Wildlife (Conservation and Management) Act, Cap 376	conservation, management and utilization of all types of fauna (not being domestic animals) and flora	Environment, Water & Natural Resources
130.	Kenya Water Towers Agency	State Corporations Act, Cap 446 enabled by Kenya Water Towers Agency Order, 2012	Co-ordinate and oversee the protection, rehabilitation, conservation, and sustainable management of water towers	Environment, Water & Natural Resources
131.	Kenya Forest Service	Forests Act, No. 7 of 2005	Establishment, development and sustainable management, including conservation and rational utilization, of forest resources for the socio-economic development of the country	Environment, Water & Natural Resources
132.	Water Resources Management Authority	Water Act, 2002, Cap 372	To be the lead agency in water resources management	Environment, Water & Natural Resources
133.	Water Services Regulatory Board	Water Act, Cap 372	Promotion and regulation of water provision services	Environment, Water & Natural Resources
134.	National Environmental Management Authority (NEMA)	Environmental Management and Coordination Act, No. 8 1999	to exercise general supervision and co-ordination over all matters relating to the environment	Environment, Water & Natural Resources
135.	Kenya Water Institute	Kenya Water Institute Act, 2001	Provide, directly or in collaboration with other institutions of higher learning, services in human resource development, consultancy, research and development in the water sector	Environment, Water & Natural Resources
136.	Kenya Forestry Research Institute	Science and Technology, Act Cap 250	Research in forestry and allied natural resources	Environment, Water & Natural Resources

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
137.	Athi Water Services Board	Water Act, Cap 372	Efficient and economical provision of water services within the Nairobi and Athi Basin/Region	Environment, Water & Natural Resources
138.	Coast Water Services Board	Water Act, Cap 372	Efficient and economical provision of water services within the Coast Region	Environment, Water & Natural Resources
139.	Lake Victoria North Water Service Board	Kenya Gazette Notice No. 1717 of 12th March, 2004 and licensed by the Water Services Regulatory Board (WSREB) on 5th April, 2004	provision of water and sanitation services	Environment, Water & Natural Resources
140.	Lake Victoria South Water Service Board	Water Act, Cap 372	provision of water and sanitation services	Environment, Water & Natural Resources
141.	Northern Water Services Board	Water Act, Cap 372	provision of water and sanitation services	Environment, Water & Natural Resources
142.	Rift Valley Water Services Board	Water Act, Cap 372	provision of water and sanitation services	Environment, Water & Natural Resources
143.	Tana Water Services Board	Water Act, Cap 372	provision of water and sanitation services	Environment, Water & Natural Resources
144.	Tanathi Water Services Board	Water Act, Cap 372	provision of water and sanitation services	Environment, Water & Natural Resources
145.	Coast Development Authority	Coast Development Authority Act, Cap 449	Plan and co-ordinate the implementation of development projects in whole of the Coast Province and the exclusive economic zone	Environment, Water & Natural Resources
146.	Ewaso Ng'iro North Development	Ewaso Ng'iro North River Basin Development	Plan and co-ordinate the implementation of development projects in the Ewaso Ng"iro	Environment, Water & Natural Resources

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Authority	Authority Act, Cap 448	North River Basin and catchment areas	
147.	Ewaso Ng'iro South Development Authority	Ewaso Ng'iro South River Basin Development Authority Act, Cap 447	plan and co-ordinate the implementation of development projects in the Ewaso Ng"iro South River Basin and catchment areas	Environment, Water & Natural Resources
148.	Kerio Valley Development Authority	Kerio Valley Development Authority Act, Cap 441	to plan, initiate, co-ordinate and monitor implementation of programmes and projects that transcend administrative boundaries within KVDA's area of operation. It is also mandated to maintain a liaison between the institutions (KVDA), Government, Private sector and other agencies on matters of development in the area in view of limiting duplication of activities and ensuring best use of Technical, Financial, Human and Natural resources	Environment, Water & Natural Resources
149.	Lake Basin Development Authority	Lake Basin Development Authority Act, Cap 442	Carry out integrated sustainable development planning, Implement development programmes and projects, Coordinate development programmes and activities, Promote management and conservation of natural resources, and to Monitor and evaluate development programmes and projects	Environment, Water & Natural Resources
150.	Tana & Athi Rivers Development Authority	Tana and Athi Rivers Development Authority Act, Cap443	plan and co-ordinate the implementation of development projects in the TRDA areas	Environment, Water & Natural Resources
151.	National Cancer Institute	Cancer Prevention and Control Act, 2012	promote public awareness about the causes, consequences, means of prevention and control	Health

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	of Kenya		of cancer	
152.	Kenya Medical Supplies Authority (former Kenya Medical Supplies Agency)	The Kenya Medical Supplies Authority Act, No. 20 of 2013	procure, warehouse and distribute drugs and medical supplies	Health
153.	Kenyatta National Hospital	State Corporations Act, Cap 446 through Kenyatta National Hospital Board order, 1987	to provide specialized healthcare, facilitate training and research and participate in National Health Planning and Policy for the benefit of the nation and the region at large	Health
154.	Moi Teaching and Referral Hospital	State Corporations Act, Cap 446	provision of Quality Healthcare, Training and Research.	Health
155.	National Aids Control Council	State Corporations Act through National AIDS Control Council Order, 1999,	to coordinate stakeholders in the multisectoral response to HIV and AIDS in Kenya.	Health
156.	National Hospital Insurance Fund	National Hospital Insurance Fund Act, No. 9 of 1998	to provide health insurance to Kenyans over the age of 18	Health
157.	National Quality Control Laboratories	Pharmacy and poisons Act Cap. 244	Examination and testing of drugs and any material or substance from or with which and the manner in which drugs may be manufactured, processed or treated and ensuring the quality control of drugs and medicinal substances	Health
158.	Kenya Medical Laboratory Technicians and	Medical Laboratory Technicians and	Exercise general supervision and control over the training, business, practice and employment of laboratory technicians and technologists in	Health

(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Technologists Board	Technologists Act Chapter 253A	Kenya and to advise the Government in related matters	
159.	Kenya Medical Training College (KMTC)	Kenya Medical Training College Act, Cap 261	Training in health services	Health
160.	Kenya Medical Research Institute (KEMRI)	Science and Technology Act, Cap 250	Medical research	Health
161.	Kenya Nutritionists and Dieticians Institute	Nutritionists and Dieticians Act No. 18 of 2007	Determine and set a framework for the professional practice of nutritionists and dieticians Set and enforce standards of professional practice and ethics	Health
162.	Nursing Council of Kenya	Nurses Act Cap 257	Establish and improve standards of all branches of the nursing profession in all their aspects and to safeguard the interests of all nurses; Establish and improve the standards of professional nursing and of health care within the community; Make provision for the training and instruction for persons seeking registration or enrolment under this Act; Prescribe and regulate syllabuses of instruction and courses of training for persons seeking registration or enrolment under this Act; Recommend to the Minister institutions to be	Health

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			approved institutions for training of persons seeking registration or enrolment under this Act; Prescribe and conduct examinations for persons seeking registration or enrolment under this Act;	
163.	East African Portland Cement Company Ltd.	Companies Act, Cap 486	Manufacture cement and related products	Industrialization & Enterprise Development
164.	Kenya Wine Agencies Ltd (KWAL)		to produce and distribute wines and spirits to both domestic and international markets	Industrialization & Enterprise Development
165.	New Kenya Co-operative Creameries	Companies Act Ca. 486	Milk processing and production of dairy products	Industrialization & Enterprise Development
166.	Yatta Vineyards Ltd	Companies Act Cap. 486	Grape farming	Industrialization & Enterprise Development
167.	Development Bank of Kenya Ltd.	Companies Act, Cap 486 Merchant Shipping Act, 1989	Development Finance	Industrialization & Enterprise Development
168.	KWA Holdings	Companies Act, Cap 486	Holding Company	Industrialization & Enterprise Development
169.	Numerical Machining Complex	Companies Act, 486	the commercial production of steel, engineering design, and development of machinery and components.	Industrialization & Enterprise Development
170.	Industrial and Commercial Development	Industrial and Commercial Development	Facilitating the industrial and economic development of Kenya	Industrialization & Enterprise Development

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Corporation	Corporation Act, Cap 445		
171.	Kenya Industrial Estates (KIE)	Companies Act, Cap 486	Address indigenization of businesses, capital formation, regional dispersion of wealth, and exploitation of local resources through provision of industrial sheds, subsidized credit and improvement of entrepreneurial skills to indigenous owned Micro, Small and Medium industries (MSMIs) with special focus on rural industrial development.	Industrialization & Enterprise Development
172.	Sacco Societies Regulatory Authority	Sacco Societies Act 2008	To licence and supervise Deposit Taking Sacco Societies in Kenya.	Industrialization & Enterprise Development
173.	Kenya Investment Authority	Investment Promotion Act, No. 6 of 2004	Investment Promotion Act, No. 6 of 2004	Industrialization & Enterprise Development
174.	Kenya Industrial Property Institute	Industrial Property Act, 2001	Promotion of inventive and innovative activities, to facilitate the acquisition of technology through the grant and regulation of patents, utility models, technovations and industrial designs	Industrialization & Enterprise Development
175.	Anti-Counterfeit Agency	The Anti-Counterfeit Act, 2008	Combat trade in counterfeit goods	Industrialization & Enterprise Development
176.	Kenya Bureau of Standard (KBS)	Standards Act, Cap 496	Promote the standardization of the specification of commodities, and to provide for the standardization of commodities and codes of practice	Industrialization & Enterprise Development
177.	Kenya National Accreditation Service	State Corporations Act, Cap 446 through Kenya Accreditation Service	Regulation of accreditation of conformity assessment bodies	Industrialization & Enterprise Development

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
		Order, 2009		
178.	Export Processing Zones Authority (EPZA)	Export Processing Zones Act, Cap 517	promotion and facilitation of export oriented investments and the development of enabling environment for such investment	Industrialization & Enterprise Development
179.	Kenya Industrial Research & Development Institute	Science and Technology Act, Cap 250	Research in the fields of Civil Engineering, Mechanical Engineering, Textile Technology, Electrical Engineering , Mining, Power Resources, Chemical Engineering, Indus trial Chemistry, Food Technology, Ceramics and Clay Technology	Industrialization & Enterprise Development
180.	Small and Micro Enterprises Authority	Micro and Small Enterprises Act, 2012	Promotion, development, and regulation of micro and small enterprises	Industrialization and Enterprise Development
181.	Media Council of Kenya	Media Act 2007	regulation of media and in the conduct and discipline of journalists	Information and Communication
182.	Kenya Yearbook Editorial Board	State Corporations Act, Cap 446 through the Kenya Yearbook Order, 2007 to:	facilitating Government communication services through the publication of the Kenya Yearbook	Information, Communication & Technology
183.	Kenya Broadcasting Corporation	Kenya Broadcasting Corporation Act, Cap 221	National Broadcasting	Information, Communication & Technology
184.	Postal Corporation of Kenya	Postal Corporation Act, Cap 411	responsible for provision of postal service in Kenya to encourage and facilitate personal saving	Information, Communication & Technology
185.	Brand Kenya Board	State Corporations Act, Cap 446 through the Brand Kenya Board Order, 2008	Co-ordinate initiatives for marketing the country in order to maximize their efficiency; and create and maintain the Kenya brand to identify and distinguish Kenyan products,	Information, Communication & Technology

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			services and concepts.	
186.	Information and Communications Technology Authority	State Corporations Act, Cap 446 through Information and Communications Technology Authority Order, No. 183 of 2013	Advise the Government on all relevant matters pertaining to the development, co-ordination and promotion of information and communications technology industries in the country.	Information, Communication & Technology
187.	Konza Technopolis Authority	Konza Technopolis Development Order, 2012	to plan, develop, regulate and manage Konza Techno City as a world class, mixed use and sustainable city.	Information, Communication & Technology
188.	Communications Commission of Kenya	Kenya Information and Communications Act, Cap 411A	To licence and regulate postal, information and communication services	Information, Communication & Technology
189.	Kenya Institute of Mass Communication	State Corporations Act, Cap 446 under Kenya Institute of Mass Communication Order, 2011	Training in communication and the cinematic-arts	Information, Communication & Technology
190.	The National Council for Children's Services	Kenya Gazette Supplement No. 89 16th December, 2005 (Legislative Supplement No. 53) LEGAL NOTICE NO. 145 THE CHILDREN ACT, 2001 (NO. 8 OF 2001) Sec 30	to provide oversight and co-ordination of children activities in the country.	Interior & Co-ordination of National Government

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
191.	National Campaign Against Drug Abuse Authority (now National Authority for the Campaign Against Alcohol and Drug Abuse)	National Authority for the Campaign Against Alcohol and Drug Abuse Act, 2012	control of alcohol and drug abuse	Interior & Coordination Of National Government
192.	Kenya Citizens and Foreign Nationals Management Service	Kenya Citizens and Foreign Nationals Management Service Act No. 31 of 2011	Implement policies, laws and other matters relating to immigration, births, deaths, identification and registration of persons including issue of passports	Interior and Coordination of National Government
193.	Kenya Red Cross Society	Kenya Red Cross society Cap. 256	Furnish volunteer aid to sick and wounded in time of war and non-belligerents and to prisoners of war and civilian sufferers from effects of war Provide relief to victims of catastrophe Improvement of health and prevention of diseases	Interior and Coordination of National Government
194.	St. John Ambulance of Kenya	St. John Ambulance of Kenya Cap. 259	Encourage and promote all works of charity for the relief of persons in sickness, distress, suffering, and danger without any distinction of race, class, colour or creed	Interior and Coordination of National Government
195.	National Council for Persons with Disabilities	Persons with Disability Act, 2003	to formulate and implement policies that are geared towards mainstreaming Persons with	Labour, & Social Security Services

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			Disabilities in to the national economy	
196.	National Industrial Training Authority	Industrial Training Act Cap 237	to promote the highest standards in the quality and efficiency of industrial training in Kenya and ensure an adequate supply of properly trained manpower at all levels in industry	Labour, & Social Security Services Move to Industrialization and Enterprise Development
197.	National Social Security Fund Board of Trustees	National Social Security Fund Act, Cap 258	provide for contributions to and the payment of benefits out of the Fund; and for matters connected therewith and incidental	Labour, & Social Security Services
198.	The National Social Security Assistance Authority	Social Assistance Act, No.2013	Identify and provide social assistance to persons in need of social assistance;	Labour, Social Security & Services
199.	National Construction Authority	National Construction Authority Act No. 41 of 2011	To regulate and coordinate the construction industry for sustainable social and economic development	Lands Housing & Urban Development
200.	Research Development United Company Ltd	Companies Act Cap. 486	Research on housing and housing materials	Lands, Housing & Urban Development
201.	National Housing Corporation	Housing Act, Cap 117	to play a principal role in the implementation of the Government's Housing Polices and Programmes.	Lands, Housing & Urban Development
202.	National Bank of Kenya	Companies Act Cap. 486	Help Kenyans get access to credit and control their economy	National Treasury
203.	Privatization	Privatization Act, Cap	to formulate, manage, and implement the	National Treasury

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Commission	485C	Privatization Programme.	
204.	Consolidated Bank of Kenya	Companies Act, Cap 486	Provide banking services	National Treasury
205.	Kenya National Assurance Co. (2001) Ltd	Companies Act, Cap 486	Life assurance company to take over the assets and liabilities of the Closed Life Fund of the Kenya National Assurance Company Limited (under Liquidation).	National Treasury
206.	Kenya Reinsurance Corporation Ltd	Kenya Reinsurance Corporation Act, Cap 487	to undertake and transact in any manner reinsurance and insurance business in and out of Kenya	National Treasury
207.	Agricultural Finance Corporation	Agricultural Finance Corporation ActCap. 323	Development of agriculture and agricultural industries by making loans to farmers, groups and other persons engaging in agriculture or agricultural industries	National Treasury
208.	Industrial Development Bank	Companies Act, Cap 486	A Development Finance Institution (DFI)	National Treasury
209.	Kenya Post Office Savings Bank	Kenya Post Office Savings Bank Act No. 493 B	to encourage and facilitate personal saving among Kenyans	National Treasury
210.	Capital Markets Authority	Capital Markets Act, Cap 485A	Promoting, regulating and facilitating the development of an orderly, fair and efficient capital market in Kenya	National Treasury
211.	Insurance Regulatory Authority	Insurance act, Cap 487	Regulate the insurance industry	National Treasury
212.	Retirement Benefits	Retirement Benefits Act,	Regulate and supervise management of	National Treasury

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	Authority	No. 3 of 1997	retirement benefit schemes	
213.	Kenya Revenue Authority (KRA)	Kenya Revenue Authority Act, Cap 469	assessment and collection of revenue, for the administration and enforcement of the laws relating to revenue and to provide for connected purposes	National Treasury
214.	Deposits Protection Fund Board (now Kenya Deposit Protection Authority)	Banking Act, Cap 488 (also under the Kenya Deposit Insurance Act, No. 10 of 2012)	Provide a deposits insurance system and for the receivership and liquidation of deposit taking institutions	National Treasury
215.	Financial Reporting Centre	Proceeds of Crime and Anti-Money Laundering Act, 2009	Assist in the identification of the proceeds of crime and the combating of money laundering.	National Treasury
216.	Kenya Accountants & Secretaries National Examination Board (KASNEB)	Accountants Act, No. 15 of 2008	Examination of accountants and company secretaries and matters incidental thereto	National Treasury
217.	Kenya Trade Network Agency	Executive Order, Legal Notice No 6 of 2011	to implement, operationalise and manage the Kenya Electronic Single Window System and to facilitate trade in Kenya.	National Treasury
218.	Policy Holders Compensation Fund	Insurance Act, Cap 487 through the Insurance (Policyholders Compensation Fund) Regulations, 2010	To protect policy holders of an insolvent insurance company by providing them with compensation for unsettled claims	National Treasury

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
219.	Unclaimed Financial Assets Authority	Unclaimed Financial Assets Act, No. 40 of 2011	administer unclaimed financial assets	National Treasury
220.	Investor Compensation Fund Board	Capital Markets Cap 485	Administer Investor Compensation Fund	National Treasury
221.	Competition Authority	Competition Act, No. 12 of 2010	To promote and safeguard competition in the national economy; and to protect consumers from unfair and misleading market conduct	National Treasury
222.	Public Procurement Oversight Authority	Public Procurement and Disposal Act, No. 3 of 2005	(a) To ensure procurement procedures are complied with as established under the Public Procurement and Disposal Act, 2005 and Regulations, 2006. (b) Monitoring the overall functioning of the public procurement system including accountability and documentation of the procured items.	National Treasury
223.	Kenya Institute of Supplies Examination Board	Supplies practitioners management Act No. 17 of 2007	Prescribe and regulate syllabuses of instruction for professional supplies certification and conduct examinations for professional supplies certification	National Treasury
224.	Kenya Institute of Supplies Management	Supplies Practitioners Management Act No.17 of 2007	A national body for professionals in the practice of procurement and supplies management in Kenya for promoting learning, development of best practices, and application of the same to the practice of procurement and supply chain management	National Treasury

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
225.	Institute of Certified Secretaries of Kenya	Certified Public Secretaries of Kenya Cap 534	Promote standards of professional competence and practice amongst members of the Institute; Promote research into the subject of secretarial practices and finance and related matters and the publication of books, periodicals, journals and articles in connection therewith; Promote the international recognition of the Institute; Advise the Examination Board on matters relating to examination standards and policies	National Treasury
226.	Institute of Certified Public Accountants of Kenya	Accountants Cap 15	Promote standards of professional competence and practice amongst members of the Institute; Promote research into the subjects of accountancy and finance and related matters, and the publication of books, periodicals, journals and articles in connection therewith; Promote the international recognition of the Institute; Advise the Examinations Board on matters relating to examinations standards and policies; Advise the Minister on matters relating to financial accountability in all sectors of the economy;	National Treasury
227.	Local Authorities Provident Fund	Local Authorities Provident Fund Act, Cap 272	supervise, control and manage all the assets of the Fund	National Treasury
228.	Kenya Copyright Board	The Copyright Act, 2001	Oversee provision for copyright in literary, musical and artistic works, audio-visual works, sound recordings, broadcasts and for connected	Office Of The Attorney General & Department Of Justice

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S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			purposes	
229.	National Council for Law Reporting	National Council for Law Reporting Act, No. 11 of 1994	To Publish the Kenya Law Reports and related publications and to revise, consolidate and publish the Laws of Kenya	Office Of The Attorney General & Department Of Justice
230.	Kenya Law Reform Commission	Kenya Law Reform Commission Act, No. 19 of 2013	Review all the law and recommend its reform	Office Of The Attorney General & Department Of Justice
231.	Nairobi Centre for International Arbitration	Nairobi Centre for International Arbitration Act, No. 26 of 2013 to:	Provide for mechanisms for alternative dispute resolution	Office Of The Attorney General & Department Of Justice
232.	Council for Legal Education	Legal Education Act, No. 27 of 2012	Regulation and licensing of legal education providers and for connected purposes	Office of The Attorney General & Department Of Justice
233.	Kenya School of Law	Kenya School of Law Act, 2011	public legal education provider responsible for the provision of professional legal training as an agent of the Government	Office of The Attorney General & Department Of Justice
234.	National Crime Research Center	The National Crime Research Act Chapter 62	Carry out research into causes of crime and its prevention and to disseminate research findings and recommendations to agencies of Government concerned with administration of criminal justice with a view to assisting them with their policy formulation and planning.	Office Of The Attorney General & Department Of Justice
235.	Law Society of Kenya	Law Society of Kenya Cap 18	to maintain and improve the standards of conduct and learning of the legal profession in Kenya; (b) to facilitate the acquisition of legal knowledge by members of the legal profession and others;	Office Of The Attorney General & Department Of Justice

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(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			(c) to assist the Government and the courts in all matters affecting legislation and the administration and practice of the law in Kenya; (d) to represent, protect and assist members of the legal profession in Kenya in respect of conditions of practice and otherwise; (e) to protect and assist the public in Kenya in all matters touching, ancillary or incidental to the law;	
236.	Kenya Academy of Sports	Sports Act, No. 25 of 2013	Establish and manage sports training academies	Sports, Culture & The Arts
237.	National Museums of Kenya	National Museums and Heritage Act, Cap No. 6 of 2006	to collect, preserve, study, document and present Kenya's past and present cultural and natural heritage for the purposes of enhancing knowledge, appreciation, respect and sustainable utilization of these resources for the benefit of Kenya and the world, for now and posterity	Sports, Culture & The Arts
238.	National Youth Council	National Youth Council Act 2009	Regulate and coordinate youth activities and policies	Sports, Culture & The Arts
239.	The Kenya Cultural Center	The Kenya Cultural Center Cap. 218	Provide a center for use and enjoyment of citizens of Kenya without distinction as to race, colour or creed	Sports, Culture & The Arts
240.	Sports Kenya	Sports Act, No. 25 Of 2013	establishment of sports institutions, facilities	Sports, Culture & The Arts
241.	Kenya Film Classification Board	Films and Stage Plays Act, Cap 222	Regulating and controlling the making and exhibition of cinematograph films, for the licensing of stage plays, theatres and cinemas	Sports, Culture & The Arts

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
242.	Kenya National Library Service (KNLS)	Kenya National Library Services Board Act, Cap 225	Provide public library services	Sports, Culture & The Arts
243.	Kenya Film Commission	State Corporations Act, Cap 446 through Kenya Film Commission Order, 2005	Development, and promotion of the film industry in Kenya	Sports, Culture & The Arts Technology
244.	Kenya Rural Roads Authority	Kenya Roads Act, Act No. 2 of 2007	charged with the responsibility for the management, development, rehabilitation and maintenance of rural roads, including	Transport & Infrastructure
245.	Kenya Urban Roads Authority	Kenya Roads Act, Act No. 2 of 2007	To collect, preserve, study, document and present Kenya's past and present cultural and natural heritage. This is for the purposes of enhancing knowledge, appreciation, respect and sustainable utilization of these resources for the benefit of Kenya and the world, for now and posterity	Transport & Infrastructure
246.	Kenya National Shipping Line	Companies Act, Cap 486 Merchant Shipping Act, 1989	Provision of ocean freight between Kenya and global world	Transport & Infrastructure
247.	Kenya Ports Authority (KPA)	Kenya Ports Authority Act, Cap 391	Provide a coordinated system of ports and facilities relating thereto.	Transport & Infrastructure
248.	Kenya Railways Corporation (KRC)	Kenya Railways Corporation Act, Cap 397	To provide rail and inland waterways transport	Transport & Infrastructure
249.	Kenya Airports Authority (KAA	Kenya Airports Authority Act, Cap 395	Facilitate, develop and operate infrastructure for aviation	Transport & Infrastructure

(Executive Office of the President, 2013)

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
250.	Kenya Ferry Services Ltd (KFS)	Companies Act, Cap 486	Carry on a ferry boat service	Transport & Infrastructure
251.	Kenya National Highways Authority (KeNHA)	Kenya Roads Act, Act No. 2 of 2007	Management, development, rehabilitation and maintenance of national roads	Transport & Infrastructure
252.	Kenya Civil Aviation Authority (KCAA)	Civil Aviation Act, Cap 394	To plan, develop, manage, regulate and operate a safe, economical, and efficient civil aviation system in Kenya	Transport & Infrastructure
253.	Kenya Maritime Authority	State Corporations Act, Cap 446 through Kenya Maritime Authority Order, 2004	Regulate, co-ordinate and oversee maritime affairs	Transport & Infrastructure
254.	National Transport & Safety Authority	National Transport and Safety Authority Act, 2012	regulate the road transport system	Transport & Infrastructure
255.	Physical Planners Registration Board	Physical Planners Act No. 3 of 1996	Register eligible persons to practice as physical planners Set and conduct examinations for purpose of registration Enquire into professional misconduct of members	Transport & Infrastructure
256.	Engineers Registration board	ACT NO. 43 of 2011 - Engineers Act	Receive, consider, make decisions on applications for registration and register approved applications; Keep and maintain the Register; Publish the names of registered and	Transport & Infrastructure

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
			licensed persons under this Act; Issue licences to qualified persons under the provisions of this Act; Publish and disseminate materials relating to its work and activities; Carry out inquiries on matters pertaining to registration of engineers and practice of engineering	
257.	Architects and Quantity Surveyors Registration Board	Architects and Quantity Surveyors Cap 525	Registrar shall keep and maintain a register in which the name of every person, being suitably qualified under this Act, shall be entered as soon as is practicable after he is accepted by 'the Board for registration, showing against his name such particulars as the Board may, from time to time, direct	Transport & Infrastructure
258.	Kenya Roads Board (KRB)	Kenya Roads Board Act, Cap 408	oversee the road network in e Kenya and coordinate the maintenance, rehabilitation and development funded by the Fund and to advise the Minister on all matters related thereto, and specifically	Transport & Infrastructure
259.	Simlaw Seeds Kenya Ltd (Subsidiary of Kenya Seed Co.	Companies Act, Cap 486	Production and distribution of horticultural seeds	Agriculture, Livestock & Fisheries
260.	Simlaw Seeds Uganda Ltd. (Subsidiary of Kenya Seed Co.)	Companies Act	Production and distribution of horticultural seeds	Agriculture, Livestock & Fisheries
261.	Simlaw Seeds Tanzania	Companies Act	Production and distribution of horticultural seeds	Agriculture, Livestock & Fisheries

S. NO	STATE CORPORATION	ENABLING LEGISLATION	MANDATE	MINISTRY
	(Subsidiary of Kenya Seed Co.)			
262.	Lands Limited (subsidiary of Agricultural Development Corporation)	Companies Act Cap. 486	Owns land for Agricultural Development Corporation	Agriculture, Livestock & Fisheries

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(Executive Office of the President, 2013)

Appendix Six: Sample Distribution of each Targeted Respondent based on each Targeted State Corporation

SAMPLE SIZE DISTRIBUTION ON EACH STATE FIRM									
State Firm	Financial Director Sample size distribution	Head of Internal Audit Sample size distribution	Accountants Sample size distribution	Internal Auditors Sample size distribution	State Firm	Financial Director Sample size distribution	Head of Internal Audit Sample size distribution	Accountants Sample size distribution	Internal Auditors Sample size distribution
1	1	1	1	2	37	1	1	1	2
2	1	1	1	2	38	1	1	1	2
3	1	1	1	2	39	1	1	1	2
4	1	1	1	2	40	1	1	1	2
5	1	1	1	2	41	1	1	1	2
6	1	1	1	2	42	1	1	1	2
7	1	1	1	2	43	1	1	1	2
8	1	1	1	2	44	1	1	1	2
9	1	1	1	2	45	1	1	1	2
10	1	1	1	2	46	1	1	1	2
11	1	1	1	2	47	1	1	1	2
12	1	1	1	2	48	1	1	1	2
13	1	1	1	2	49	1	1	1	2
14	1	1	1	2	50	1	1	1	2
15	1	1	1	2	51	1	1	1	2
16	1	1	1	2	52	1	1	1	2
17	1	1	1	2	53	1	1	1	2
18	1	1	1	2	54	1	1	1	2
19	1	1	1	2	55	1	1	1	2
20	1	1	1	2	56	1	1	1	2
21	1	1	1	2	57	1	1	1	2
22	1	1	1	2	58	1	1	1	2
23	1	1	1	2	59	1	1	1	2
24	1	1	1	2	60	1	1	1	2
25	1	1	1	2	61	1	1	1	2
26	1	1	1	2	62	1	1	1	2
27	1	1	1	2	63	1	1	1	2
28	1	1	1	2	64	1	1	1	2
29	1	1	1	2	65	1	1	1	2
30	1	1	1	2	66	1	1	3	3
31	1	1	1	2	67	1	1	3	3
32	1	1	1	2	68	1	1	3	3
33	1	1	1	2	69	1	1	3	3
34	1	1	1	2	70	1	1	3	3
35	1	1	1	2	71	1	1	3	3
36	1	1	1	2	72	1	1	5	5
TOTAL						72	72	88	155

Source: Researcher (2019)

Appendix Seven: Turnitin Results