

**EFFECT OF FORENSIC ACCOUNTING SERVICES ON FRAUD MITIGATION IN
FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA**

BY

FLORENCE CHEPNGENO KIRUI

MASTER OF SCIENCE IN COMMERCE (FINANCE AND ACCOUNTING)

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REG. NO: 17/04709

**A DISSERTATION SUBMITTED IN PARTIAL FULLFILMENT OF THE
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30TH

OCTOBER 2019

DECLARATION

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

Student name: Kirui Florence Chepngeno

Reg. No. 17/04709

Signature _____

Date _____

I do hereby confirm that I have examined the master's dissertation of

Kirui Florence Chepngeno

And have certified that all revisions that the dissertation panel and examiners recommend have been adequately addressed.

Signature _____

Date _____

Dr. Fred Sporta

Lecturer, KCA University

ABSTRACT

Due to the alarming increase in corporate fraud around the world, forensic accounting has in the recent past become an important area of discussion among academics and stakeholders of different organizations. Corporate fraud is reported as being the problematic issues for business organizations and as a result, several instances of collapse of big companies have been witnessed globally in the recent past. This is attributed to inadequacy of the statutory audit in detection of fraud. This study sought to establish the effects of forensic accounting services on fraud mitigation in firms listed at the Nairobi Securities Exchange. The target population comprised of all firms listed at the NSE that have evidently used forensic accounting services. The study employed a non-probability sampling (purposive sampling) technique to choose the sample frame. Primary data was collected from purposively selected staff working with the aforesaid firms. The collected data was analyzed using both descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS) version 25 and Statistics and data (STATA) version 13 analytical tools. Diagnostic tests were carried out for multicollinearity and heteroscedasticity. The results of the analyses were presented in tabular form and were accompanied by pertinent interpretations and discussions. The study revealed that, there existed significant correlations between litigation support services, forensic data analysis and fraud awareness with fraud mitigation. The study recommends that listed firms should ensure that they have accountants with forensic accounting skills and analytical capacity in order to control and mitigate fraudulent activities.

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DEDICATION

My special dedications go to my husband Simon Kirui for his moral and financial support during my study program. The same goes to my three sons namely, Anord Kosgei, Franklin Cheluget and Eric Kiprop for their continuous prayers, encouragement and financial support as well. May the Almighty God bless them abundantly.

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ACRONYMS AND ABBREVIATIONS

ANOVA:	Analysis of variance
CLM:	Classical Linear Model
FDT:	Fraud Diamond Theory
FTT:	Fraud Triangle Theory
GAAP:	Generally Accepted Accounting Principles
ISA:	International Standards on Auditing
KPMG:	KPMG stands for Klynveld Peat Marwick Goerdeler,
NSE:	Nairobi Securities Exchange
SPSS:	Statistical Package for the Social Sciences

TERMS AND DEFINITIONS

Forensic accounting: Webster's dictionary defines forensic accounting as the integration of accounting, auditing and investigative skills. It provides an accounting analysis that is suitable to the court which will form basis for discussion, debate and ultimately dispute resolution. Adegbie and Fakile (2012) described forensic accounting as the application of investigative and analytical skills in a manner that meets standards required by courts of law.

Forensic accounting services: Aigienohuwa, Okoye and Uniamikogbo (2017) explained forensic accounting services to involve the application of special skills in auditing, accounting, quantitative methods, finance, specific areas of law, information and computer technologies research and investigative skills to collate, analyze and evaluate evidential matter which in the forensic area is called the evidence.

Forensic Analysis: Analysis of accounting information means identifying misappropriations, asset recovery analysis, and reconstruction of financial documents, solvency analysis and transactional tracing Ojo (2012).

Fraud: According to (Chartered Institute of Public Finance and Accountancy, n.d) fraud means any intentional false representation including failure to declare information or abuse of position that is carried out to make gain, cause loss or expose another to the risk of loss. Enofe, Ekpulu and Ajala (2015) gave examples of fraud as employee embezzlement, vendor fraud which is a type of external fraud usually in the form of

overcharge for purchased goods, over-invoicing, shipment of inferior good or the non-shipment of goods even though payment was made.

Fraud Awareness: This refers to steps taken to enlighten the employees on issues to do with fraud, how it can be prevented, controlled, and the consequences of engaging in fraudulent activities.

Fraud mitigation: Mitigation means reducing risk of loss from the occurrence of any undesirable event.

Litigation Support: According to Owojori et al. (2009) litigation support services represent the factual presentation of economic issues to existing litigation and that the forensic accounting professional quantify damages sustained by parties involved in legal disputes even before they reach the courtroom, thus may testify as an expert witness when a dispute reaches the courtroom.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Due to the alarming increase in corporate fraud around the world, forensic accounting has in the recent past become an important area of discussion among academics and stakeholders of different organizations. Though the concept of forensic accounting dates back to 1800s, it was not until the collapse of big companies such as Enron that some legislations like the Sarbanes Oxley was brought into existence, increasing the demand for forensic accounting services (Mammen & Edakalathur, 2019). Blodget (2011) attributed the collapse of the big corporations to financial mismanagement and inadequacy of the statutory audit, citing the case of Longtop financial fraud where the revenue reported was erroneous but not discovered by the regular audits. Noorhayati and Abdullahi, (2015) asserted that corporate fraud is reported as being the problematic issues for business organizations and that as a result, several instances of collapse of big companies have been witnessed globally in the recent past. Similarly, (Blodget, 2011) noted that fraud, corruption and other irregularities are some of the issues that affect the global village thoughtless of the country, industry or size. The persistent failure to uncover errors by auditors has raised much discussion and forensic accounting has become a great discussion ground for academic, research and industries in an effort to mitigate this fraud menace that results from financial accounting. Kasum (2009) claim that issues that are related to fraud and financial crimes were found to be solved significantly by use of forensic accountants and their services. Similarly, Okoye and Gbegi (2013) advised that forensic accountants need to replace the external auditors.

Zou (2016) purported that China has had nasty cases of financial frauds in listed companies occurring more frequently and as a result, investors are shying away whereas the

normal operation of the securities exchange has also been affected negatively. Zou (2016) attributed the cases of fraud in China listed firms to lack of legal awareness of the management staff, reduction of the audit procedures and lack of due diligence investigation before listing the company. Chen (2016), who sought to examine the scandals facing foreign firms listed in the US and the audit quality opined that shareholders of firms which are involved in the scandals experience substantial loss. Ocansey (2017) quoted the Federal Bureau of Investigation of United States of America that estimated that more than three hundred billion dollars is lost annually to fraud and many of these crimes are difficult to identify due to the concealment of the perpetrators' activities. Alabdullah, Alfadhl, Yahya and Rabi (2014) in their study in Malaysia, pointed that many companies globally have been affected by fraud scandals and they seem to be happening on a daily basis resulting in lack of confidence in the financial markets of the countries. According Noorhayati and Abdullahi (2015) corporations in Malaysia are reported to have suffered a lot from cases of employee fraud than other countries of the world resulting in negative reputation; low staff morale and financial performance of the affected companies have declined. Research carried out by KPMG-Singapore (2014) on corporate fraud, revealed that more than a quarter of companies surveyed in Singapore have experienced corporate fraud in the years 2012 and 2013. From the aforementioned studies, it can be deduced that fraud affects even those companies found in the developed countries.

Developing countries have not been spared too and cases of frauds are on the increase in the listed companies. Agbaje and Adeniran (2017) in their study found out that incidences of fraudulent activities exist in quoted companies in Nigeria and that since the auditors are answerable to the management, their independence is compromised. Ehioghiren and Atu (2016) in their scholarship revealed that fraudulent practices in Nigeria are key challenges facing the country's development and the result is that stakeholders have been affected

negatively by the crimes pertaining finances. Efforts to curb the dangers of fraud in Nigeria by setting up of institutions of anti-corruption have played an insignificant role (Okoye, 2013). Okoye and Gbegi (2013) claim that employee fraud and other financial frauds require the accounts to have skills that can enable them to identify those crimes.

Like in the other developing countries, Kenya which is one of the developing economies is reported to be ahead in terms of corruption and is leading the world in occupational fraud, a major corporate crime, with an incidence of 66%, which is about twice the global average of 34% (Kimani, 2015). Most of the governmental and non-governmental organizations have been dominated by the increase of fraud rates and the economic environment has been greatly affected by the increase in fraud (Opiyo, 2017). Kamau (2015) revealed that the management of Mumias Sugar Company Ltd. which is one of the listed companies at NSE could not account for millions of money, while those of CMC motors allegedly siphoned all the money to an offshore account. In similar sentiment, Kinyua, Gakure, Gekara and Orwa (2015) opine that the CMA 2014 statistics show that the financial performance of most quoted firms in Kenya have been declining due to the effect of fraudulent activities with the record of losses for the companies given as, Kenya Airways Ltd. Ksh. 10b, Uchumi supermarkes Ltd. Ksh. 226m, Mumias Sugar Co. Ltd. 3.4b, and Eveready East Africa Co. Ltd. 248m. Mpiana (2017) articulated that in Kenya, many corporate scandals perpetrated by the management staff abound the media and that some of the listed companies for instances are on the verge of collapsing as a result. A review of the studies shows an indication that fraud is rampant in the Kenyan listed companies. Meshack (2016) revealed that the auditors could not uncover the fraudulent activities claiming that unlike forensic accountants who examines the companies' financial statements to identify any potential weaknesses in the system, their only concern is to add credibility by expressing an independent opinion and whether the information in the financial statements have been

presented fairly and free of material misstatement. Meshack (2016) further claimed that a forensic auditor examines a company's system of internal controls to identify any weaknesses in the systems designed to safeguard assets and to determine whether anyone in the company has exploited control weaknesses to misappropriate assets for personal gain.

1.1.1 Forensic Accounting Services

Saidu (2015) defined forensic accounting as the application of analytical, arithmetical, auditing and investigative skills acquired by an accountant in evidence gathering and adjudication for legal matters, without causing harm to the culprit. Forensic accounting can also be known as investigative or fraud audit or even judicial accounting and is the unification of accounting, auditing, investigation and law (Adegbie & Fakile, 2012; Akinyomi, 2010; Ocansey, 2017; Aigienohuwa, Okoye & Uniamikogbo, 2017). According to Modugu and Anyaduda (2013), forensic accounting is the application of accounting concepts to legal problems and demands reporting, which is considered as evidence in a court of law.

Okoye and Ndikika (2009) gave examples of forensic accounting services to include; investigating and analyzing of financial evidence and assisting the juries in legal proceedings. According to Aigienohuwa, Okoye and Uniamikogbo (2017) forensic accounting services is the application in specific areas of law, the measurement methods, computer expertise, accounting as well as auditing skills to assist in collating, analyzing and evaluating proof of a matter which is called evidence in the forensic area. Enofe, Ekpulu and Ajala (2015) pointed that beyond expressing a true and fair view opinion of the organization's financial statement, the forensic auditor goes beyond the routine audit to conduct a massive investigation into the material in question, develops intuitive intentions and is willing to ask question in order to dig deep into the investigation at hand with the use of the control system in place and extensive testimonial evidence gathered to reach conclusion on certain investigation thus unravel fraud perpetrated earlier. Omondi (2013) assert that forensic accounting services

involve drawing conclusion, calculating the amount of loss that results from the whole process of identifying the fraudsters coming up with the evidence and presenting it to the court of law.

1.1.2 Fraud Mitigation

The use of one's occupation to enrich themselves or those close to them by using public resources and assets, or deliberately misusing of resources is what Association of Certified Fraud Examiners (2010) defines as fraud. Oyebisi, Olusogo and Ifeoluwa (2018) defines fraud as a way that causes suffering loss to an innocent individual by a person who has clear knowledge of his intentions of deceiving the other person through misuse or stealing of company resources. Okoye, Maimako, Jugu and Jat (2017) claim that fraud can involve exclusion of facts, forgery, dishonesty and can be written or oral with an intention of gaining advantage from it. Albrecht (2008) pointed out that deception involve a volume of actions for example corruption, bribe and worker fraud upon an organization. The aforementioned definitions about fraud seem to agree that it involves cheating in order to have monetary gain over another person whether a natural or legal person. Enofe, et.al.(2015) gave examples of fraud as employee embezzlement, vendor fraud which is a type of external fraud usually in the form of overpricing of procured stock, over-invoicing, delivery of substandard goods or the non-shipment for goods that have already been paid for. Arguably, some forms of fraud include forging creditors, paying ghost workers, faking sales, writing off the debtors' accounts without authority and making false claims (Akinyomi, 2010). Ozkul and Pamuku (2012) put forward that fraud possibly will engage the modification of substantial monetary reports, intentional misstatements and misrepresentation of events, deliberate misapplication of accounting standards and principles in order to permit corporations to conceal the financially viable matter of their achievements.

The effect of fraud has a chain reaction on the community as a whole since it goes a long way to determine its success and can lead to public criticism as well as increased operating expense (Yego, 2016). According to Nipion (2015) fraud can lead to bankruptcy, reduced income and can affect the economic system of a country. The same sentiment was echoed by (Isa, 2011) who purport that financial fraud will damage the real economy in different areas. Okonkwo and Ezegbu (2016) alleged that the scam has become an unfortunate staple in Nigerian's international reputation and that it make staff scared of making some decisions because they are afraid of being connected in a business matter.

Fraud mitigation is described as fast actions that are intended to reduce the extent of the fraud, the amount of the associated fraud losses, and the effort and expense required to recover and correct the impact of the fraudulent activity. The success of fraud mitigation is in the appropriate identification of red flags by the forensic auditor (DiNapoli, 2016). A red flag refers to an anomaly in business activities and human behavior. However, their presence is not evidence that an illegal act has happened, but they simply indicate that the potential for fraud is high to warrant an investigation. DiNapoli (2016) gives examples of red flags for fraud, the most common being the changes in behavior of employees and management. Apart from assisting companies to avert the loss of income, setting up valuable management procedures against fraud also plays a role in improving the quality of the companies' goodwill in the industry (Yego, 2016). According to Isa (2011) fraud mitigation mechanisms may reduce the number of fraud cases. According to Effiong (2012) identifying issues that induce frauds to occur by knowing who the perpetrators are and why they are committing fraud is imperative for businesses prior to working hard in an attempt to decrease fraud as well as controlling the menace practically.

One of the major factors to consider when mitigating fraud is the opportunity. Opportunity can be termed as when internal controls come into play (Okoye, 2013). Chimwene (2017) pointed out that fraud is mostly committed by those employees who due to having worked longer in an organization and in various departments are believed to be honest and cannot do any harm. Due to their trust, there is laxity in safeguarding the internal controls which creates opportunity for these employees to commit fraud. The Kenya Integrity plan (2015) highlighted some of the factors that contribute to corruption in which fraud is one of the offences that constitute it to include; poor governance, lack of balances checks, weak enforcement of policies and laws, political patronage, greed and unfettered discretionary powers among others. According to Akani and Oladutire (2013) fraud is a product of poor internal control systems in organizations and can be reduced if there is an efficient and effective system in place. Okoye (2013) assert that there are very less opportunities for employees of a company to commit fraud where a company has come up and implemented more mitigation strategies. If opportunities for committing fraud are eliminated then fraud can greatly be mitigated in the firms.

The other factor that needs to be considered in fraud mitigation is the presence of pressure among employees. Hooper and Pornelli (2010) assert that pressure is something that has happened in the fraudster's personal life that creates a stressful need of funds and urges that person to steal. He further says that it can be caused by almost anything including family situations, medical bills, expensive tastes, extra-marital affairs or addiction problems. According to (Brumell, 2010) pressures can include money problems, gambling debts, alcohol or drug addiction, overwhelming medical bills and greed. He further says that by identifying any possible pressures that the company could have an impact on such as money problems, substance abuse, among others can relieve these issues and can help

reduce criminal behavior. Listed firms should therefore ensure that they identify any possible pressures among their employees in order to mitigate fraud.

Rationalization can involve someone trying to justify the reasons for committing fraud in various or certain circumstances and could be strong like in a case where money is seriously needed to cater for medical bills in case of an emergency or even where someone may die in a ransom case and money is desperately needed (Modugu & Anyaduba, 2013). According to Akinyomi (2010) fraud is committed at the top management level by persons along with workers or customers and may be the product of distortion of the books of accounts. According to Brummell (2015) it is important for companies to create a zero tolerance policy towards fraudulent behavior as this will make it more difficult for perpetrators to engage in fraudulent activities because of the consequences. Omondi (2013) in his study about frauds by commercial banks in Kenya affirmed that the body that governs the banking sector has been forced to improve its regulations due to the loss of confidence that has resulted from financial and non-financial statements frauds as the commercial banks in Kenya have been faced by numerous scandals in the recent years. This should also apply to the firms listed at the NSE.

1.1.3 Forensic Accounting Services and Fraud Mitigation

Madan (2013) argue that due to the fact that business setting is evolving in high rates, businesses are expected to change their approaches from the conventional approach that only requires them comply with the GAAP. Madan (2013) reiterates companies are required to do regular checkups to their employees so that it can be much easier for them to notice their changes in both behavior and lifestyle in order to prevent future meltdowns and to guaranteeing transparency and honesty. Koh, Arokiasamy and Suat (2009) on their study about the significance of forensic accounting in Malaysia put forward that the anti-graft agencies and the government of Malaysia utilizes forensic accounting services to establish

any probable cases and illegal actions by companies. Koh et.al (2009) further says this is because the developing countries are the places where most robberies of the state monies are being stolen and the people who are supposed to protect them are the same people that steal using computer because they know that in doing so that they can never be found. Alabdullah, Alfadhil, Yahya and Rabi (2014) in their research in Iraq noted that corruption requires sophisticated ways to understand modern methods.

Ehioghiren and Atu (2016) further argued and that the accounting bodies have embraced a new accounting paradigm that goes beyond the statutory audit. In a similar reaction (Ocansey, 2017) argued that in response to fraud, many governments have championed the fight against economic frauds in the history of Ghana. He says Ghanaian governments seek to ensure assets declaration of all government officials, strengthen the mandate of the auditor-general and use of technology to in order to mitigate frauds. This calls for more rigorous measures to be put in place by the firms listed at the NSE in order to mitigate this fraud menace.

Okoye and Gbegi (2013) by examining the effectiveness of forensic accounting services in fraud prevention revealed that it is a tool that majorly mitigates the happening of frauds in public companies. Ofiafoh& Otor (2013) claim that compared with the normal audit which only seeks to unearth significant divergence in the financial information, forensic auditing is more inclusive because it centers on the materiality of the transactions. They further noted that for easy prosecution of the perpetrators, forensic accounting services should be considered by the concerned anti-corruption bodies. The research of (Oyedokun, Enyi & Dada, 2018) revealed that the strength of the internal control jobs is attributed to the forensic accounting techniques included. Ijeoma (2015) discovered the existence of strong evidence of the forensic methods used on fraud mitigation and that confidence about the

trustworthiness of companies has been brought back by the use of forensic accounting services. He further says that financial frauds are investigated through ensuring that accounting principles are applied, legal problems are well solved through effective auditing skills and investigative processes and that controlling institutions, courts and lawyers have benefited so much from forensic accounting services.

Issues that are related to fraud and financial crimes were found to be solved significantly by use of forensic accountants and their services through the study done in the third world economies on the relevance of forensic accounting to financial crimes by Kasum (2009). The study recommended the use of forensic accountants' services in the public institutions in order to strengthen the power of mitigating fraud. Aduwo, (2016) found out in his study that companies can make use of forensic accounting services to reverse seepages that cause corporations to collapse since it is effective in searching for errors and abnormal transactions early enough.

Ebimobowei and Onuorah (2012) examined forensic accounting services' effect on reduction of fraud cases and the results of the study showed that the services presented the means needed to mitigate fraudulent actions. More suggestions were provided by Okoye and Gbegi (2013) who advised that forensic accountants need to replace the external auditors in all ministries in Kogi state. Alhassan and Adjei(2017) maintain that forensic experts and investigators have helped nations around the globe to help retrieve and put behind bars people that uses the computer to steal and conceal vital information that cause nations billions of dollars of taxpayers' monies. It was revealed that there is a need for more forensic investigator in Ghana and other less developed countries to help build the next generation of leaders with integrity; setting up of more forensic lab; need for more forensic experts and the latest forensic equipments that will help in speedy analysis and legal backing.

According to Kiprono (2018), the public sector units in Kenya have been ruined with fraudulent activities in the recent past and have cost big losses of not less than four billion Kenya shillings to the taxpayers annually. Kiprono (2018) further claim that the fraud menace has resulted in the reduced performance in the public sector which is attributed to weak systems used when dealing with financial issues and poor fraud mitigation strategies. In their separate work, (Omondi, 2013; Kimani, 2015 and Opiyo, 2017) jointly agreed that by employing the work of forensic accountants, fraud mitigation has improved significantly. Ogutu (2016) sought to examine how fraud can be mitigated by use of the forensic accountants auditing skills with relevant to the Kenyan accounting firms. In his findings, he highlighted that the services of forensic accountants were needed in order to mitigate fraud at ninety seven per cent. In view of the aforementioned studies, it is evident that forensic accounting is the way to go and the Kenyan government should embrace it in order to eradicate the cases of fraud in the listed firms at the NSE.

1.1.4 Firms Listed at the Nairobi Securities Exchange

The Nairobi Securities Exchange operates under the jurisdiction of the Capital Markets Authority with an objective of endowing companies with instruments which enables them in raising capital for expansion. It is a securities exchange that is growing faster in the African Sub-Saharan economies as compared to other exchanges. According to the NSE handbook (2019) there are 61 companies listed at the Nairobi Securities Exchange. The companies are listed under various sectors based on their business type as shown in appendix II.

Corporate fraud has become a major concern among the listed companies at the NSE and has resulted in a negative impact on potential investor confidence. Kurant (2014) assert that corporate fraud negatively affects the share price of a specific company since for fear of being associated with fraudulent companies, investors start selling their shares to those who

are interested in buying. Similarly, because of the bad reputation caused by involvement of fraudulent activities, investors will shy from investing their money on such companies resulting in decrease in the firm's liquidity and making it unable to meet its obligations (Cremer, 2016). Research has shown that the five selected firms have evidently used the services. (Mpiana, 2017; Meshack, 2016 and Kinyua et.al.) postulated that the directors of some of the troubled listed firms in Kenya including; Mumias sugar Co. Ltd., National Bank of Kenya Ltd., Kenya Airways Ltd., Uchumi Supermarkets Ltd. and East African Portland Cement called in forensic accountants to assist unearth issues in the financial statement that the auditors were unable to achieve.

1.2 Statement of the problem

The Organization for Economic Co-operation and Development (2014) shows that in the absence of corruption in the business environment, investors will be certain and would be willing to invest their resources in such businesses. Research has shown that the probability of foreign direct investment points higher in countries that are free of corruption (Javorcik & Wei, 2009). Firms listed at the NSE are significant participants in the securities sector and in the Kenyan economy as a whole. Without frauds, these firms would benefit a lot since more investors would invest their resources there leading to increase in revenue (Kamau, 2015). In addition, it would benefit the Kenyan economy by enhancing the achievement of Vision 2030 which aimed at achieving an average gross domestic product (GDP) growth rate of ten percent per annum beginning 2012.

The CMA (2014) statistics shows that the financial performance of most quoted firms in Kenya have been declining due to the effect of fraudulent activities. Noteworthy, the problem has been attributed to collusion of the auditors with the management to falsify the companies' financial statements in order to defraud the shareholders Kimani (2015). According to Meshack (2016) auditors could not uncover the fraudulent activities because

their only concern is to add credibility to the financial statements by expressing an independent opinion. The magnitude of the financial losses to the companies caused by the fraudulent activities is in terms of millions or billions, and such examples of the companies would include Kenya Airways Ltd. Ksh. 10b loss, Uchumi supermarkes Ltd. Ksh. 226m loss, Mumias Sugar Co. Ltd. 3.4b loss, and Eveready East Africa Co. Ltd. 248m loss (Kinyua, Gakure, Gekara & Orwa, 2015). Kiprono (2018) affirmed that the fraudulent activities have cost big losses of not less than four billion Kenya shillings to the taxpayers annually.

According to Kamau (2015) the persistent failure to uncover errors by auditors has led to loss of faith by the public. Similarly, Yego (2016) put forward that the effect of fraud has a chain reaction on the community as a whole since it goes a long way to determine its success and can lead to public criticism as well as increased operating expense. In their separate work, (Omondi, 2013; Kimani, 2015; Opiyo, 2017& Ogutu, 2016) jointly agreed that the services of forensic accountants were needed in order to mitigate fraud. Ijeoma (2015) discovered that confidence about the trustworthiness of companies has been brought back by the use of forensic accounting services.

There are various studies carried out in Kenya on the effectiveness of forensic accounting services. These studies focused on insurance companies (Kamau, 2015), accounting firms (Ogutu, 2016), Kenyan parastatals (Opiyo, 2017), the manufacturing sector of the NSE (Kimani, 2015), commercial banks (Omondi, 2013) and public companies (Meshack, 2016). Kamau (2015) examined effects of forensic accounting services on fraud prevention. Other studies on the effectiveness of forensic accounting services on fraud mitigation were done by Agbaje and Adeniran (2017), whereas Ocansey (2012) studied on forensic accounting services effectiveness in combating of economic crime. However, these studies were carried out in other countries. Whereas research has revealed fraud as being rampant among the listed companies at NSE, it appears as if little has been contextualized

about the effect of forensic accounting services on fraud mitigation in the firms listed at the Nairobi Securities exchange. A knowledge gap relative to the foregoing therefore exists. It is in the light of this gap that the researcher based the study.

1.3 Objectives of the Study

The general objective of the study was to establish the effect of forensic accounting services on fraud mitigation in the listed firms at the Nairobi Securities Exchange. It was guided by the following specific objectives.

- i. To ascertain the effect of litigation support services on fraud mitigation in firms listed at the Nairobi Securities Exchange
- ii. To determine the effect of forensic data analysis on fraud mitigation in firms listed at the Nairobi Securities Exchange
- iii. To establish the effect of fraud awareness on fraud mitigation in firms listed at the Nairobi Securities Exchange

1.4 Research Questions

- i. What is the effect of litigation support services on fraud mitigation in firms listed at the Nairobi Securities Exchange
- ii. What is the effect of forensic data analysis on fraud mitigation in firms listed at the Nairobi Securities Exchange
- iii. What is the effect of fraud awareness on fraud mitigation in firms listed at the Nairobi Securities Exchange

1.5 Significance of the Study

The reviewed studies have revealed that fraud committed among NSE listed firms and in other parts of the world is rampant and has become the order of the day. The findings of the study will assist the following among other potential readers.

1.5.1 Policy Makers

The findings will benefit the Capital Markets Authority formulating policies relating to fighting of the fraud menace, by ensuring that there are proper guidelines and regulations and that the persons handling fraud perpetrators are well equipped with the necessary skills.

1.5.2 Kenya government

In addition, this study can act as a references point for the Kenya government to establish forensic units in internal audit departments of the local governments to reinforce their internal controls and ensure a comprehensive investigation of frauds.

1.5.3 Ethics and anti-corruption commission

It will help the Ethics and anti-corruption commission and other anti-graft agencies to prevent fraud cases thrown out of court for lack of sufficient evidence, since forensic accountants have the skills to provide evidence needed.

1.5.4 The Courts

Since forensic accountants perform an investigative analysis of financial information, the study will provide litigation support services by helping lawyers who may not have an accounting knowledge, as well enhancing easy judgment of the culprits in the courts. Performing electronic investigations will offer the jurors the opportunity to overcome the problem of inadmissibility of digital evidence presented before the court.

1.5.5 Listed Companies

The study will play a significant role is assisting the companies listed at the NSE and those that are planning to be listed on how they can mitigate corporate fraud and attract more investors in their companies.

1.5.6 Academic researchers

Future academic researchers will benefit from the results of this study since they will use the information in the generalization of knowledge.

1.6 Scope of the study

The target population for this study constituted all the 61 firms listed at the Nairobi Securities Exchange as at June, 2019 as shown in appendix II. However, only 5 listed firms (Kenya Airways Co. Ltd, Mumias Sugar Co. Ltd, East African Portland Cement Ltd, National Bank of Kenya Ltd, and Uchumi Supermarkets Ltd) were included in the study since the others did not meet the selection criteria. Objectively, the study will be limited to three independent variables (litigation support services, forensic data analysis and fraud awareness) and a dependent variable which is fraud mitigation in firms listed at the NSE which forms the unit of analysis.

1.7 Limitations of the study

Limitations of the study is that, whereas research has revealed fraud to be rampant in the firms listed at the NSE, only five firms were found to have evidently used forensic accounting services out of a population of 61 firms. The researcher therefore carried out the study on the five firms since the rest did not meet the selection criteria.

Administering questionnaires was another limitation faced by the researcher, the first reason being that some of the managers were skeptical to receive them for fear of being reprimanded by their superiors which meant that the researcher had to do an intense follow-up to see that the questionnaires were filled. Secondly, the targeted firms are geographically dispersed. These limitations created logistical and budgetary challenges in accessing and collecting data from the participants. The researcher addressed this limitation by reassuring the participants of the confidentiality with which the data collected from them would be

treated. The researcher also used a research assistant to distribute the questionnaires where it was necessary.

The researcher used structured questionnaires which were limited to the Likert scale meaning that the information collected was limited to closed ended questions, hence no qualitative views were obtained from the respondents. Future studies need to use both the open and closed ended questions.

Furthermore, due to financial and time constraints, the study only reviewed a sample of senior staff from the respective headquarters of the companies studied. This means that generality of the findings were made based on the results obtained therein.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Theoretical literature on fraud and how it can be mitigated were presented in this chapter. In addition, a review of empirical studies on the effect of forensic accounting services on fraud mitigation was looked into. The forensic accounting services factors that were focused on in empirical review include; Litigation support, forensic data analysis and fraud awareness. The chapter also gives a summary of the reviewed literature and the research gaps. The relationship between independent variables and the dependent variable are presented in a conceptual framework.

2.1 Theoretical Review

There are several schools of thoughts that have made an effort to explain the causes of fraud and how to mitigate it. For the purpose of the study, three theories relevant to the subject of study were discussed. The discussion of the theories was basically to assist the forensic accountants, fraud examiners and anti-graft agencies in understanding why fraud is committed and how it can be mitigated.

2.1.1 The Fraud Triangle Theory

This theory is involved in trying find out the reasons that lead to people to commit fraud (Sutherland, 1939). The theory was explained through the white color crime and later emphasized by Sutherland's student Donald Cressey in 1950 (Noorhayati, Muhammad & Nuhu, 2015). Cressey, who was a criminologist, carried out a research on the reasons that compels persons to breach their expectations by interviewing two hundred and fifty (250) criminals in a period of 5 months (Noorhayati et. al. 2015). According to Cressey (1953) people happen to breach their faith because they might have incurred a financial obligation

which must be satisfied by secret means. In his findings, Cressey (1953) concluded that the reason is when the trust violators consider that they have a financial difficulty that gives him pressure and knows that this difficulty is capable of being dealt with in secret by taking advantage of the financial status bestowed if there is an opportunity to do so and when fraudsters are people who are committing the offence for the first time and therefore perceive themselves as normal people with integrity who have just been caught in a horrific condition. In summary, pressure, opportunity and rationalization are the three elements discussed in the theory and are normally represented in a figure as depicted in figure 2.1. The understanding of the theory assists the managers and business organization in the process of mitigating fraud in the work place. According to (Effiong, 2012) it is crucial for an organization to find out the fraudsters, why they are committing the act and what leads them to act in that manner and that organizations needs to find ways to curb the behavior. According to Akinyomi (2010) fraud is committed by anyone present in the organization and can be managers, employees or third parties involved in the company and the result is loss of finances.

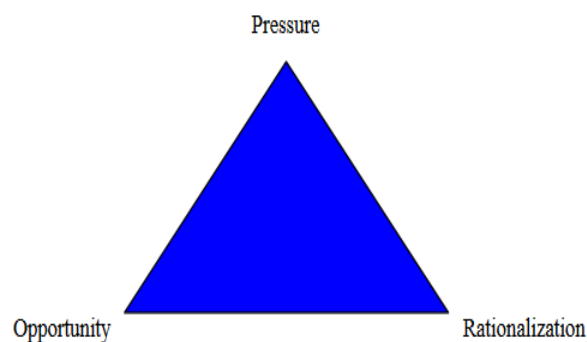


FIGURE 1:

The fraud triangle

Source: Brummell group

Hooper and Pornelli (2010) assert that pressure is the reasons that push people to the extent of stealing due to need of funds. There are various issues that cause pressure to an individual that leads to one committing fraud. Factors that could lead to pressure include financial, non-financial, political and social problems as (Murdock, 2008) echoed. These issues that cause pressure may include financial constraints, betting, drug and alcohol addiction, huge hospital bills and greediness according to (Brummell, 2010). Criminal behavior can be prevented through identifying possible pressures that could be present in the company such as money problems, and substance abuse. Behavior such as gambling habit and drug addiction lead to non-financial pressure as they are personal weaknesses; and people also suffer political and social pressure when they feel that their status had failed them.

Kelly and Hartley (2010) assert that the concept of perceived opportunity suggests that people will take advantage of circumstances available to them. Rae and Subramanian (2008) define opportunity as a weakness in the system where the employee has the capability to exploit the situation and make fraud possible. According to Hooper et al. (2010) it is not possible for fraud to occur in spite of the presence of pressure if an opportunity is not present. He goes on to say that opportunity is the inherent susceptibility of the organization to manipulation and the presence of the conditions within the organization that may allow a fraud to occur. Brummell (2015) opine that opportunity facilitates the ability to commit fraud and is created by a weak internal control environment, poor management oversight, the abuse of authority and failure to establish adequate procedures to detect fraudulent activity. He further reiterates that companies that are not actively working to prevent fraud can present repeated opportunities to individuals who meet all three criteria of the fraud triangle. In view of this, it is advisable for organizations to put appropriate procedures and controls in place that deter employees from committing fraud.

According to Brummell, (2015) rationalization pertains justification of one's behavior or deeds for instance by claiming that he wanted to save a sick member of his family and could not find any other help or he supposedly think that the organization owe him something. Rae and Subramanian (2008) have argued that rationalization is a justification of fraudulent behavior for the reason that an employee lack personal integrity. They further claim that persons differ in that some persons are more likely to commit fraud than others since the tendency to commit fraud centers on that person's moral standards and personal behavior. Brummell (2015) suggests that it is important for companies to lay down policies that do not tolerate fraudulent activities on organizations as this will make it more difficult for perpetrators to engage in fraud activities because of the consequences.

2.1.2 Fraud Diamond Theory

Fraud Diamond Theory is an enlarged version of the Fraud Triangle Theory and was offered by Wolfe and Hermanson (2004) in his CPA journal. It consists of four elements which are Incentive (Pressure), Opportunity and Rationalization plus Capability which is the fourth element that was added by Wolfe and Hermanson to the previously existing Fraud Triangle Theory elements. The theory maintain that even though the identified pressure may perhaps exist at the same time with the opportunity of committing fraud and a rationalization to do it, fraud is not probable to occur if not the element of capability is as well at hand, meaning that the impending trust violator ought to hold expertise as well as the capability of committing the fraud. The four elements are depicted in figure 2.

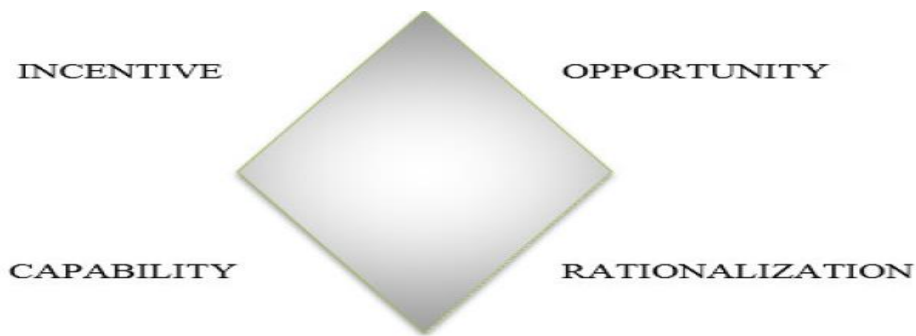


FIGURE 2: The Fraud Diamond theory

Source: Wolfe and Hermanson (2004)

The proponents of the theory uphold that the presents of the three initial elements (pressure, opportunity and rationalization) alone cannot lead to fraud except the employee has the capacity to be familiar with the open entrances as an opportunity and exploit it. Aigienohuwa, et.al. (2017) assert that capacity is the possession of relevant traits and ability to turn such opportunity to a reality, thus one need to understand the internal control system and its lapses that could be exploited in planning and implementation of the fraud.

2.1.3 The Fraud Box Key Model Theory

Okoye and Onodi (2014) propounded the fraud box key model as the immediate response to the long endured tumbles of the fraud triangle theory and the fraud diamond theory by adding a fifth perspective which is the corporate governance. Aigienohuwa, et al (2017) claim that FTT and FDT tend to bother on the reasons and ways of committing fraud without reliable corresponding response to how to stop the fraud. They further suggested that the Fraud Box Key model believe that no matter how strong the pressure and how accessible the opportunity may be and no matter the rationalization and capacity of the intending fraudster may be the whole intentions of committing fraud amounts to nothing if there is strong and effective corporate governance in place as a key. Ezugwu, Okoye and Amaechi (2017) maintain that corporate governance is to be added since it is the master key to pressure, opportunity, attitude and capability. Ezugwu et.al. further suggested that it is

believed that the fraudster's thought process will amount to thinking inside the box if there is good corporate governance whereas, corporate governance dysfunction unlocks the fraudster thought process and in so doing opening the doorway for fraud to occur. They further allege that the fraud box key (corporate governance) becomes a guide for auditors in determining fraud menace issues and that an open fraud box is an indication of red flag that fraud is likely to occur.

2.2 Empirical review

Evidence of studies done by previous researchers which are relevant to the variables on study and their relationship with the dependent variable are discussed in this part with an objective of enabling the researcher to test the hypotheses. The independent variables under study were; Litigation support, Forensic data analysis and Fraud awareness, while the dependent variable is Fraud Mitigation in the listed firms at the Nairobi Securities Exchange.

2.2.1 Litigation support services and fraud mitigation

Ejoh (2017) sought to examine the how the forensic accountants' expert testimony assists in litigation support in his study that was carried out in Nigeria. The study which targeted accountants, auditors and legal practitioners in Nigeria used both the primary and secondary data collection methods, whereby one hundred (100) questionnaires were administered. Ejoh (2017) defined litigation support as giving assistance in accounting matters involving existing court proceedings. In addition, the study assert that litigation support services can be more specifically highlighted as, giving support in protecting the documents needed to carry out or refute a claim as well as giving a hand in the cross-examination. He further maintained that if there are any losses resulting from the violation of the contract terms, the forensic accountant's litigation support would be computation of the economic loss. It was revealed from the study that forensic accountants are capable of evaluating the probable harm claims so that the corporate legal units can choose whether to

follow the proceedings and as expert witness, they can offer important services at the different phases of the litigation.

Similar sentiment was echoed by Oyedokun (2013) who explained litigation support as the course of offering consultation services to jurors in view of an existing and pending court case. The study was carried out in Nigeria and sought to evaluate on the role played by forensic accountants in assisting the lawyers. Only secondary data was used in the study and a content analysis technique was used to elicit responses from the respondents. It was asserted that litigation support professionals lend a hand to the judges in managing significant litigation, designing and implementing databases for managing, sorting, indexing and conceptualizing large volumes of data produced as evidence before a court of law. From the study it was concluded that forensic offers assurance of a significant height by giving the required results in resolving dispute.

According to Owojori et al. (2009) examined how the vexed problems in the corporate world can be solved with the use of forensic accountants in their study that was carried out in Nigeria. Their study employed secondary data. They pointed out that forensic accounting services signify the realistic presentation of financial matters to the present litigation and that they are expected to present viable evidence which is then weighed by the judge even before they reach the courtroom, thus may testify as an expert witness when a dispute reaches the courtroom. It was highlighted from the study that some examples of the litigation support services include, ensuring that the necessary claim documents are obtained, to bring forth necessary documents that are essential to the case and ensure that they are well stored; ensure that discovery is examined; ensuring the financial residence is secured; reviewing of testimonies from time to time and ensuring that information that would be required to be added is formulated and help in clarifying the financial issues.

In the article of Warshavsky (2010) on forensic accountants' role in litigation, it was pointed out that litigation attorney can habitually achieve remarkable influence during case negotiations or in a court of law since they have the capability to offer mathematical figures in clear terms. He further says that a proficient forensic accountant in the litigation field influence the retaining legal representative by assisting him to offer claims. Furthermore he postulated that the legal representatives use forensic accountants to translate difficult economic matters into a manner that can be understood better thus play a significant role in the ruling of the court case.

Kingsley (2012) carried out research on the developing countries and assessed on whether forensic investigation professionals plays any role in prevention of corruption and fraud cases in these developing countries. The lawyers, auditors, forensic accountants, investigators and anti-corruption agencies that are forensic accounting professionals were targeted by the study. The study used both secondary and primary data collection methods whereby 200 questionnaires were administered to the respondents in which 167 were returned. To arrive at the sample size, the researcher used judgmental method. The findings revealed that apart from providing litigation support services, the forensic investigation experts also served as expert witnesses' trial or defense in the courtroom. Kingsley (2012) moreover affirmed that these experts communicate information to individuals in the courtroom who often have limited experience to such testimony by translating what the documentary evidence means thus makes the documents speak.

Dada, Olowabi and Okwu (2013) studied forensic accounting services' relevance on investigation of fraud cases in Nigeria. Their study targeted selected anti-graft agencies of three accounting firms. Primary data was used in the study which also included oral interview. Data analysis was performed using the multiple regression method. It was revealed from the study that although the Nigerian governments have made several efforts in an

attempt to reduce economic crimes as well as the fraud cases by many coming up with anti-graft establishments, the efforts seem not to be effective. In addition to that, the study also found out that many cases that were being thrown out of court was because forensic accountants were not being involved in the investigation and prosecution processes as expert witnesses. The recommendation was that in order to avoid fraud cases being dismissed in court for lack of sufficient evidence, the anti-graft agencies should involve forensic professionals by establishing forensic units.

Nwaiwu (2018) carried out a study on forensic accounting services relevance on financial performance by selecting listed companies' detection process and performance in Nigeria. They used structured questionnaire to collect primary data. Their findings revealed that litigation support and fraud motives indicated a negative relationship, meaning that as litigation support is increasing, the motive to commit fraud is decreasing; litigation support and fraud opportunity indicated a positive relationship, whereas litigation support and fraud justification indicated a negative relationship. This means that as litigation support increases, the motives and justification to commit fraud decreases while a positive significant relationship existed between the litigation support and opportunity. The recommendation from the study was that forensic accounting experts should be employed to carry out litigation support services, provide professional support and lend a hand to the courts in lawsuits which the lawyers may not be having knowledge required to make a ruling and by doing so they reduce chances of committing fraud.

Okoye and Gbegi (2013) sought to establish the role played by forensic accounting in detecting and preventing fraud in Nigerian's public sector. The study used primary and secondary data methods in collection of data. Three hundred and seventy (370) questionnaires were issued to the respondents. Out of this number, 350 questionnaires were

returned. Interviews were also conducted on selected ministries. Hypothesis was tested using ANOVA statistical tool. It was suggested that forensic accountants have the ability to provide litigation support and that investigation accounting is the area that has proved to be complex and of great concern for forensic professionals.

Bassey & Ahonkhai (2017) in their study carried out on Nigerian public banks sought to ascertain whether litigation support had an effect in mitigation of fraud. Primary data was used and the data collected was interpreted with the help of inferential statistics using ANOVA. A sample size constituting 60 respondents were used, out of a total population of 120 which is the total number of middle and senior level staff for the two banks. The sample size was arrived at using systemic sampling method and by use of an interval scale of two. The questionnaires were administered to employees of two selected banks. It was concluded from the study that that litigation support professionals take into cognizance the interpretation and representation of problems that are connected to helping pending litigation. However, it was pointed out that in Nigerian banks, forensic accounting and litigation support did not have significance effect on mitigation of fraud because most fraud cases are not taken to court.

Ojo (2012), sought to establish the role played by a forensic accountant in Ota state of Nigeria in the capacity of an expert witness. He asserts that the identification of embezzlements, analysis of recovery of assets and re-performance of financial statements, liquidity analysis and tracing of transactions are the processes that are involved in accounting information analysis. Ojo (2012) further argued that auditors are not as much as the forensic accountants in their way of questioning and in evaluation of the audit evidence although the professional skepticism requires them to be critical in doing so. In Addition, he further went ahead to say that forensic accountants look upon the actual and financial worth of the records

and facts and they are capable of detecting cases where there is manipulation of accounting information thus they take action in exposing and taking control of fraud before it happens rather than simply validating financial statements.

Ghana was assessed by Ocansey (2017) on how litigation support was influenced by forensic accountants. Only secondary data was used in the study and a content analysis technique was used to elicit responses from the respondents. It was asserted that litigation support professionals lend a hand to judges in managing significant litigation, designing and implementing databases for managing, sorting, indexing and conceptualizing large volumes of data produced as evidence before a court of law. Furthermore, findings of the study pointed out that techniques used by forensic accountants can help offer sufficient evidence thus enable easy judgment. The study additionally recommended that, anti-corruption agencies and law enforcing institutions ought to prepare personnel to use forensic accounting techniques to unearth the truth so as to facilitate easy prosecution of the economic and financial crime cases and in turn prevent them from being thrown out of court for lack of satisfactory evidence.

Shewangu (2014) researched on e-fraud menace alleviation tools in the banking sector of Zimbabwe to ascertain whether forensic technologies worked. The researcher used purposive and convenience sampling methods based on his judgment about the availability and knowledge ability of the respondents on the question at hand. The targeted population included the chief executive officers, the auditors, and risk managers. Questionnaires were issued to twenty two (22) selected banks in Zimbabwe. It was discovered that fighting e-fraud would be most effective if fraud mitigation strategies were utilized. In addition, the researcher noted that judges do not completely understand statistics and their fear in handling numerical issues may exert weight on the course of action on statistical testimony. It was

concluded from the study that fraud mitigation strategies could be used to ensure that fraud is reduced in banks.

Kamau (2015) examined how fraud can reduce with the use of forensic accounting services. He carried out the study on 42 out of a total 49 companies offering insurance services in Kenya which were listed as at 2013 by the Kenya Insurers Association. Well-structured questionnaires were used to collect primary data. One of the variables that were tested was litigation support services offered by forensic accountants. It was pointed out that discovery, interrogatory, request for production of evidence in court of law, record examination, reconstruction of financial statements for correct values in consequential claims, preparation and presentation of expert opinion during court case preceding, analyzing transaction flow for proper advice in court of law and proper calculation of complex disputed values were some of the litigation support services provided by the forensic accountants. The results showed positive significance of the variables on fraud mitigation with discovery, interrogatory and request for production of evidence in a court of law being the major litigation support provided by forensic accountants. It was concluded that there exist an inverse relationship between fraud reduction and litigation services hence fraud prevention. His recommendation was that for insurance companies to realize the full potential of forensic accounting services, organization need to have distinct structures within their department separating the roles of forensic accountant from that of the auditor.

Meshack (2016) researched on why directors of troubled firms in Kenya are calling in forensic accountants in six public companies in Kenya. His concern was why some of the issues covered by forensic accountants were not possible of being detected by financial statement audit. It was revealed that in all the companies studied, administrators and senior employees are the ones responsible for preparation of the financial statements as well as setting up of the accounting structure that recognize, quantifies, document and sufficiently

reveal the company's transactions that have an influence on its financial position. It was further claimed that the auditors merely add credibility to the financial statement by giving an independent view on whether the financial statements have been fairly presented without any material misstatement. Meshack (2016) further claimed that forensic accountants scrutinize a company's internal control system to detect any weak point in the systems so as to safeguard resources and to establish whether there are cases of exploitation of the weaknesses by employees to embezzle assets for personal gain.

2.2.2 Forensic Data Analysis and Fraud Mitigation

DiGabriele (2009) noted that forensic accountants have a set of competencies that comprise deductive ability, creative thinking and crisis solving capability, analytical elasticity written communication capacity, specific knowledge on legal issues and good self-possession. Di Gabriele (2009) further uphold that evidence exists on the demand for superior level of proficiency that is required to scrutinize the modern complex financial matters and it is perceived that forensic accounting emerges to be on top of the crusade against financial fraud

Owojori and Asaolu (2009) examined how the vexed problems in the corporate world can be solved with the use of forensic accountants in their study in which they used secondary data. It was found out that in order for the complex business transactions to be properly understood, forensic accountants often aid in the analysis, summary and presentation of the transactions. They further reiterated that manipulated or destroyed financial accounting records are often made complete by forensic accountants through reconstruction. They acknowledged that there has been an increase in cases of frauds in Nigeria which are carried out through manipulation the financial statements and regretted that this fraudulent behavior in the corporation is becoming a norm in Nigeria.

Ofiafoh and Otalor (2013) sought to examine forensic accounting as a tool for fighting financial crime in Nigeria. They argued that in the developed economies, investigation of financial crime cases are now being done by forensic accounting experts who are being hired because of the persistent failure of auditors to unearth fraud cases. They claim that the skills held by forensic accountants are peculiar because of their capability to detect errors, make inferences from the financial information and identify the abnormal transactions that contradict the usual way of doing business. Ofiafor and Otalor (2013) further claim that forensic accountants do not just look at the audit track but also look beyond the transactions to focus on material matters of the transactions. Their recommendation was that the anti-corruption bodies ought to think of employing the forensic accountants' services in order to improve judgment of the fraud offenders and aid them in courtyard cases involving financial as well as economic crimes.

Onodi, Okafor and Onyali (2015) sought to examine how forensic investigative method impacted on corporate fraud deterrence in banks in Nigeria. Survey research design was adopted in the research where they used primary and secondary methods to collect data. In the primary source, interviews and questionnaires were used while in the secondary method, the researcher used reports on forgery and fraud in the banks. To analyze data, statistical tools were used and Z-test was also carried out. The findings of the study was that additional forensic accountants are being searched for in order to search through documents thoroughly in an effort to find out new information and help in reconstruction of irregular portions of company's financial problems to solve the difficult problems. They further reiterated that in persecution of fraud, forensic accountants' expert services are required.

Nwaiwu (2018) examined the relevance of forensic accounting services on financial performance which constituted listed companies' detection process and performance in Nigeria. During investigation, the researcher used a cross-sectional quasi experiment design.

Primary data collection method was used whereby well-structured questionnaires were administered to employees of randomly selected five listed companies which included banks and manufacturing companies. Structured likert scale was used to generate the questionnaires. The researcher used convenience sampling technique because of the limited time frame which was given for the completion of work. It was found out that forensic accountants have the power to give proper reporting where the answerability of the fraud is established the report considered as evidence in by the jurors. It was recommended that in the public companies, measures to mitigate and prevent fraud as well as investigative accounting measures should be put in place.

Enyi (2009) employed real case problem in his research on the Nigerian manufacturing firms to establish how to investigate variances and suspected fraudulent behavior by use of forensic accounting services. The results of the study revealed the instance of forensic investigation by use of ratios and statistical methods to arrive at clues showed the proper direction to follow in an examination to expose sequence of deceptive tricks that were hidden in company's books of accounts. The police use the findings of the forensic investigator as the main evidence and they were able to detain and put on trial the people who were responsible for the fraud.

Ehioghiren and Atu (2016) examined forensic accounting and fraud management in Nigeria's Edo and Delta states where five hundred and seventy two (572) respondents were sampled including senior management staff, external and internal auditors, public as well as private companies' accountants and also shareholders and academicians. The analyzing, interpreting, summarizing and presentation of complex financial issues are involved in forensic accountants as their main duty.

According to Oyedokun (2013) forensic accounting is used by many parties to find evidence that is presented in court to find out who did the fraud, how it was done and where the recovered assets are kept. The witnesses are also presented in court where forensic accounting is used to analyze their and document their proof. Nigeria was studied and how forensic accountants' litigation was affected by its role in assessment of its public sector. Oyedokun (2015) postulated that forensic accounting services have a positive influence on the integrity of financial statements of business organizations. This was revealed in his survey study on the integrity of financial statements and forensic accounting techniques in the internal control of business organization in which three hundred and fifty (350) questionnaires were administered to members of the Institute of Chartered Accountants of Nigeria.

Warshavsky (2010) in his article on forensic accountants' role in litigation support asserted that forensic accountants are proficient at investigating, identifying and analyzing financial information, in conjunction with determining the people associated with the fraud eventually. He further argued that the financial forensic results could uncover hidden assets and assist the legal representative in whatever specific financial issues the case requires. It was also put forward that in the data collection and analysis phase of the case, the forensic accountant would investigate the financial documents received, perform research, and apply financial forensic tools and techniques such as trending, benchmarking, and ratio analysis.

Kamau (2015) carried out a study on insurance companies in Kenya to establish the effect of forensic accounting services on fraud mitigation. He obtained data from 42 out of the 49 insurance companies which have their headquarters in Nairobi. He used structured questionnaires to collect data. Where necessary, the researcher used descriptive analysis and regression analysis with the aid of SPSS was used to analyze quantitative data. Forensic analysis of transaction flow for proper advice in court of law and proper calculation of

complex disputed values had a mean of 3.5 and 3.1 respectively, while records examination and reconstruction of financial statements for correct values in consequential claims had a mean of 4.2, which all shows a significant relationship connecting the independent variables and fraud mitigation. Results of the study showed forensic accounting services are better tools used to evaluate the quality of normal financial statements produced by auditors thus assist the audit committee to carry on oversight functions.

2.2.3 Fraud Awareness and Fraud Mitigation

Astriaana and Adhariani (2018) sought to investigate employees' views on fraud awareness and anti-fraud strategy. The study analyzed the implementation of an anti-fraud strategy as a portion of fraud awareness and the degree of fraud awareness of the workforce in one of the self-regulating organizations in Indonesia. Their research was carried out by conducting interviews with a sample of employees of the company in which 75 questionnaires were issued to them. The study used descriptive survey to find employees views concerning the reasons for fraud and efforts to govern fraud in organization as a way of the fraud awareness matter. The result of research was tested through a two-way analysis of variance method to find the inconsistency of response from each group included in the research. The sampling method used in this research was random sampling which was carried out after considering the respondents willingness to take part in the research. The findings showed that the company was operating as expected by the stewardship theory for fraud awareness. The recommendation from the research was that fraud awareness is portion of fraud mitigation that attempts to appreciate the nature and causes of fraud and that it is imperative because it will contribute in minimizing fraud by creating awareness that averting fraud is essential. They further recommended that fraud can be taught by training for the general description of fraud and its categories.

Rozmita (2017) opined that fraud incidents have intensified in both public and private institutions necessitating all the parties to be mindful of the occurrence and create an anti-fraud awareness. Their study examined the effect of internal control and fraud awareness on fraud prevention in inter-governmental organizations in Indonesia. The study employed the primary data collection method whereby questionnaires were issued to 187 local staff of the companies under study who had taken part in the procurement process. Data attained were analyzed by use descriptive statistics whereas classic assumption tests entailed normality test and multi-collinearity. The results showed that the effect of fraud awareness was positively significant on fraud mitigation. The study recommended that it was necessary for the institutions under study to intensify the mutual awareness of the menace of fraud and its effect on the organization and its staff. It was further suggested that fraud mitigation can be done by increasing awareness of anti-fraud. And that by having a noble management that is also reinforced by high anti-fraud awareness, the organization is presumed to grow.

Similarly, Tuanakotta (2012) focused on forensic accountancy and investigative audit in a study which also sought to investigate the influence of internal control and anti-fraud awareness on the fraud prevention in inter-governmental organizations. The study used internal control and anti-fraud awareness as the explanatory variables, while fraud prevention was used as the dependent variable. In addition, it used a convenience sampling for collecting the data. The sample of the data was taken by means of questionnaires which were issued to 58 respondents who had been involved in the procurement practice. Furthermore, the data were analyzed by means of multiple regressions. The results revealed that internal control and anti-fraud awareness had substantial effects on fraud prevention. It was put forward that there are two notions other than internal control in preventing fraud, which is teaching awareness about the presence of fraud (fraud awareness) and determinations to assess the risk of fraud (fraud risk assessment). It was recommended that, it is essential for institutions to

create awareness of the fraud to all members of the organization so as to mitigate fraud as well as cultivate solid actions to moderate risk and eradicate chances for fraud.

Jalil (2018) examined anti-fraud awareness and prevention of fraud. The samples used in the research were employees of Syarif Hidayatullah Jakarta. The study was steered by survey method by issuing questionnaires to prospective respondents in order to acquire reliable data and weighty results. The explanatory variables used in the study were internal control, anti-fraud awareness and fraud prevention. The anti-fraud awareness variable was measured by using components in management anti-fraud and controls obtained from statement on auditing standard. Data collected was analyzed by use of multiple regressions. It was revealed that the increasing awareness of fraud had a statistically significant positive effect on the prevention of fraud. It was recommended that fraud is a serious danger to the organization and should be prevented early enough. It was also supplemented that with extensive fraud taking place, it should stimulate all parties to improve an anti-fraud strategy and be regularly implemented to build awareness of anti-fraud and promote common awareness of the risks of fraud so that the management can attain its objectives.

Maurer (2013) sought to find out the effectiveness of fighting fraud with employee awareness. His study was based on 1388 cases of fraud from 96 countries. The data collection process was an online survey of certified fraud examiners from October 2011 to December 2011. From the research it was found out that organizational staff is capable of detecting fraud first and that personalized fraud awareness training for them and managers is a critical element of a well-rounded policy for preventing and mitigating fraud. In addition, it was revealed that organizations that have fraud awareness training programs for its employees run into lower losses and fewer frauds than organizations devoid of such programs. It was recommended that in order to mitigate fraud, business managers together with their

employees need to be proactive promoting anti-fraud awareness and training which comprise of actions that constitute fraud, how fraud troubles everyone in the organization and how to report doubtful activity.

Wamuyu (2014) noted that, evaluating fraud risk in every business area of an organization is obligatory particularly where cash is involved because the consequences of fraud could be negative effects on the going concern of a business organization as well as its lucrativeness. In her research that focused on fraud in the Kenyan banking industry, Wamuyu (2014) further pointed out that it is essential for organizations to devote time and other resources in order to make certain that fraud is recognized, managed and controlled. In a population of 650 employees of the Commercial Bank of Africa, the study targeted 204 employees working in Nairobi. The study used stratified sampling method to arrive at the sample size. The study found out that fraud in any business setting is common among senior staff thus employers need to conduct due diligence on them. It was concluded that a proper administration and implementation of disciplinary actions should be put in place in order to mitigate fraud.

2.3 Critique of the Literature Review

A substantial number of studies have affirmed the existence of fraud in both private and public companies all around the world. According to (Blodget, 2011) fraud, corruption and other irregularities are some of the issues that affect the global village thoughtless of the country, industry or size. The studies have associated the increase in fraud to inadequacy of the statutory audit in detection of fraud which has raised much discussion for forensic accounting services. According to Aduwo (2016) companies can make use of forensic accounting services to reverse seepages that cause corporations to collapse since it is effective in searching for errors and abnormal transactions early enough before they turn into frauds. There are considerable numbers of research studies that have been carried out

regarding forensic accounting services. However, several authors have discussed forensic accounting services in relation to various variables, but not on the effect of forensic accounting services on fraud mitigation in listed firms.

Various studies have underscored the importance of litigation support in relation to fraud mitigation, specifically; (Ejoh, 2017; Oyedokun, 2013; Owojori et.al., Kamau, 2015 & Meshack, 2016). These studies affirm that litigation support professionals lend a hand to the judges by providing viable evidence to them that are used in a court of law. However, though some of these studies targeted companies in the public sector, most of them focused on commercial banks and insurance firms.

Studies have concluded a positive relationship between forensic data analysis and fraud mitigation, i.e. Nwaiwu, 2018; Enyi, 2009; Ofiafor & Otalor, 2013 and Kamau, 2015). The studies claimed that forensic accountants have the power to give proper reporting where the answerability of the fraud is established and that forensic accounting services have a positive influence on the integrity of financial statements.

Astria and Adhriana, (2018) concluded that fraud awareness is part of the fraud control that assists managers to mitigate fraud, (Jalil, 2018) claim that it had a significant positive effect on fraud prevention, whereas Maurer posit that it is a critical component of a well-rounded program for preventing and mitigating fraud. Wamuyu, (2014) assert that fraud in any business is inherent among senior staff and that it is important to conduct due diligence on them.

2.4 Summary of Literature Review

A review of the literature indicates that the forensic accounting is a subject that has attracted the attention of scholars and organizations globally. It also indicates that organizations around the world are turning to the services of forensic accountants in an effort

to curb the widespread problem of fraud. This is because of their perception that forensic accountants have some peculiar skills that the traditional auditors do not possess and therefore can be of great help in the fight against fraud.

(Ofiafoh & Otalor, 2013) have argued that forensic accountants possess deductive analysis skill which is the ability to identify financial contradictions that do not fit in the normal pattern of assignment. Warshavsky (2010) also concurs with the other researchers by asserting that forensic accountants are proficient at investigating, identifying and analyzing financial information, in conjunction with determining the people associated with the fraud eventually, the financial forensic results could uncover hidden assets and assist the legal representative in whatever specific financial issues the case requires. It is therefore important for the listed firms to engage the services of forensic accountants so as to mitigate fraud and save the company assets. Ojo (2012) contend that even though professional skepticism embraces an attitude which includes a questioning mind and a critical assessment of audit evidence, auditors can be said to have a less questioning attitude and assess audit evidence with a less critical approach than is the case with forensic accountants. Kingsley (2012) claim that forensic investigation professionals communicate information in court to individuals who often have limited experience to such testimony by translating what the documentary evidence means thus makes the documents speak. In view of these, it suffices to say that the services of forensic accountings are necessary since they are capable of providing appropriate evidence.

Meshack (2016) claims that the auditor only adds credibility to management's financial statement by only expressing an independent opinion on whether management has fairly presented information in the financial statements and free of material misstatement. Kamau (2015) found out that the forensic accountants have reduced cases of fraud by

incorporation of computer software in data processing and in the computer information system to detect frauds and errors. Though there are some of the studies which offered mixed reactions, majority of the studies tend to concur on fraud mitigation through the use of forensic accounting services. It can therefore be deduced from the studies that forensic accounting services have an effect on fraud mitigation in the selected listed firms at in Kenya.

2.5 The Conceptual Framework

The conceptual framework in figure 2.1 illustrates the relationship between the independent and the dependent variables. According to the illustrated framework, the independent variables are: Litigation support services, Forensic data analysis and fraud awareness, while the dependent variable is fraud mitigation in firms listed at NSE. The nature of the services achieved by the independent variables is presumed to affect the dependent variable.

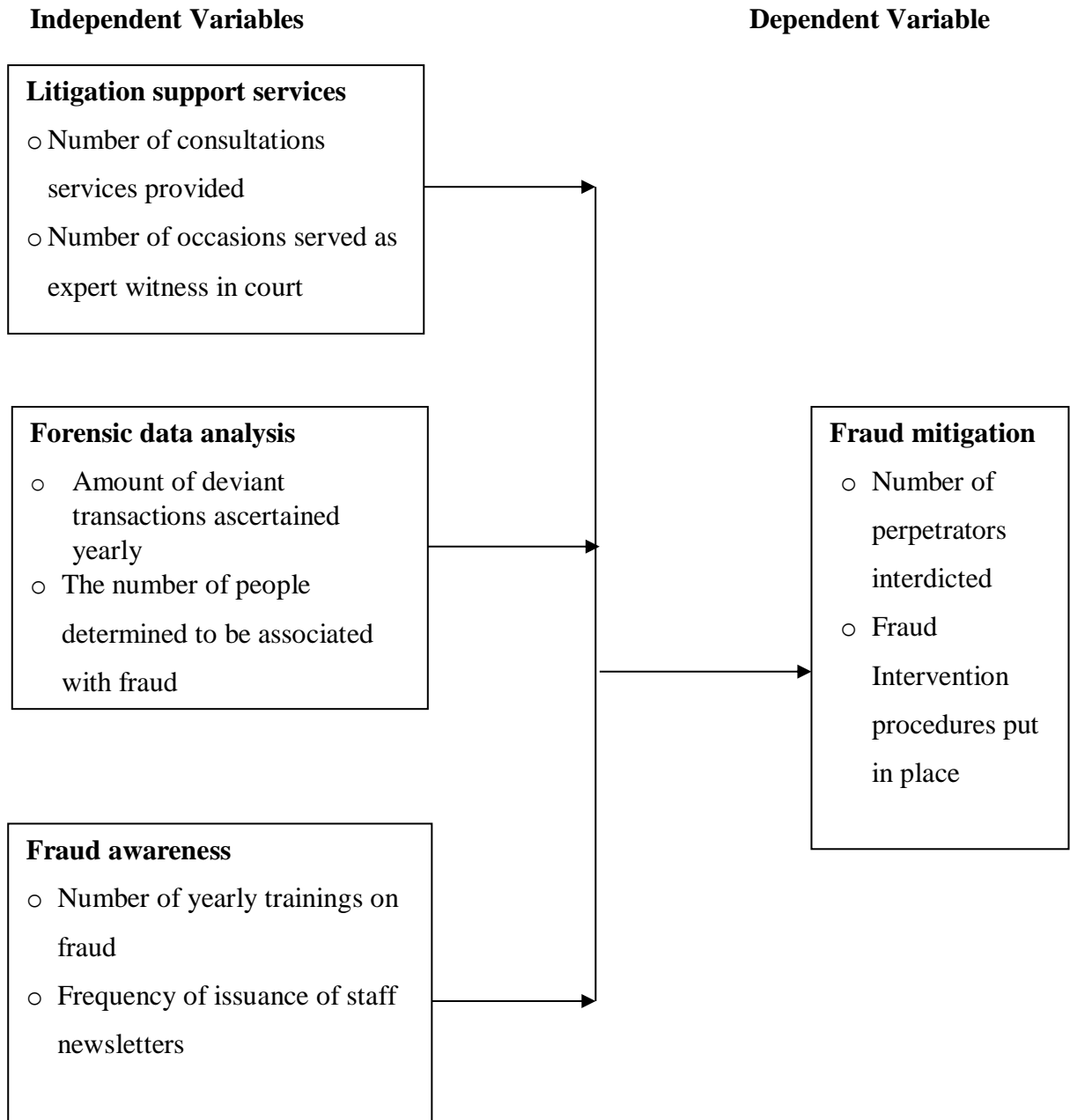


FIGURE 3:
Conceptual Framework

2.6 Research Gaps

There are quite a number of researches that have been carried out on the effectiveness of forensic accounting services on fraud mitigation but not on the listed companies.

TABLE 1:

Summary of Research Gaps

Author of Study	Aim of Study	Methodology	Findings	Knowledge Gaps	Focus of Current study
Dada, Olowabi and Okwu(2013)	Forensic accounting relevance on fraud detection	Multiple regression model	It was revealed that the Nigerian governments have attempted to reduce frauds by coming up with anti-graft establishments	The study targeted the anti-graft agencies and accounting firms	This study focused on fraud mitigation in firms listed at NSE
Kamau (2015)	Effects of forensic accounting services on fraud mitigation	Regression and descriptive analysis	The study revealed that forensic accounting services are better tools used to evaluate the quality of normal financial statements	The study was limited to insurance companies only	This study focused on firms from different sectors of the economy
Opiyo, J. (2017)	Role of forensic accounting services in fraud mitigation among Kenyan public institutions a case of parastatals in Kenya	Regression and correlation analysis	The study concluded that all the parastatals in Kenya have a proactive fraud audit function, robust internal controls and litigation processes which help in fraud mitigation to a very great extent.	The study focused on parastatals in Kenya while the cases of fraud are rampant in county governments	This study aims to investigate how forensic accounting can be used to mitigate fraud in firms listed at NSE
Astriana and Adhriana (2018)	Implementation of an anti-fraud	Two-way analysis of variance	That fraud awareness is important	The study was limited to self-regulating	This study focuses on firms listed

	strategy as part of fraud awareness	(ANOVA) and employed random sampling technique	because it assists management and employees to minimalize fraud	organizations whereas fraud is rampant in various sectors of the economy	at the securities exchange
Maure (2013)	Effectiveness of fighting fraud with employee awareness	Online survey	That a targeted fraud awareness for employees is a critical component of a well-rounded program for mitigating fraud	The study did not target any specific industry	This study aimed at determining the effects of forensic accounting services targeting firms listed at the NSE
Omondi, (2013)	Impact of forensic accounting services on fraud detection and prevention among commercial banks in Kenya	Descriptive research survey design was used	Application of forensic accounting services by banks led to increased fraud prevention in the commercial banks	The study was motivated to conduct this study due to the fact that commercial banks are important institution in economic growth.	The current study aims to curb cases of fraud in firms listed at NSE based on the facts these firms are expected to improve the economic development in Kenya
Okoye and Gbegi (2013)	Role played by forensic accounting in detecting and preventing fraud	Analysis of Variance (ANOVA)	Forensic accountants have the ability to provide litigation support	The study focused on fraud detection and detection as the dependent variables without giving ways of mitigating it	This study focused on fraud mitigation

To add on this, Ejoh (2017) examined forensic accountants' expert testimony role in litigation support in Nigeria. Similarly, Oyedokun (2013) sought to evaluate on the role played by forensic accountants in assisting the lawyers. Owojori et al. (2009) examined how the vexed problems in the corporate world can be solved with the use of forensic accountants. Warshavsky (2010) evaluated on the forensic accountants' role in litigation. Kingsley (2012) carried out research on the developing countries and assessed on whether forensic investigation professionals plays any role in prevention of corruption and fraud cases. Though the findings of the studies concur that forensic accountants are capable of offering important services at the different phases of the litigation, the studies only targeted accountants, auditors and legal practitioners without targeting any specific industry.

A study on the effectiveness of forensic accounting services in banks have also been carried out. Aggarwal and Singh (2015) examined the effect of training bank staff in India on forensic audit on fraud reduction. Bassey & Ahonkhai (2017) focused on the Nigerian public banks. Ebimobowei et.al (2012) examined on the role of forensic accounting services in detecting fraud in the Nigerian banks. Onodi, Okafor and Onyali (2015) sought to examine how forensic investigative method impacted on corporate fraud deterrence in banks in Nigeria. Shewangu (2014) researched on e-fraud menace alleviation tools in the banking sector of Zimbabwe to ascertain whether forensic technologies worked. An evaluation of the studies indicates that forensic accounting services have an effect on fraud mitigation; however the authors discussed different explanatory variables in their studies.

Enyi (2009) researched on the Nigerian manufacturing firms to establish how to investigate variances and suspected fraudulent behavior by use of forensic accounting services. Okoye and Gbegi (2013) sought to examine the role of forensic accounting as a tool for preventing fraud in the Nigerian Public sector. Ehioghiren and Atu (2016) examined

forensic accounting and fraud management in Nigeria's Edo and Delta states. The studies also revealed that forensic accounting services played a role in reduction of fraud.

Locally, Omondi (2013) sought to examine forensic accounting services' impact on reduction of fraud among the Kenyan commercial banks. Opiyo (2017) examined the role of forensic accounting services among the Kenyan parastatals. Kiprono (2018) carried out a study on Kenya Ports Authority which focused on practices that can be used to manage fraud and their effects on financial performance. Kamau (2015) examined how fraud can reduce with the use of forensic accounting services among insurance companies in Kenya.

In conclusion, it is acknowledged that there are several studies that have looked into the subject of forensic accounting services' effect on fraud mitigation as noted in the previous discussions. Yet, against this backdrop there are glaring gaps that have not been addressed by the reviewed studies. Majority of the studies conducted have only dwelled on forensic accounting as the basis for fraud detection and prevention. Despite the believe by previous researchers that forensic accounting services seem the solution for mitigating fraud, it appears as if little has been contextualized about the explanatory variables under study i.e. litigation support, forensic data analysis and fraud awareness relative to fraud mitigation.

To add on this, most of the studies done on forensic accounting services on fraud mitigation were carried out in Nigeria with only a few being done in Ghana, Zimbabwe, Kenya and other developed countries as well. Furthermore, most of the research carried out in Kenya focused on banks and public institutions. Whereas fraud is rampant in the companies listed at NSE, there seems to be very few studies that have been carried out on effect of forensic accounting services on fraud mitigation in the listed firms. The aforementioned gaps alongside the research problem necessitated the current study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methods that the researcher applied in carrying out the study are discussed herein. They include, research approaches, research design, the target population of the study, sampling, data collections methods and data analysis procedures.

3.2 Research Approach

Creswell (2014) explains research approaches as plans and procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis and interpretation. He further explains that the plan involves several decisions which include the intersection of philosophy, procedures of inquiry (research designs) and specific research methods of data collection, analysis and interpretation. According to Creswell (2014) there are three approaches in research which are the qualitative, quantitative and the mixed approaches. He says that the distinction between the qualitative and quantitative approaches is framed on the use of open-ended questions (qualitative) rather than closed-ended questions (quantitative), whereas the mixed method involves collecting both qualitative and quantitative data. In addition he says that the quantitative research is an approach for testing objective theories by examining the relationship among variables that can be measured typically on instruments, so that the numbered data can be analyzed using statistical procedures. As a result, those who engage in quantitative research have assumptions about testing the theories deductively, protecting against bias and being able to generalize and replicate findings. In this study, the researcher adopted the quantitative research approach since it enabled data collected to be tested statistically.

3.3 Research Design

Descriptive research design was adopted in the current study. Research designs are types of inquiry within qualitative, quantitative and mixed methods approaches that provide specific direction for procedures in a research design (Creswell & Creswell, 2018). According to them, descriptive research design is a type of quantitative research design which describes the perception of the participants. This design is mostly quantitative since it provides a numeric description of trends, attitudes or opinions of a population by studying a sample of that population. In addition, a researcher using this type of design poses a series of questions to the respondents, summarizes their responses in percentages, frequency distribution of Likert scale responses and some other statistical approaches. Islamia (2016) affirm that research design helps the investigator to organize his ideas in a shape to enable identification of errors. Mwaura (2013) and Kamau (2015) are some of the local researchers who have used descriptive survey design. The descriptive research design was appropriate for this study since it enhanced the determination of the effect of forensic accounting services in fraud mitigation, the findings of which will be used for decision purposes by the potential users and in generalization of the research findings.

3.4 Target Population of the Study

Population is the entire set of subjects under study and can be persons, households, housing units, parts of an organization, etcetera (Mugenda & Mugenda, 2008). Population for this study comprised of all the 61 companies listed at the Nairobi Securities Exchange as at June, 2019. The target population for the study was limited to 168 senior officers working at the respective headquarters of the listed firms that have evidently used forensic accounting services. They included; accountants, internal auditors, middle and lower level managers and the procurement officers. Fricker (2006) define the target population as the group of elements to which the researcher wants to make inference, is finite and can be counted. The targeted

individuals are presumed to be the most privy with data pertaining forensic accounting services and fraud mitigation. Middle and lower level managers are responsible for implementation of any policy changes as well as keeping an eye on the employees. Accountants and auditors are capable of detecting financial fraud in the financial statements, whereas the procurement officers are involved in the procurement of organizational assets. The researcher obtained the respondents from the respective management of the firms that formed the sample frame. The companies studied and the distribution of the staff is shown in Table 2.

TABLE 2:

Target Population

Company Name	Kenya Airways Co. Ltd.	Mumias Sugar Co. Ltd.	East African Portland Cement Ltd	National Bank of Kenya Ltd.	Uchumi Supermarkets Ltd	Total
Sector	Commercial & Services	Manufacturing and Allied	Construction & Allied	Banking	Commercial & Services	
Middle and lower level managers	21	24	31	14	8	98
Internal Auditors	2	4	4	5	2	17
Accountants	7	5	7	8	5	32
Procurement officers	4	6	5	3	3	21
Total	34	39	47	30	18	168

Source: Researcher

3.5 Sampling and Sample Size

Sampling is the process of selecting units from a population of interest so that by studying the sample, the researcher may fairly generalize the research results back to the population from which they were chosen (Creswell & Creswell, 2018). Sampling allows the researcher to obtain a representative picture about the population without studying the entire

population. Considering the fact that not all the companies listed at NSE have used the services of forensic accountants, it was not possible for the researcher to carry out a study on the whole population. In view of this, the researcher employed a non-probability sampling (purposive sampling) technique to choose the sample frame. The researcher's justification for using purposive sampling technique was based on the fact that the firms that formed the sample frame met the selection criteria. A sampling frame is a list of the actual cases from which sample size will be drawn (Taherdoost, 2016). The sample frame for this study comprised of five firms listed at the NSE cited by (Mpiana, 2017; Meshack, 2016 and Kinyua et.al.) to have used forensic accounting services. They included; Kenya airways Co. Ltd., Mumias Sugar Co. Ltd., East African Portland Cement Ltd., National Bank of Kenya Ltd. and Uchumi Supermarkets Ltd. A sample size of 119 respondents was drawn from a population of 168 senior staff of the five firms which constituted the middle and lower-level managers, accountants, auditors and procurement officers. This enabled the researcher to make appropriate generalization of the findings from the research sample to the population as a whole. Okoye and Gbegi (2013) claim that a sample size is usually a compromise between what is desirable and what is feasible. The sample size was arrived at using Yamane (1967) formula as demonstrated below.

$$n = N/(1 + N e^2)$$

Where, n = the sample size, N = is the population size, e = error margin (0.05)

The above equation is substituted as follows:

$$n = 168/(1 + 168 \times 0.05^2)$$

$$n = 118.31$$

$$n = 119$$

The sample size was found to constitute 119 senior staff working with the 5 listed firms practicing forensic accounting.

3.6 Validity and Reliability of Research Instruments

Validity is described as the extent to which a device measures what is presumed to measure (Omondi, 2013). In the perspective of this study, the researcher determined the content validity of the questionnaire with the assistance from the university supervisor. Gay and Airasian (2013) noted that the reason to go through the validation process is to minimize factors that can weaken the validity of a research instrument, including unclear test directions, vocabulary and sentence structures too difficult for test takers. According to Johnson (2007) it is important to involve a panel of experts since their feedback will be used to make changes, edits and revisions to the research questionnaire where necessary.

A reliability analysis is claimed to be crucial when developing a research instrument because an instrument lacking reliability cannot measure any variable better than chance alone (Omondi, 2013). To authenticate reliability of the questionnaire established for this study, a pilot test was performed on the senior managers, accountants, internal auditors and the procurement officers of the National Bank of Kenya, Nakuru branch where a total of 17 questionnaires were administered. The aforementioned staff had comparable characteristics with those constituting the target population which permitted their being considered for the pilot study. In essence, the members of a pilot study should be exempted from the main study. This criterion was considered since the participants of the pilot study were not part of the target population. The reliability analysis used was Cronbach's alpha which allowed an overall reliability coefficient to be calculated, as well as coefficients for each of the sub-constructs (Hopkins, 1998) as shown in Table 3.

TABLE 3:**Reliability Test Results**

Variable	No. of Items	Cronbach's Alpha
Litigation Support Services	4	.70
Forensic data Analysis	4	.72
Fraud Awareness	4	.77
Fraud Mitigation	5	.71

All the individual variables captured in the questionnaire returned Cronbach alpha greater than 0.7. The instrument was deemed reliable to be employed to collect data for the main study.

3.7 Data Collection Procedure

Primary data was collected using structured questionnaires. Questionnaires enable collection of detailed answers to complex problems and are also a popular method for data collection in deduction because of the relative ease and cost-effectiveness with which they are constructed and administered (Mugenda & Mugenda 2009). According to Owino (2013) structured questionnaire is preferred because they lead to increased response rate, take less time to code and minimize response variation.

3.8 Data Analysis

Data analysis is the process of collecting and arranging data in a manner that is clear to the study objectives. The data collected was coded and checked to ensure that they met the required quality, accuracy and completeness. The data was then analyzed using both descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS). Descriptive statistics used included percentages, measures of central tendencies and measures of dispersion. The results of analysis were presented in tabular form and were accompanied with relevant interpretations and discussion.

3.9 Operationalization of Variables

Table 4 outlines how study variables were operationalized.

TABLE 4:

Operationalization of Variables

Variables	Type	Specific Measure	Scale
Litigation services	support Independent	Number of consultations services provided Number of occasions served as expert witnesses in court	Ordinal
Forensic analysis	data Independent	Amount of deviant transactions ascertained yearly The number of people determined to be associated with fraud	Ordinal
Fraud awareness	Independent	Number of yearly trainings on fraud Frequency of issuance of staff newsletters	Ordinal
Fraud Mitigation	Dependent	Number of perpetrators interdicted Fraud intervention procedures put in place	Ordinal

3.10 Model Specification of Cross-Sectional Data

There are two types of descriptive survey i.e. cross-sectional and longitudinal survey depending on the scope of the research work (Creswell, 2014). In cross-sectional survey which defines the current study, the researcher collects information from a sample drawn from a population at one point in time (Wooldrige, 2011). The multiple linear regression model was adopted for this data. According to (Wooldrige, 2011), multiple regression is still the most widely used vehicle for empirical analysis in economics and other social sciences. The multiple regression model is as shown below.

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where,

Y_i = Is the dependent variable (Fraud Mitigation)

β_0 = Is a constant

β_1 = Regression coefficient which measures the change in the dependent variable with respect to X_1 holding other factors fixed

B_2 = Regression coefficient which measures the change in the dependent variable with respect to X_2 holding other factors fixed

β_3 = Regression coefficient which measures the change in the dependent variable with respect to X_3 holding other factors fixed

X_1, X_2, X_3 = Regressors (Litigation support services, Forensic Data Analysis and Fraud Awareness)

ε = Error term (Unobserved variables that affect y)

3. 11 Diagnostic Tests for Cross-Sectional Data

In order to determine if the cross-sectional data model was suitable in predicting fraud mitigation, diagnostic test was carried out for normality, linearity, multi-collinearity and heteroskedasticity.

Test on normality of residuals is the procedure of checking if the distribution of sample means of the independent variables is normal and does not violate the classical linear model assumptions (Brooks, 2008). Pnorm which test the sensitivity of the deviations from normality nearer to the center was used in this study to carry out this test. This helped to ascertain whether the sample was drawn from a normally distributed population.

Scatter graph was used to test for linearity of the independent variables with the dependent variable. The rationale for doing the test was to test if the model was efficient. This is because where data set is non-linear; the regression procedure would be unsuccessful in capturing the trend mathematically.

Multicollinearity is a problem that occurs when there is a high correlation between the explanatory variables. This means that there exists an exact linear relationship between the independent variables, such that the variables are said to be collinear or linearly dependent. In this situation the coefficient estimates of the multiple regressions may change erratically in response to small changes in the model or the data and the solution is to transform or drop the variables (Brooks, 2008). Multicollinearity is measured using Variance Inflated Factors (VIF) which are reciprocal to Tolerance Levels (T). When $VIF > 5$, there is multicollinearity; and when $VIF > 10$, the affected variable is dropped. Multicollinearity test was necessary since it helped the researcher to know whether to reject or accept the null hypothesis. This is because the presence of multicollinearity makes the coefficients confidence intervals to become wide thus creates problems in assessing the importance of the explanatory variables in explaining variability in the dependent variable.

Heteroscedasticity is explained as a set of data that is not homoskedastic or randomly scattered data with unequal variability across a set of second, predictor variables. The problem arises due incorrect data transformation and the presence of outliers. Chi-squared test is performed in order to detect cases of heteroscedasticity. If the Chi Squared value is significant with p-value below an appropriate threshold (e.g. $p < 0.05$) then *heteroskedasticity* assumed (Gujarati, 2012). The rationale for carrying out the test was to ensure that the regression model was correctly specified and that there were no variables omitted from the model.

3.12 Ethical Issues

During the research process, the researcher ensured that research ethical issues were maintained. In regard to this, the researcher identified a research problem that benefits a variety of potential readers. The purpose of the study was well disclosed to the participants of

the study. Considering that the participants were presumed to be busy, they were given ample time to fill the questionnaires. This ensured that there were no disruptions in their daily activities associated with the filling of the questionnaires. Privacy of the participants was also well taken care of since the participants filled the questionnaires in anonymity to ensure that no one suffers from victimization from their relevant authorities. The actual views of the previous researchers on the study variables even if they were not supportive of the researcher's objectives were reported. The researcher also accorded full credit to the authors of previous research by giving citations in every discussion in order to avoid plagiarism. During the data analysis stage, the researcher ensured that no information was withheld or underreported, since the researcher disclosed all the positive and negative results.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results emanating from analysis of data in relation to forensic accounting services and fraud mitigation. The first section outlines the response rate. This is followed by descriptive and inferential statistical results respectively. The results are in line with the study objectives.

4.2 Response Rate

The proportion of the number of questionnaires that are completely and appropriately filled vis-à-vis the total number of questionnaires issued to the projected respondents constitute the response rate. With regard to the present study, the sample size was 119 and as such, the total number of questionnaires issued to the respondents was the same (119). The number of questionnaires that were filled and collected from the sampled staff totaled 110. This translated to a response rate of 92.44% which was considered adequate in a survey study. Mugenda and Mugenda (2008) claim that 50% response rate is viable for a study.

4.3 Background Information

The study examined various aspects with regard to the selected staff working with listed firms. The aspects that were assessed include gender, academic qualifications, age, and working experience. The pertinent results are as shown in Table 5, Table 6, Table 7, and Table 8 respectively.

4.3.1 Distribution of Respondents by Highest Academic Qualification

In respect of academic qualifications, the results in Table 5 indicated that 13.6% of the respondents were diploma holders. A total of 1.8% had higher diploma certificates while

the majority of respondents (61.8%) had first degrees and only (15.5%) of respondents had masters degrees. The results were interpreted to mean that senior staff working in listed firms, especially the ones which had embraced forensic accounting, was adequately qualified to dispense their respective duties.

TABLE 5:

Distribution of Respondents by Highest Academic Qualification

Highest Academic Qualifications	Frequency	Percentage
Diploma	15	13.6
Higher National Diploma	2	1.8
First Degree	68	61.8
Masters	17	15.5
Non-responses	8	7.3
Total	110	100.0

4.3.2. Distribution of Respondents by Gender

According to the findings shown in Table 6, it was established that majority (57.3%) of the respondents were male while 42.7% were female. The results meant that the listed firms (Kenya Airways Co. Ltd, Mumias Sugar Co. Ltd, East African Portland Cement Ltd, National Bank of Kenya Ltd, and Uchumi Supermarkets Ltd) generally adhered to the affirmative action where no gender should exceed two-third in public organization. The listed firms surveyed are public parastatals and as such, their human resource department must abide with government-laid down legislature.

TABLE 6:

Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	63	57.3
Female	47	42.7
Total	110	100.0

4.3.3 Distribution of Respondents by Age

The results shown in Table 7 indicated that majority of the respondents (49.1%) were aged between 26 and 35 years. The employees aged between 36 and 45 years were 29.1%. It was also established that those respondents aged between 46 to 55 years were 13.6%. It was observed that only 2.7% of the sampled staff were aged above 55 years. The results indicated that majority of the staff working with listed firms were middle-aged (26 years and 45 years).

TABLE 7:

Distribution of Respondents by Age

Age Category	Frequency	Percentage
18-25 years	6	5.5
26-35 years	54	49.1
36-45 years	32	29.1
46-55 years	15	13.6
More than 55 years	3	2.7
Total	110	100.0

4.3.4 Distribution of Respondents by Working Experience with Respective Firms

The study also determined the period that the respondents had worked with the company. The results as shown in Table 8 indicated that majority (38.2%) of the respondents had worked with their respective firms for a duration ranging from 11 to 15 years. It was also noted that 32.7% of the respondents had worked with their companies for a period ranging from 6 to 10 years. Additionally, 13.6% of the respondents had worked with their organizations for a period of between 16 and 20 years. The least number of employees had worked at their firms for duration of not more than 5 years (6.4%) and for over 20 years (9.1%). These results corroborated the earlier observations (Table 7) that most of the senior staff working with listed firms were middle-aged, that is, could have worked for a period of more than 5 years and not more than 20 years. These findings could have been attributed to reduced labour turnover and minimal recruitment of new employees over the past few years.

TABLE 8:**Distribution of Respondents by Working Experience with Respective Firms**

	Frequency	Percentage
1-5 years	7	6.4
6-10 years	36	32.7
11-15 years	42	38.2
16-20 years	15	13.6
over 20 years	10	9.1
Total	110	100.0

4.4 Descriptive Analysis, Interpretations and Discussion

The data with regard to forensic accounting services (litigation support services, forensic data analysis, and fraud awareness) and fraud mitigation was on 5-point Likert scale where 1 (SD), 2 (D), 3 (I), 4 (A), and 5 (SA) represented Strongly Disagree, Disagree, Indifferent, Agree, and Strongly Agree respectively.

4.4.1 Litigation Support Services

The study examined the views of senior staff working with listed firms with regard to litigation of support services. The results to this effect are illustrated in Table 8.

The study examined litigation support services of firms listed at the NSE. The results illustrated in Table 9 indicated that a 20 % of the respondents strongly agreed to the view that litigation support services had helped their companies prevent loss of revenue through fraud by minimizing the potentiality of criminal behavior. Another 43.6 % of the respondents agreed with the view. This means that a total of 63.3 % of the respondents were of the view that litigation support services has helped prevent losses which are associated with fraud. However, 10 % disagreed with the view while 20.9 % remained indifferent. An insignificant percentage (5.5 %) of the respondents disagreed with the view. This supports the findings of Aduwo (2016) who claimed that forensic accounting services reverse seepages that cause corporations to collapse.

With regard to the opinion that litigation support services had helped in fraud mitigation in the respondents respective companies through translation of complex financial information, 31.8 % of the respondents strongly agreed with the view whereas 48.2 % of the surveyed staff registered their agreement with the view.

TABLE 9:
Descriptive Statistics for Litigation Support Services

	SA (%)	A (%)	I (%)	D (%)	SD (%)	Mean	Std. Dev.	Skewness		Kurtosis	
								Statistic	Std. Error	Statistic	Std. Error
Litigation support services have helped your company prevent loss of revenue through fraud by minimizing the potentiality of criminal behavior	20	43.6	20.9	10.0	5.5	3.63	1.082	-.755	.230	.062	.457
Litigation support services have helped in fraud mitigation in your company through translation of complex financial information.	31.8	48.2	9.1	10.0	.9	4.00	.948	-.986	.230	.537	.457
The number of consultation services provided by litigation support professionals has increased significantly over the past 5 years	30.0	51.8	10.0	3.6	3.6	4.05	1.012	-.651	.230	3.397	.457
By acting as an expert witness in court, litigation support professionals have helped in fraud mitigation in your company	27.3	53.6	7.3	6.4	5.5	3.91	1.045	-1.337	.230	1.550	.457
There has been a considerable increase in the number of occasions the litigation support professionals served as expert witness in court of law.	32.7	45.5	9.1	10.9	1.8	3.96	1.013	-1.005	.230	-.440	.457

A 9.1 % of the participants remained indifferent of the view, whereas a total of 19 % disagreed with it. From the results, it can be stated that majority (80 %) of the respondents agreed with the view. The results were similar to those of a past study conducted by Nyaiwu (2018) in Nigeria which indicated that an increase in litigation support led to a decrease in the motive to commit fraud.

Additionally, the study established that a total of 80.9% of the surveyed respondents agreed to the view that by acting as expert witnesses in court, litigation support professionals had helped in fraud mitigation in their companies. 7.3 % remained indifferent, whereas a few percentage (6.4 %) of the respondents disagreed to the opinion and 5.5 % strongly disagreed. These findings were in line with an earlier study conducted by Dada, Olowabi and Okwu (2013) in Nigeria which indicated that many cases that were being thrown out of court was

because forensic accountants were not being involved in the investigation and prosecution processes as expert witnesses.

It was further revealed that 30 % of employees working in the sampled listed firms strongly agreed with the proposition that the number of consultation services provided by the companies had increased significantly over the past 5 years this reduction in fraud, with a significant number 51.8 % registering their agreement with the view. On the same breadth, it was observed that a total of 10.0 % of the respondents remained indifferent with the foregoing assertion. The total of those who disagreed with the view were 7.2 %. Moreover, 32.7% of the respondents strongly agreed with the argument that there had been a considerable increase in the number of occasions the respondent served forensic accountants as expert witnesses in the court of law. Furthermore, 45.5 % of the respondents agreed to the view, which is also quite a significant number. An analysis of the aforementioned findings indicate that litigation support services play an important role in fraud mitigation can be useful for firms listed at NSE .

It was ascertained that on average the respondents were indifferent with regard to the argument that litigation support services had helped their companies prevent loss of revenue through fraud by minimizing the potentiality of criminal behavior (mean = 3.63). Regarding the opinions that litigation support services had helped in fraud mitigation in the company through translation of complex financial information (mean = 4.00); that by acting as an expert witnesses in court, litigation support professionals had helped in fraud mitigation in their respective company's (mean = 3.91) the respondents views generally agreed with the view. The views of respondents with regard to the foregoing assertions were largely divergent (std dev >1.000). In addition, the respondents generally agreed on the proposition regarding the number of consultation services provided by the companies had increased significantly

over the past 5 years (mean = 4.05). The opinions of respondents' regarding the proposition also varied significantly (std dev > 1.000). Moreover, the study established that the respondents on average agreed that there had been a considerable increase in the number of occasions the respondent the forensic accountants served as expert witnesses in a court of law (mean = 3.96). Regarding the aforementioned assertion the respondents' views also varied significantly (std dev > 1.000).

The results simply indicated the direction of skew and the extent of peakedness or flatness of the data distribution, which is quite ambiguous for discrete data as it is the case with the current study. The skewness of the data with regard to all statements was between -.651 and -1.337. Most of the statements indicated negative skew meaning that they are somehow skewed to the left. Therefore, with regard to the present study, there were high levels of kurtosis with regard to the assertion, that there was an increase in the number of consultation services provided by forensic accountants. Similarly, this was also seen in the assertion that by acting as expert witness in court of law, litigation support professionals had helped in fraud mitigation (Kurtosis = 1.550).

4.4.2 Forensic Data Analysis

The study further analyzed the opinions of the sampled middle and lower level managers, internal auditors, accountants and procurement officers working with firms listed at the NSE in respect of application of forensic data analysis. A summary of these views is presented in Table 10.

TABLE 10:
Descriptive Statistics for Forensic Data Analysis

	SA (%)	A (%)	I (%)	D (%)	SD (%)	Mean	Std. Dev.	Skewness		Kurtosis	
								Statistic	Error	Statistic	Error
The use of forensic data analysis facilitates fraud mitigation in your company because it enables determination of people associated with fraud hence assisting in fraud mitigation.	58.2	41.8	0.0	0.0	0.0	4.58	.496	-.336	.230	-1.922	.457
Forensic data analysis assists in fraud mitigation in your company by helping to ascertain deviant transactions before they crystallize into fraud.	15.5	57.3	.9	26.4	0.0	3.62	1.040	-.620	.230	-.913	.457
Forensic data analysis summarizes complex financial issues thus resulting in reduced financial criminality in your company.	15.5	47.3	13.6	21.8	1.8	3.53	1.055	-.478	.230	-.773	.457
The number of people determined to be associated with fraud has reduced considerably in your company over the past 5 years.	11.8	54.5	1.8	25.5	6.4	3.40	1.175	-.620	.230	-.881	.457
The annual number of ascertained deviant transactions has reduced significantly over the past 5 years.	18.2	43.6	.9	24.5	12.7	3.30	1.358	-.429	.230	-1.241	.457

According to the results presented in Table 10, it was found that the majority of the respondents (58.2%) strongly agreed that the use of forensic data analysis facilitated fraud mitigation in their respective companies because it enabled determination of people associated with fraud hence assisting in fraud mitigation. The rest (41.8%) also admitted to the view. None of the respondents disagreed or remained indifferent. This concurred with the findings of Warshavsky (2010) that forensic accountants are proficient at investigating since they are capable of determining the people associated with fraud. On the view that forensic data analysis helps ascertain deviant transactions before they crystalize into fraud, 15.5 % of the respondents strongly agreed with it, while 57.3 % registered their agreement. This resulted into a total of 72.8% of the respondents concurring with the argument. These results were similar to the ones of a past study conducted by Aduwo (2016) which revealed that forensic data analysis had a significant relationship with fraud mitigation since they can detect errors and deviant transactions before they turn into fraud.

Regarding the opinion that forensic data analysis summarized complex financial issues, thus resulted in reduced financial criminality in the companies more than half (62.8%) of the sampled staff concurred to the view. This is the total of those who strongly agreed (15.5 %) and those who agreed (47.3 %). The findings concur with the ones of a past empirical analysis conducted by Owojori and Asaolu (2009) in Nigeria which established that in order for complex business transactions to be properly understood, forensic accountants often aid in the analysis, summary and presentation of transactions. Though, a significant number (66.3%) of the respondents agreed that the number of people determined to be associated with fraud had reduced considerably in their companies over the past 5 years, 25.5% of the staff disagreed with the assertion. Moreover, the study revealed that most (61.8%) of the employees concurred that the annual number of ascertained deviant transactions had reduced significantly over the past 5 years, hence an improvement in fraud mitigation.

It was further noted that on average the respondents strongly agreed to the assertions that the use of forensic data analysis facilitated fraud mitigation in the companies because it enabled determination of people associated with fraud hence assisted in fraud mitigation (mean = 4.58); In relation to the foresaid proposition the views of respondents were largely similar (std dev <1.000). The study, further, found that the respondents generally concurred that forensic data analysis assisted in fraud mitigation in the companies by helping to ascertain deviant transactions before they crystallized into fraud (mean = 3.62); and that forensic data analysis summarized complex financial issues thus resulted in reduced financial criminality in their respective companies (mean = 3.53). The views of respondents with regard to the foregoing propositions were also similar with (std dev <1.000). Furthermore, the study acknowledged that generally the respondents disagreed regarding the opinion that the number of people determined to be associated with fraud had reduced considerably in their

company over the past 5 years (mean = 3.40). Similarly, the respondents also generally disagreed to the argument that the annual number of ascertained deviant transactions had reduced significantly over the past 5 years (mean = 3.30). The respondents held largely similar views in respect of the foregoing views (std dev <1.000).

The study further revealed that all responses regarding forensic data analysis were negatively skewed. This implied that the views of the surveyed staff regarding the aforesaid assertion were largely similar and inclined towards the same side. In respect of results of kurtosis, the study revealed that all the statements had negative cases of kurtosis ranging from -.773 to -1.922 which is also inclined toward the same direction.

4.4.3 Fraud Awareness

The opinions of a section of senior staff regarding fraud awareness in the 5 firms listed at the NSE were analyzed.

The findings regarding fraud awareness as shown in Table 11 indicated that 22.7 % of the respondents strongly admitted to the view that the induction programmes for new employees were customized to create awareness on fraud issues and fraud mitigation, 67.3 % agreed to it whereas 10.0 % remained indifferent. This number translated to 90 % of those who agreed which is highly significant figure. This means that if the firms listed at NSE would induct their employees on fraud issues, fraud mitigation would be enhanced. Of the surveyed employees less than half 45.5% (strongly agreed and agreed) of the respondents registered their agreement with the argument that the number of annual employee trainings on fraud in their firm had increased consistently over the past 5 years. Though less than average, the study findings were consistent with those ones of an earlier study carried out by Maurer (2013) which established that fraud awareness training programmes for both employees and managers is a critical component of a well-rounded programme for preventing

and mitigating fraud. 6.4 % of the respondents were indifferent of the view whereas almost a third (28.1 %) disagreed with the view. The respondents showed varied views on this statement.

The results also was similar to those of the proposition that employees were regularly (at least quarterly) trained on how to respond to suspicious incidences relative to fraud in the company in which a small percentage (19.1 %) strongly agreed to it. However 64.5 % agreed to the proposition, translating to a total of 83.6 % of those who registered their agreement. 5.5 % of the respondents remained indifferent of the view whereas a total of 10.9 % disagreed with the view. The higher percentage of those who agreed shows that regular training of employees would result in reduction of fraudulent activities thus enhancement of fraud mitigation. On the assertion that mutual awareness programs conducted regularly has enhanced fraud mitigation, there were varied opinions among the respondents. As noted from the findings, 18.2 % strongly agreed while 25.5 % agreed with the view. This amounts to 43.7 % of those who registered their agreement which is less than half the number of the responses. On the same breadth, the respondents strongly disagreed (31.8 %) with this assertion, 24.5 % of the respondents also disagreed with the view. The study could not therefore adequately determine whether the mutual programs were being conducted regularly. On the view that warning posters were issued regularly, less than 1% strongly agreed with the assertion, 32.7 % agreed with it while 41.8 % remained indifferent. This could be likelihood that most of the companies under study did not take the issue of warning posters seriously. It was further observed that 24.5 % of the surveyed staff in the listed firms disagreed that posters warning employees on consequences of fraud were issued regularly (monthly-bi-monthly) or placed on strategically positioned notice boards in their company. In this case, the study could not adequately establish whether the use of posters to warn staff of the consequences of fraud was of any significance in fraud mitigation.

TABLE 11:**Descriptive Statistics for Fraud Awareness**

	SA (%)	A (%)	I (%)	D (%)	SD (%)	Mean	Std. Dev.	Skewness		Kurtosis	
								Statistic	Std. Error	Statistic	Std. Error
The induction programmes for new employees are customized to create awareness on fraud issues and fraud mitigation.	22.7	67.3	10.0	0.0	0.0	4.13	.560	.038	.230	.091	.457
The number of annual employee trainings on fraud in your firm has increased consistently over the past 5 years.	9.1	36.4	6.4	29.1	19.1	2.87	1.335	-.022	.230	-.1417	.457
Employees are regularly (at least quarterly) trained on how to respond suspicious incidences relative to fraud in your company.	19.1	64.5	5.5	9.1	1.8	3.90	.877	-.1297	.230	-1.598	.457
Mutual awareness programmes on the demerits of fraud on the organization are regularly (at least quarterly) conducted in your company.	18.2	25.5	0.0	24.5	31.8	2.74	1.566	.230	.230	1.930	.457
Posters warning employees on consequences of fraud are issued regularly (monthly-bi-monthly) or placed on strategically positioned notice boards in your company	.9	32.7	41.8	0.0	24.5	2.44	1.208	.374	.230	-.1377	.457

The results further revealed that the respondents on average generally agreed that the induction programmes for new employees were customized to create awareness on fraud issues and fraud mitigation (mean = 4.13). Regarding the foregoing views the respondent's views were similar (std dev < 1.000). With regard to the proposition that the number of annual employee trainings on fraud in their firm had increased consistently over the past 5 years (mean = 2.87) which is on average. The opinions of respondents in relation to the proposition were largely diverse (std dev >1.000). On average the respondents agreed with regard to the arguments that employees were regularly (at least quarterly) trained on how to respond to suspicious incidences relative to fraud in their respective companies (mean = 3.90). More than half of the sampled staff disagreed with the assertion that mutual awareness programmes on the demerits of fraud on the organization were regularly (at least quarterly) conducted in their respective companies (mean = 2.74). The respondents held differing views in light of foresaid assertions (std dev >1.000). Similarly, the staff generally disagreed to the argument that posters warning employees on consequences of fraud were issued regularly

(monthly-bi-monthly) or placed on strategically positioned notice boards in their respective firms (mean = 2.44). In reference to the foregoing assumption the opinions expressed by the respondents largely differed (std dev >1.000).

With regard to fraud awareness, the responses were skewed both negatively and positively. This meant that there were those staff who agreed with the respective assertions while others disputed the same. The proposition that, induction programmes for new employees were customized to create awareness on fraud issues and fraud mitigation was the most minimally skewed (0.038), which was interpreted to mean that majority of the respondents were in concurrence with this argument. The results of kurtosis exhibited both negative and positive cases.

4.4.4 Fraud Mitigation

The study findings regarding fraud mitigation are illustrated in Table 12. The analysis of the opinions of the surveyed staff as shown in Table 12, established that more than half (48.2 %) of the sampled employees strongly agreed that a zero-tolerance policy towards fraudulent behavior had been set up in their companies to make it more difficult for perpetrators to engage in fraudulent activities, thereby mitigating of fraud. 10 % of the respondents agreed with the view, translating to 58.2 % of the respondents registering their agreement on the same. This was slightly over half of the number of responses. This supported the argument of Brummell (2015) that it is important for companies to create a zero tolerance policy towards fraudulent behavior because it will make it more difficult for perpetrators to engage in fraud activities for fear of the consequences. However, quite a significant number (41.8 %) of the respondents disagreed with the assertion, giving mixed reactions. In view of the argument that investigations were immediately commenced to any perceived fraudulent transactions and that fraud was mitigated as fast as possible, (53.6%) of the surveyed staff strongly agreed while 18.2 % agreed. This meant that majority (71.8 %)

concluded with the proposition. Other firms listed at the NSE should therefore ensure that they also adopt the same strategy so as to enhance the fight against fraud. Less than 1 % was indifferent on the view and 27.3 % disagreed. This difference could be the different views of the firms under study.

TABLE 12:
Descriptive Statistics for Fraud Mitigation

	SA (%)	A (%)	I (%)	D (%)	SD (%)	Mean	Std. Dev	Skewness		Kurtosis	
								Statistic	Error	Statistic	Error
A zero-tolerance policy towards fraudulent behavior has been set up in your company to make it more difficult for perpetrators to engage in fraudulent activities.	48.2	10.0	0.0	41.8	0.0	3.65	1.431	-.232	.230	-1.892	.457
Investigations are immediately commenced to any perceived fraudulent transactions that fraud as mitigated as fast as possible.	53.6	18.2	.9	27.3	0.0	3.98	1.285	-.758	.230	-1.210	.457
New employees are recruited only after their past working history is devoid of fraudulent implications, allegations or convictions.	8.2	30.9	26.4	24.5	10.0	3.03	1.137	-.131	.230	-.865	.457
Control procedures put in place in your company have led to reduced fraudulent activities over the past 5 years.	38.2	29.1	0.0	32.7	0.0	3.73	1.277	-.441	.230	-1.515	.457
The number of perpetrators of fraudulent activities interdicted or laid off in your company has increased significantly over the past 5 years.	.9	68.8	0.0	20.2	10.1	3.30	1.118	-1.030	.230	-.588	.457

On the proposition that new employees were only recruited after knowing their past history, the findings also showed varied views since 8.2 % of the participants strongly agreed on the assertion while 30.9 % agreed with it. This meant that a lesser percentage 39.1 % of the employees concurred that new employees were recruited only after their past working history was devoid of fraudulent implications, allegations or convictions. However, 26.4% of the respondents were indifferent to the view. An almost similar percentage of the respondents (34.5%) disagreed with the view. In this regard, the study could not fully establish whether the companies under study actually feted new employees before their recruitment. A significant percentage (67.3 %) of the respondents registered their agreement with the view

that control procedures put in place in the company had led to reduced fraudulent activities over the past 5 years. This is the total of those who strongly agreed and those who agreed. This supported the findings of Brumell(2015) who opined that opportunity for employees to commit fraud is facilitated by lack of appropriate control procedures in place. This can be inferred to mean that organizations need to put appropriate control procedures in place in order deter employees from committing fraud since this will help mitigate fraud. The remaining percentage (32.7 %) disagreed with the proposition. The study further established that less than 1 % of participants strongly agreed with the proposition that the number of perpetrators of fraudulent activities interdicted or laid off in the companies had increased significantly over the past 5 years, resulting in fraud mitigation. Majority of the respondents (68.8 %) agreed with the proposition, concurring with the findings of Ofiafor & Otolor (2013) which revealed that forensic accounting services enabled easy prosecution of fraud perpetrators thereby enhancing mitigation of fraud.

The results also demonstrated that on average the respondents strongly agreed to the arguments that a zero-tolerance policy towards fraudulent behavior had been set up in their companies to make it more difficult for perpetrators to engage in fraudulent activities (mean = 3.65); and that investigations were immediately commenced to any perceived fraudulent transactions and that fraud was mitigated as fast as possible (mean = 3.98). In relation to the foresaid views the respondent's opinions varied significantly (std dev > 1.000). The study, further, revealed that on average the respondents were indifferent in relation to the propositions that new employees were recruited only after their past working history was devoid of fraudulent implications, allegations or convictions (mean = 3.03); and that control procedures put in place in the companies had led to reduced fraudulent activities over the past 5 years (mean = 3.73). Similarly, the staff were generally disagreed on the proposition pertaining the argument that the number of perpetrators of fraudulent activities interdicted or

laid off in the companies had increased significantly over the past 5 years (mean = 3.30). The respondents held significantly differing opinions with regard to the aforementioned views (std dev > 1.000).

In respect of fraud mitigation, the results as shown in Table 12 indicated that the data collected was skewed negatively and inclined in the same direction. This meant that there were substantially similar opinions regarding fraud mitigation in listed firms. The results of kurtosis corroborated the results of skewness since high and negative kurtosis results were seen across almost all statements on fraud mitigation.

4.5 Inferential Analysis, Interpretations and Discussion

This section presents results of inferential analysis encompassing both pairwise correlation and multiple regression analysis. The rationale of this analysis is to determine the relationship between various components characterizing forensic accounting services and fraud mitigation in listed firms in Kenya. The analysis further assists in determining the effect of forensic accounting services on fraud mitigation.

4.5.1 Correlation Analysis, Interpretations and Discussion

The pairwise correlation was used to determine how forensic accounting services (litigation support services, forensic data analysis, and fraud awareness) were related to fraud mitigation with regard to various firms listed at the Nairobi Securities Exchange. The significance of the relationship between the variables was tested at 95% confidence level (p-value = 0.05). The pertinent results are presented in Table 13.

TABLE 13:**Correlation Matrix**

```

. pwcorr fm fa fda lss, sig star (0.05)

```

	fm	fa	fda	lss
fm	1.0000			
fa	0.7663*	1.0000		
	0.0000			
fda	0.7650*	0.8060*	1.0000	
	0.0000	0.0000		
lss	0.9397*	0.6534*	0.7171*	1.0000
	0.0000	0.0000	0.0000	

The results of the correlation analysis as shown in Table 13, indicated that the relationship between litigation support services and fraud mitigation was positive, strong and statistically significant at 0.05 level of significance ($r = 0.9397$; $p < 0.05$). The results meant that enhancing the aforesaid services had significant likelihood of resulting in better mitigation of risk by listed firms. Similarly, it was revealed that the correlation between forensic data analysis and fraud mitigation was positive, strong and statistically significant ($r = 0.7650$; $p < 0.05$). This meant that increased use of forensic data analysis was bound to enhance mitigation of fraudulent activities in listed firms. The relationship between fraud awareness and fraud mitigation was established to be positive, strong and statistically significant ($r = 0.7663$; $p < 0.05$). The results were interpreted to mean that increased awareness of issues pertinent to fraud among employees was likely to substantially improve mitigation of fraud. Each of the components of forensic accounting services (litigation support services, forensic data analysis, and fraud awareness) was observed to be significantly correlated with fraud mitigation at 0.05 level of significance. Therefore, it was imperative to infer that there was a great likelihood that the aforementioned accounting

services, more especially the legal support services, would result in substantial enhancement of fraud mitigation amongst listed firms.

These results concurred with the findings made by earlier researchers where the importance of legal support services was emphasized. The Ejoh’s study observed that the aforesaid services enable determination of whether or not to proceed with cases in court. The forensic services were found to support the lawyers representing firms in courts of law where their services offered assurance of a significant height by giving the required results in resolving disputes (Oyedokun, 2013). This was likely to be paramount in addressing fraudulent activities. In addition, the results of the present study corroborated observations made by Ofiafoh and Otor (2013). These scholars had indicated and recommended that the anti-corruption bodies ought to think of employing the forensic accountants’ services in order to improve judgment of the fraud offenders and aid them in courtyard cases involving financial as well as economic crimes.

4.5.2 Regression Analysis, Interpretations and Discussion

The study sought to examine the effect of forensic accounting services on fraud mitigation in listed firms. The results to this effect are presented in Table 14.

TABLE 14:
Regression Table

```
. reg fm fa fda lss
```

Source	SS	df	MS	Number of obs = 110		
Model	51.0327696	3	17.0109232	F(3, 106) =	426.52	
Residual	4.22763835	106	.039883381	Prob > F =	0.0000	
				R-squared =	0.9235	
				Adj R-squared =	0.9213	
Total	55.260408	109	.50697622	Root MSE =	.19971	

fm	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
fa	.1972076	.034675	5.69	0.000	.128461	.2659542
fda	.0056632	.0538732	0.11	0.916	-.1011457	.1124722
lss	.698228	.0358143	19.50	0.000	.6272226	.7692333
_cons	.5100916	.1252422	4.07	0.000	.2617867	.7583965

4.5.2.1 Model Summary

The results shown in Table 14 revealed that there existed a positive and strong general correlation between forensic accounting services ((litigation support services, forensic data analysis, and fraud awareness) and fraud mitigation. The results of coefficient of determination ($R^2 = 0.9235$) indicated that 92 % of variance in fraud mitigation could be explained by the studied forensic accounting services. The remaining proportion of fraud mitigation (8 %) could be attributed to other factors which were not part of this study. The aforesaid relationship was further found to be statistically significant at 0.05 level of significance ($p < 0.05$). This concurred with the findings of Kasum (2009) who opined that issues related with fraud were found to be solved significantly by the use of forensic accounting services.

4.5.2.2 Analysis of Variance

The results of analysis of variance shown in Table 14, indicate that the value of F-statistics, $F(3, 106) = 426.52$; $p < 0.05$ was statistically significant. The results implied that the overall model ($Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$) was statistically significant and could, therefore, be employed in predicting fraud mitigation in listed firms. The findings led to the rejection of the general null hypothesis that forensic accounting services did not have significant effect on fraud mitigation. Instead, the results confirmed that forensic accounting services had statistically significant effect on fraud mitigation amongst listed firms.

4.5.2.3 Parameter estimates

All the independent variables showed positive correlation coefficients with fraud mitigation in the firms listed at the NSE, meaning a positive association. These are the regression equation values that will be used to predict fraud mitigation from the forensic accounting services studied. The coefficient results were used to substitute the regression model as follows.

$$\text{Fraud Mitigation } (\hat{y}) = .510 + 0.698 X_1(\text{Litigation Support}) + 0.006 X_2 (\text{Forensic Data Analysis}) + 0.197 X_3 (\text{Fraud Awareness}) + \varepsilon \dots\dots\dots 4.1$$

According to the intercept (β_0), when the three independent variables are held constant, the value of fraud mitigation in the listed firms at the Nairobi Securities Exchange will be .510. In addition, holding all the other independent variables constant, a unit increase in litigation support services would lead to a 0.698 improvement in fraud mitigation in the listed firms at the Nairobi Securities Exchange. Further, holding on the other independent variables constant, a unit increase in forensic data analysis would lead to a 0.006 improvement in fraud mitigation in the listed firms at the Nairobi Securities Exchange. In addition, holding all the other variables constant, a unit increase in fraud awareness would lead to a 0.197 improvement in fraud mitigation in the listed firms at the Nairobi Securities Exchange.

This was interpreted to mean that if the listed firms wanted to enhance fraud mitigation by a unit, then they were required to enhance litigation support services, forensic data analysis, and fraud awareness by 0.698 unit, 0.006 unit, and 0.197 unit respectively when other issues were assumed not to be influential to fraud mitigation in listed firms. According to the results of t-statistics as shown in Table 4.10, the effect of litigation support services ($t = 19.50$; $p < 0.05$) and fraud awareness ($t = 5.69$; $p < 0.05$) on fraud mitigation was further established to be statistically significant. These findings underlined the critical role played by both litigation support services and fraud awareness in addressing fraudulent activities in listed firms in Kenya.

However, the effect of forensic data analysis on fraud mitigation was found to be positive but not statistically significant ($t = 0.916$; $p > 0.05$). This means that the coefficient for forensic data analysis is not statistically different from 0 since its p- value is greater than 0.05. The results herewith contrasted with previous findings that in prosecution of fraud,

forensic data analysis provided by accountants is required (Onodi et al., 2015). As such, it was found and concluded to be imperative for the aforesaid firms to not only adopt and implement fraud awareness programs to their employees, but also engage the services of forensic accountants in order to mitigate frauds in listed firms.

4.6 Diagnostic Results

In order to determine if the cross-sectional data model was suitable in predicting fraud mitigation, diagnostic tests were carried out for normality, linearity, multi-collinearity and heteroskedasticity.

4.6.1 Normality Tests for the Dependent variable

Multiple regression analysis assumes that variables have normal distribution. Non-normally distributed variables can distort relationships and significance tests. In this study normal distribution of data was tested by for normally distributed data, the observed values need to be spread along the straight diagonal line (line of fit).

P_{norm} depicts the sensitivity of the deviations from normality nearer to the center of the distribution.

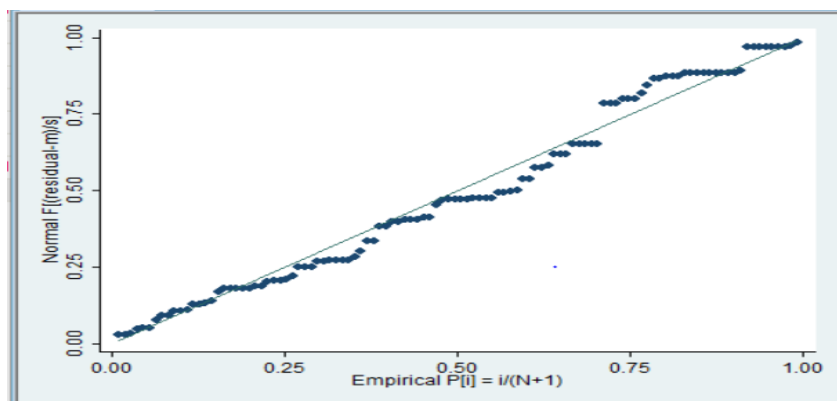


FIGURE 4:

P_{norm}

The observed values as in pnorm plot tests in Figure 4 are spread very close to the straight line for all the variables of the study, showing that the data was normally distributed. This helped to ascertain whether the sample was drawn from a normally distributed population.

4.6.2 Test for linearity of the variables

Scatter graph was used to test for linearity of the independent variables with the dependent variable. The rationale for doing the test was to test if the model was efficient. This is because where data set is non-linear; the regression procedure would be unsuccessful in capturing the trend mathematically. From Figure 5 the direction of the distribution of the points suggest positive linear relationship between fraud mitigation and the forensic accounting services under study. The assumption of linearity has not been violated.

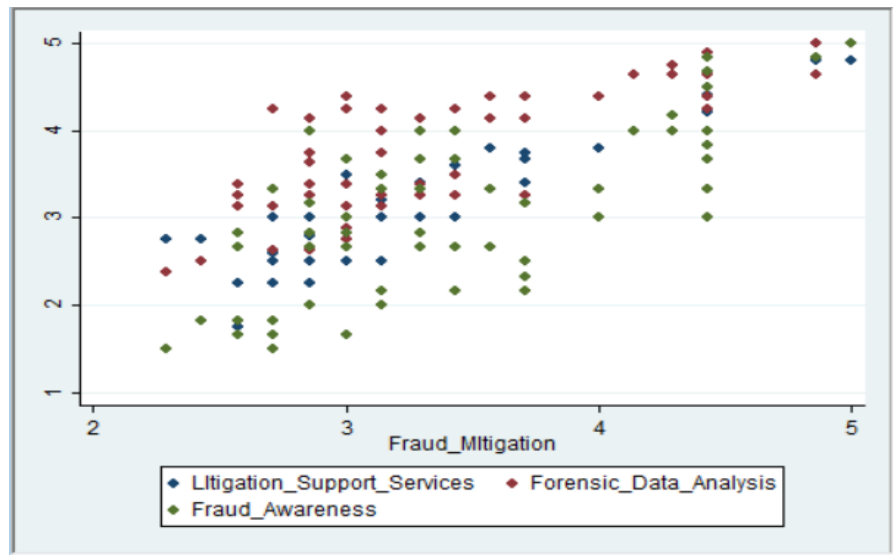


FIGURE 5:
Scatter Graph

4.6.3 Multicollinearity results

The results of diagnostic tests in reference to multicollinearity in Table 15 indicated that the variable litigation support services had a tolerance of 0.4695 and a VIF of 2.13,

forensic data analysis had a tolerance of 0.2871 and a VIF of 3.48 while fraud awareness had a tolerance of 0.3386 and a VIF of 2.95. Since the tolerance for all the variables were more than 0.1 and the VIF was not more than 5 this indicated lack of Multicollinearity between variables. The results indicated that all the independent variables, that is, litigation support services; forensic data analysis and fraud awareness singularly exhibited a high degree of independence with regard to other components of forensic accounting services in listed firms. Multicollinearity test was necessary since it helped the researcher to know whether to reject or accept the null hypothesis. This is because the presence of multicollinearity makes the coefficients confidence intervals to become wide thus creates problems in assessing the importance of the explanatory variables in explaining variability in the dependent variable.

TABLE 15:

Variance Inflation Factor

. vif		
Variable	VIF	1/VIF
fda	3.48	0.287059
fa	2.95	0.338634
lss	2.13	0.469528
Mean VIF	2.86	

Therefore, there were no multicollinearity problems since the variables constituting forensic accounting services returned results which were within the acceptable maximum threshold of VIF = 5. As such, the initial multiple regression equation stated as follows was adopted.

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where;

Y_i = Fraud Mitigation

β_0	=	Constant
$\beta_1, \beta_2, \beta_3$	=	Regression or Beta Coefficients of Independent Variables
X_1	=	Litigation Support Services
X_2	=	Forensic Data Analysis
X_3	=	Fraud Awareness

The aforementioned findings underlined the critical role played by the independent variables under this study in addressing fraudulent activities in listed firms in Kenya. The results herewith were concurred with previous findings that by employing the work of forensic accountants, preventing and mitigating of fraud cases improved significantly (Omondi, 2013; Kimani, 2015 and Opiyo, 2017).

4.6.4 Heteroscedasticity Results

Chi-squared test was performed in order to detect if there were any cases of heteroscedasticity. The rationale for carrying out the test was to ensure that the regression model was correctly specified and that there were no variables omitted from the model. Though model exhibited chi (1) 2 values of 6.26 as shown in Table16, the value is slightly higher than the required threshold of 5.99. It can therefore be concluded that there were no serious cases of heteroscedasticity since ($p < 0.05$).

TABLE 16:

Chi-Squared Test

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of fm

chi2(1)      =      6.26
Prob > chi2  =      0.0123
```

4.7 Hypothesis Testing

From the findings the value of F-statistics, $F(3, 106) = 426.52$; $p < 0.05$ was statistically significant for all the three independent variables. This meant that the collective contribution of forensic accounting services under study was significant in mitigating fraud in firms listed at the Nairobi Securities Exchange. Based on the rule of significance, the study rejected the null hypotheses (H_{01}) that Litigation support services has no significant effect on fraud mitigation in the listed firms at the Nairobi Securities Exchange; (H_{02}) Forensic data analysis has no statistical significant effect on fraud mitigation in the listed firms at the Nairobi Securities Exchange (H_{03}): Fraud awareness has no statistical significant effect on fraud mitigation in the listed firms at the Nairobi Securities Exchange and concluded that all the independent variables have a statistically significant effect on fraud mitigation in the listed firms at the Nairobi Securities Exchange.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the pertinent study findings, conclusions and recommendations regarding the effects of forensic accounting services on fraud mitigation in firms listed at the NSE. In addition, this chapter illustrates suggestions for other areas that future studies can focus on.

5.2. Summary of Findings

This section will provide a summary of the key findings. The summary captures both descriptive and inferential findings of the forensic accounting services (litigation support services, forensic data analysis, and fraud awareness) and fraud mitigation of the firms listed at the NSE.

5.2.1 Effect of Litigation Support Services on Fraud Mitigation in Firms Listed at Nairobi Securities Exchange

Ascertaining the effect of litigation support services on fraud mitigation in firms listed at the Nairobi Securities Exchange was the first objective. Litigation support services were measured by how the increase in the number of consultations services that the litigation support professionals have provided in the past five years and the number of occasions they served as expert witness in the court has helped mitigate fraud. It was ascertained that litigation support services had helped the companies to prevent loss of revenue through fraud by minimizing the potentiality of criminal behavior. It was also established that this forensic accounting service helped consolidate evidence which had enabled the companies to win fraud cases. It was further noted that these services helped in fraud mitigation in the companies through translation of complex financial information. In addition, litigation

support professionals were found to have helped in fraud mitigation in the companies by acting as expert witnesses in court. The study also found that there had not been considerable increase in the number of occasions forensic accountants had served as expert witnesses for the companies in courts of law which have helped mitigate fraud. However, the study found out that a substantial number of the respondents remained indifferent in that view on litigation support services preventing loss of revenue. The inferential statistics established that there existed a strong positive and statistically significant relationship between litigation support services and fraud mitigation in listed firms. This implies that an enhancement in litigation support services was expected to have a positive and substantial, effect on fraud mitigation.

5.2.2 Effect of Forensic Data Analysis on Fraud Mitigation in Firms Listed at the Nairobi Securities Exchange

The study also sought to determine the effect of forensic data analysis on fraud mitigation in firms listed at the NSE. The objective was measured by the amount of deviant transactions ascertained yearly that discourages further criminal behavior and the number of people determined to be associated with fraud. It was found that the use of forensic data analysis facilitated fraud mitigation in the companies because it enabled determination of people associated with fraud which assisted in fraud mitigation. It was also revealed that forensic data analysis enhanced fraud mitigation in the companies because it looked beyond audit trails by reconstructing financial statements. It was further noted that forensic data analysis assisted in fraud mitigation in the companies by helping to ascertain deviant transactions before they crystalized into fraud. It was also established that forensic data analysis summarized complex financial issues which resulted in reduced financial criminality in the companies. However, there were varied views on most of the propositions. The inferential statistics established that there was a positive, but weak relationship between

forensic data analysis and fraud mitigation. This implied that an increase in forensic data analysis was expected to result in fraud mitigation in the listed companies but only to a small extent.

5.2.3 Effect of Fraud Awareness on Fraud Mitigation in Firms Listed at the Nairobi Securities Exchange

The study sought to establish the effect of fraud awareness on fraud mitigation in firms listed at NSE. The measurement indicators were the increase in the number of employee training on fraud issues which might have deterred them from indulging in fraudulent activities and the regularity on the issuance of warning posters on the consequences of fraud. It was ascertained that induction programmes for new employees, in the companies, were customized to create awareness on fraud issues and fraud mitigation. It was also found that employees were educated on the appropriate methods of handling the companies' financial data and/ or information. It was further demonstrated that the number of annual employees' trainings on fraud in those companies had increased consistently over the five year period. On the other hand, it was revealed that mutual awareness programmes on the demerits of fraud on the organization were not regularly (at least not quarterly) conducted in the company. Additionally, it could not substantiate whether posters warning employees on consequences of fraud were issued regularly (monthly – bi-monthly) or placed on strategic positioned notice boards in the companies. The inferential statistics revealed that there existed a positive, strong and statistically significant relationship between fraud awareness and fraud mitigation. This was inferred to mean that if the firms listed at the NSE implement regular fraud awareness trainings to their employees on fraud issues, fraud mitigation will be enhanced substantially.

5.2.4. Summary of Fraud Mitigation in Firms Listed at the Nairobi Securities Exchange

The units of analysis were firms listed at the NSE. Fraud mitigation in the listed firms was measured by the number of people interdicted so that it can discourage other employees from engaging in fraudulent activities and whether the companies under study had adopted any fraud intervention strategies in an effort to mitigate fraud. The study demonstrated that zero-tolerance policy towards fraudulent behaviour had been set up in the companies to make it more difficult for perpetrators to engage in fraudulent activities. It was also noted that investigations were immediately commenced to any perceived fraudulent transactions and that fraud was mitigated as fast as possible. It was further demonstrated that appropriate control procedures had been put in place in their companies to ensure that fraudulent activities were substantially reduced. Moreover, it was found that the companies had adopted effective ways of identifying factors that pressurized employees to engage in fraudulent activities. It was also noted that employees were recruited only after their past working histories were devoid of fraudulent implications, allegations or convictions. Furthermore, it was ascertained that control procedures put in place in the company had led to reduced fraudulent activities over the past 5 years. It was also found that the number of perpetrators of fraudulent activities interdicted or laid off in the company had not increased significantly over the past five years. The inferential statistics demonstrated that the three forensic accounting services (litigation support services, forensic data analysis and fraud awareness) have substantial effect on fraud mitigation.

5.3. Conclusions

The study made several conclusions based on the findings on the effect of forensic accounting services on fraud mitigation in firms listed at the NSE. The conclusions are highlighted in line with the specific objectives.

5.3.1 Conclusions on Litigation Support Services and Fraud Mitigation

The study ascertained the effect of litigation support services on fraud mitigation in firms listed at the Nairobi Securities Exchange. It was concluded that litigation support services had helped in minimizing potentiality of criminal behaviors. It was further deduced that the companies had adopted forensic services to win fraud cases as they helped them consolidate evidence and translate complex financial information. In addition, it inferred that the litigation support professionals acting as expert witnesses in court had helped fraud mitigation. However, the study could not decide whether there had been considerable increase in the number of litigation support professionals that had served as expert witnesses in courts of law. Despite this, it was concluded that litigation support services did have substantial effect on fraud mitigation in firms listed at the NSE which were studied.

5.3.2 Conclusions on Forensic Data Analysis and Fraud Mitigation

The study determined the effect of forensic data analysis on fraud mitigation in firms listed at the Nairobi Securities Exchange. It was concluded that the use of forensic data analysis facilitated fraud mitigation in NSE listed companies by helping identify the people associated with fraud, ascertaining deviant transactions, and summarizing complex financial issues. It was also noted that forensic data analysis helped in mitigation by looking beyond audit trails and helping in the reconstruction of financial statements. It was further concluded that financial data analysis helped fraud mitigation by summarizing complex financial issues. The research findings further conclude that though the objective of forensic data analysis had a positive effect on fraud mitigation in firms listed at the NSE, it did not have a considerable impact as compared with the other two objectives of the current study since it was found to have the least effect.

5.3.3. Conclusions on Fraud Awareness and Fraud Mitigation

The study further established the effect of fraud awareness on fraud mitigation in firms listed at the NSE. The study concluded that the companies had instituted sufficient fraud awareness programmes such as induction programmes. It was decided that the employees were educated on the appropriate methods of handling the companies' financial data. It also deduced that number of employees' training on fraud in those companies had increased. It was also inferred that the mutual awareness programmes on demerits of fraud were not regularly conducted. The findings concluded that fraud awareness had a positive and significant effect on fraud mitigation in firms listed at the Nairobi Securities Exchange.

5.4 Recommendations

The Nairobi Securities Exchange operates under the jurisdiction of the Capital Markets Authority with an objective of endowing companies with instruments which enables them in raising capital for expansion. It is a securities exchange that is growing faster in the African Sub-Saharan economies as compared to other exchanges. Corporate fraud has become a major concern among the listed companies at the NSE. Because of the bad reputation caused by involvement of fraudulent activities, investors will shy from investing their money on such companies resulting in decrease in the firms' liquidity and making them unable to meet their obligations.

Firms listed at the NSE are significant participants in the securities sector and in the Kenyan economy as a whole. Research has shown that the probability of foreign direct investment points higher in countries that are free of corruption. Without frauds, firms listed at the NSE would benefit a lot since more investors would invest their resources there leading to increase in revenue as well as benefiting the Kenyan economy as a whole by enhancing the achievement of Vision 2030 which aimed at achieving an average gross domestic product (GDP) growth rate of ten percent per annum beginning 2012.

The findings from the current study are of great importance to the managers and shareholders of the listed firms who intent to reverse the seepages caused by frauds in their companies. Capital Markets Authority should also ensure that the firms listed at the NSE adopt forensic accounting services as part of the internal strategy in their organizations in order to mitigate fraud and eventually attract potential investors. This will in turn increase the firms' liquidity apart from building a good reputation.

The companies listed on the NSE should be aware that litigation support services do minimize the potential threat of criminal behaviors. The adoption of these strategies will help companies to win fraud cases because it assists them to consolidate evidence and translate complex financial information. Furthermore, it enables the litigation support professionals to act as witnesses, which can increase the success rate in prosecution. It is therefore recommended that it is imperative that investments in these services be considered since they do have significant effect on fraud mitigation.

Companies should invest in forensic data analysis as it was found to have an influence on fraud mitigation, though not substantial as compared with the other forensic accounting services. These services will allow companies to identify the employees involved in instances of fraud, track and map the trails left by such fraud cases and reconstruct the financial statements to establish impact of these crimes. Moreover, these companies will be able to summarize complex financial issues and present them to other stakeholder involved in crime mitigation in a way they can easily understand. This further helps to strengthen the fight against fraud in the foresaid companies.

There is need for NSE-listed companies seeking to use fraud awareness to educate employees on the appropriate methods of handling the companies' financial data. They should also institute sufficient fraud awareness programmes, which should be regularly

undertaken. It was deduced that there is a need for companies listed on the NSE to increase fraud awareness for fraud mitigation. This is because it has a substantial influence on fraud mitigation. Therefore, companies should invest substantially on fraud awareness as a way of fighting fraud.

Finally, the study recommends that listed firms should ensure that they have accountants with forensic accounting skills and analytical capacity in order to control and mitigate fraudulent activities.

5.5 Suggestions for Further Research

This study examined the effect of forensic accounting services on fraud mitigation in firms listed at the Nairobi securities exchange. The study however focused only on three forensic accounting services. The study suggests that future studies be carried out on other areas that researchers and scholars can explore on forensic accounting and fraud mitigation in Kenya. It further suggested that future studies focus on the effect of the aforesaid forensic accounting services on fraud mitigation in other firms such as SMEs. It also suggests that future studies assess the effects of these forensic accounting services on government institutions. Moreover, it suggests that the future studies focus specifically on establishing the effects of these forensic accounting services on fraud in a given sector within the Kenyan Economy such as banking or telecommunication.

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APPENDICES

APPENDIX I

FORENSIC ACCOUNTING SERVICES QUESTIONNAIRE

Date of data collection-----

Questionnaire serial number-----

Introduction

This questionnaire is aimed at seeking information exclusively for academic purposes and will be treated with utmost confidentiality. The respondents are hereby requested to give precise and honest information. Please fill in the required information in the space provided and place a tick (✓) where appropriate. You do not have to indicate your name.

Section 1: Respondents' Background Information

Please tick ONE appropriate box below

1.1	What is your gender? a). Male <input type="checkbox"/> b) Female <input type="checkbox"/>
1.2	Which is your highest academic qualification? a) Primary <input type="checkbox"/> b) Secondary <input type="checkbox"/> c) Diploma <input type="checkbox"/> d) Higher National Diploma <input type="checkbox"/> e) First Degree <input type="checkbox"/> f) Masters <input type="checkbox"/> g) Doctor of Philosophy (PhD) <input type="checkbox"/>
1.3	What is your age? a) 18-25 years <input type="checkbox"/> b) 26- 35years <input type="checkbox"/> c) 36-45 years <input type="checkbox"/> d) 46-55 years <input type="checkbox"/> e) More than 55 years <input type="checkbox"/>
1.4	For how long have you been working with this Company? a) 1 - 5 years <input type="checkbox"/> b) 6 – 10 years <input type="checkbox"/> c) 11 – 15 years <input type="checkbox"/> d) 16 – 20 years <input type="checkbox"/> e) Over 20 years <input type="checkbox"/>

Section 2: Litigation Support Services

By ticking an appropriate box below in the five point Likert scale where Strongly Disagree (SD) = 1, Disagree (D) = 2, Indifferent (I) = 3, Agree (A) = 4, and Strongly Agree (SA) = 5, please indicate the extent to which you agree with the following statements about Litigation Support Services

	Litigation Support Services	SD	D	I	A	SA
3.1	Litigation support services have helped your company prevent loss of revenue through fraud by minimizing the potentiality of criminal behavior					
3.2	Litigation support services have helped consolidate evidence which has enabled your company to win fraud cases.					
3.3	Litigation support services have helped in fraud mitigation in your company through translation of complex financial information					
3.4	The number of consultation services provided by litigation support professionals has increased significantly over the past 5 years.					
3.5	There has been a considerable increase in the number of occasions that litigation support professionals served as expert witness in court of law.					

Section 3: Forensic Data Analysis

By ticking an appropriate box below in the five point Likert scale where Strongly Disagree (SD) = 1, Disagree (D) = 2, Indifferent (I) = 3, Agree (A) = 4, and Strongly Agree (SA) = 5, please indicate the extent to which you agree with the following statements about Forensic analysis

	Forensic Data Analysis	SD	D	I	A	SA
2.1	The use of forensic data analysis facilitates fraud mitigation in your company because it enables determination of people associated with fraud hence assisting in fraud mitigation.					
2.2	Forensic data analysis assists in fraud mitigation in your company by helping to ascertain deviant transactions before they crystallize into fraud.					
2.3	Forensic data analysis summarizes complex financial issues thus resulting in reduced financial criminality in your company.					
2.4	The number of people determined to be associated with fraud has reduced considerably in your company over the past 5 years.					
2.5	The annual number of ascertained deviant transactions has					

	reduced significantly over the past 5 years.					
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Section 4: Fraud Awareness

By ticking an appropriate box below in the five point Likert scale where Strongly Disagree (SA) = 1, Disagree (D) = 2, Indifferent (I) = 3, Agree (A) = 4, and Strongly Agree (SA) = 5, please indicate the extent to which you agree with the following statements about Computer Forensics

	Fraud Awareness	SD	D	I	A	SA
4.1	The induction programmes for new employees are customized to create awareness on fraud issues and fraud mitigation.					
4.2	The number of annual employee trainings on fraud in your firm has increased consistently over the past 5 years.					
4.3	Employees are regularly (at least quarterly) trained on how to respond suspicious incidences relative to fraud in your company.					
4.4	Mutual awareness programmes on the demerits of fraud on the organization are regularly (at least quarterly) conducted in your company.					
4.5	Posters warning employees on consequences of fraud are issued regularly (monthly-bi-monthly) or placed on strategically positioned notice boards in your company					

Section 5: Fraud Mitigation

By ticking an appropriate box below in the five point Likert scale where Strongly Disagree (SA) = 1, Disagree (D) = 2, Indifferent (I) = 3, Agree (A) = 4, and Strongly Agree (SA) = 5, please indicate the extent to which you agree with the following statements about Fraud Mitigation

	Fraud Mitigation	SD	D	I	A	SA
5.1	A zero-tolerance policy towards fraudulent behavior has been set up in your company to make it more difficult for perpetrators to engage in fraudulent activities.					
5.2	Investigations are immediately commenced to any perceived fraudulent transactions that fraud as mitigated as					

	fast as possible.					
5.3	New employees are recruited only after their past working history is devoid of fraudulent implications, allegations or convictions.					
5.4	Control procedures put in place in your company have led to reduced fraudulent activities over the past 5 years.					
5.5	The number of perpetrators of fraudulent activities interdicted or laid off in your company has increased significantly over the past 5 years.					

APPENDIX II

FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE

According to the NSE handbook 2019, there are 61 companies listed at the Nairobi Securities Exchange as shown below.

Agricultural: Eaagads Ltd., Kapchorua Tea Co. Ltd., Kakuzi, Limuru Tea Co. Ltd., Rea Vipingo Plantations Ltd., Sasini Ltd and Williamson Tea Kenya Ltd.

Automobiles and Accessories: Car & General (K) Ltd.

Banking: BK Group Plc., Barclays Ltd., CFC Stanbic Holdings Plc., I & M Holdings Ltd, Diamond Trust Bank of Kenya Ltd., KCB Group Ltd., National Bank of Kenya Ltd., NIC Group plc., Standard Chartered Bank Ltd., Equity Group Holdings Ltd., HF Group Ltd. and Co-operative Bank Ltd.

Commercial & Services: Express Ltd., Kenya Airways Ltd., Nation Media Group, Sameer Africa Plc., Standard Group Ltd., TPS Eastern Africa (Serena) Ltd., Scan Group Ltd., Uchumi Supermarkets Ltd., Longhorn Publishers Ltd

Construction and Allied: Athi River Mining, Bamburi Cement Ltd., Crown Berger Ltd., E. A. Cables Ltd and E.A. Portland Cement Ltd.

Energy & Petroleum: Kenol Kobil Ltd., Total Kenya Ltd., KenGen Ltd., Kenya Power & Lighting Co. Ltd. and Umeme Ltd.

Insurance: Jubilee Holdings Ltd., Kenya Re-Insurance Corporation Ltd., Liberty Kenya Holdings, Britam Holdings Ltd., Sanlam Kenya Plc. and CIC Insurance Group Ltd

Investment: Olympia Capital Holdings Ltd., Centum Investment Co. Ltd., Trans- Century Ltd., Home Afrika Ltd., Kurwitu Ventures

Investment Services: Nairobi Securities Exchange Ltd.

Manufacturing & Allied: B.O.C Kenya Ltd., British American Tobacco Kenya Ltd., Carbacid Investments Ltd., East Africa Breweries Ltd., Mumias Sugar Co. Ltd., Unga Group Ltd., Eveready East Africa Ltd., Kenya Orchards Ltd. and Flame Tree Group Holdings Ltd.

Telecommunication & technology: Safaricom Plc

Real Estate Investment Trust: Stanlib Fahari – REIT

Exchange Traded Fund: New Gold Issuer (RP) Ltd.

APPENDIX III

COVER LETTER

TO WHOM IT MAY CONCERN

Dear sir/madam

My name is Florence Kirui, a Master student at KCA University. I am undertaking a research thesis on Effect of Forensic Accounting Services on Fraud Mitigation in Firms Listed at the Nairobi Securities Exchange in Kenya. To this end I kindly request that you complete the following short questionnaire regarding the status of your company. Your response is of the utmost importance to me.

Please do not enter your name or contact details on the questionnaire. It remains anonymous.

The completed questionnaire shall be physically collected from your office.

Thank you

Yours sincerely

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Kirui Florence Chepngeno

APPENDIX IV

INTRODUCTION LETTER



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

Tel: +254 20 3537842
Fax: +254 20 8561077
Mobile: +254 734 888022, 710 888022
Email: kca@kca.ac.ke
Website: www.kca.ac.ke

KCAU/SGS/MSc/August, 19/18

August 7, 2019

To whom it may concern,

Dear Sir/Madam,

RE: FLORENCE CHEPNGENO KIRUI REG NO 17/04709

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

Florence is conducting a research on a topic titled: "*Effect of Forensic Accounting Services on Fraud Mitigation on Firms Listed at the Nairobi Securities Exchange*" which is part of the requirements of the program she is pursuing. The research as well as the data procured thereof shall be used for academic purposes only.

Any assistance accorded to her is highly appreciated.

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

Yours faithfully,

Dr. Nyaribo Misuko
Dean, School of Graduate Studies & Research