EFFECT OF AUDIT COMMITTEE CHARACTERISTICS ON FRAUD DETECTION IN STATE MINISTRIES IN KENYA

BY

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MASTER OF SCIENCE (FINANCE AND ECONOMICS)

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or presented 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.

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

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

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Dr.Edward Owino

Dissertation supervisor

ABSTRACT

This study sought to determine the effect of audit committee characteristics on fraud reduction in state ministries in Kenya. The study used a descriptive research design. The population for the study was the 20 government ministries. The study used secondary sources of data because it saved a lot of time as compared to conducting interviews and also enabled the study to collect objective data. The study covered a period of three years which was sufficient for establishing the relationship between audit committee characteristics and number of fraud incidences. Panel data was obtained from treasury, transparency international and the ministries whereby data on the specific variables under investigation was extracted from annual reports, financial statements and records.A document analysis guide was prepared to guide the researcher in collection of data on audit committee characteristics and number of fraud incidences in all the 20 state ministries in Kenya. Data was analysed using Stata data analysis and statistical software. Descriptive statistics used entailed mean analysis, minimum, maximum and standard deviation. To test the research hypothesis on the effect of audit committee characteristics on fraud reduction, the study adopted fixed effects panel data model. Results from the study indicate that number of audit committee meetings ($\beta = -0.4385$; $p < 0.05$) and expertise of the audit committees ($\beta = -0.4593$; $p < 0.05$) had negative and significant effect on the incidences of fraud in the state ministries. The study also established that tenure of the audit committees had a significant positive effect on incidences of fraud in the state ministries in Kenya ($\beta = 0.3601$; $p < 0.05$). Size of the audit committee ($\beta = 1.5284$; $P > 0.05$) and independence of audit committees ($\beta = -0.1546$; $p > 0.05$) did not have a significant effect on fraud incidences in the ministries. Following the findings from the study, the following recommendations were made. First, ministries in Kenya should ensure that they have audit committee members who have expertise in finance, accounting auditing. Secondly, the ministries should adhere to the statutory provision which indicate that audit committees should have at least four meetings in a year. Lastly the study recommends to the ministries to ensure that tenure of audit committee members is shortened. Having longer tenure is expected to erode independence and objectivity of the members and hence jeopardize their ability to deal with their monitoring role.

Key words: Audit Committee, Tenure, Independence, Audit Team size, Expertise.

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DEDICATION

This project is dedicated to my family for their love, support, and encouragement when I was writing this project.

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ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey-Fuller Test
AICPA	American Institute of Certified Public Accountants
ASE	Amman Stock Exchange
BRC	Blue Ribbon Committee
CEO	Chief Executive Officer
ECM	Error Correction Method
GAO	General Accounting Office
SEC	Securities and Exchange Commission

OPERATIONAL DEFINITION OF TERMS

Audit Committee – A committee in each of the 20 Kenyan ministries, formed from the board of directors and charged with the oversight of financial disclosure and reporting (Abbott & Parker, 2000).

Audit Team size – the number of directors that form the internal audit committee of the ministry (Abbott & Parker, 2000).

Bureaucracy – System of government in which most of the important decisions are made by state officials rather than by elected representatives(Agrawal&Chadha, 2005).

Expertise - Knowledge regarding the business that the ministry is in and also technical knowledge of accounting and auditing (Ali, 2010).

Fraud – criminal or wrongful deception in the Kenyan ministries that is intended to result in financial or personal gain to the perpetrator and loss of public resources for the ministry (Agrawal&Chadha, 2005).

Independence – Impartiality of the internal auditor regarding parties that might have a financial concern in the ministry being audited (Barua, Rama, & Sharma, 2010).

State ministries - Government departments of the national government in Kenya headed by a Cabinet Secretary (The Presidency, 2016).

Tenure – the number if years that a member of the audit committee serves in the audit committee (Cascarino& Van Esch, 2005).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Treasury Circular 16/2005 provides thatthe role of audit committees is to review compliance with laws and regulations, review laws and regulations, set agenda for meetings, evaluate evaluation compliance of policies and procedures by the ministries and enhance communication with the external auditors. Abbott and Parker (2000) posit that audit committees are embedded in the public finance management Act, 2012. Both the national and the county governments are required to set up an audit committee whose composition will be prescribed through regulations. The primary mandate of the audit committees is to enhance, integrity, independence and effectiveness of audit functions.

An audit committee is a selected number of members of a company's board of directors whose responsibilities include helping auditors remain independent of management. Most audit committees are made up of three to five or sometimes as many as seven directors who are not a part of company management (Raghunandan and Rama, 2007).The audit committee plays a critical role in providing oversight and serving as a check and balance on a company's financial reporting system. The committee provides independent review and oversight of a company's financial reporting processes, internal controls and independent auditors.

It provides a forum separate from management in which auditors and other interested parties can candidly discuss concerns. By effectively carrying out its functions and responsibilities, the audit committee helps to ensure that management properly develops and adheres to a sound system of internal controls, that procedures are in place to objectively assess management's practices and internal controls, and that the outside auditors, through their own review, objectively assess the company's financial reporting practices. This definition is consistent with agency theory which provides that agency theory which provides that to ensure that effectiveness of audit committee; managers are encouraged to prepare financial statements adequately to specify the return generated by the companies (Pincus, 2001).

Beasley (1996) and Felo (2003) conducted a study on the effectiveness of audit committees on risk reduction among commercial banks in Europe. The findings showed that there was a positive relationship between audit committees and fraud reduction.This was because the audit committee has the responsibility of reviewing the company's internal financial controls. Unless expressly addressed by a separate board risk, the committee should comprise of independent directors or by the board itself, firm's internal control and risk management systems. The management of the company is responsible for the identification, assessment, and monitoring of risk, for developing, operating and monitoring the system of internal control (Chang & Singh, 2000).This is essential for providing assurance to the board. Except in cases where the board or the risk committee is responsible to make a review of the effectiveness of the internal control and risk management systems. The audit committee should receive reports from the management on the effectiveness of the systems that have established and the conclusion of tests conducted by the internal and the external auditors.

An audit committee is an operating committee in the board of directors which is responsible for supervising and monitoring activities in a firm. The role of the audit committee is to appoint external auditors. They meet frequently with managers and external auditors to examine the financial statements and communicate with internal and external auditors during the audit process and internal control. Locally and globally audit committees have been used a tool to mitigate fraud through monitoring the process of financial reporting and corporate governance. Raghunandan et al. (2004) puts forth that the audit committee independence is positively related to the risk of fraud minimization as well as the reliability and correctness of the financial statements.Several studies have investigated the relationship between audit committees and fraud reduction. Chang and Li (2008) investigated on the relationship between audit committees and fraud reduction. It was concluded that firms whose audit committees were effective in their work were able to minimize their levels of risk reduction.

Walker (2004) emphasizes that audit committee independence facilitates effective supervision on management activities, because the independent members of the audit committees are more likely to make objective decisions and need less negotiation as well as less deliberation. The independence characteristics are essential for the audit committee to fulfil its supervising responsibility. This study is important since it seeks to investigatefraud and the potential risks areas that may expose the firm to fraud. This will assist in countering fraud and preventing it. Thus, this study is geared towards establishing essential characteristics of the audit committees that make it effective in reducing incidences of fraud.

Audit committee is a chosen number of individuals of an organization’s board of directors who are responsible for helping auditors to remain independent of management. The audit committee performs a fundamental role in ensuring check and balance of the firm’s financial reporting system. The committees present an independent assessment and supervision of the firm’s financial reporting process, independent auditors and internal controls systems. It provides a separate forum from the management whereby auditors and interested parties can discuss pertinent matters.

1.1.1 Audit Committee Characteristics

There are various characteristics exhibited by the audit committee which is critical in ensuring its effectiveness. Raghunandan and Dasaratha (2004) note that the audit committee consists of both independent and non-executive directors. To improve effectiveness in their roles, non-executive directors should be independent. They should be nonpartisan, philanthropic or show any interest in the implementation of their functions. This might interfere with their independence and impact negatively on their effectiveness. To improve the independence of the audit committee, there should be timely access to relevant information to allow further discussion before decisions are taken. The committee should ensure adequate communication either formally or informally with non-executive directors.

The independent and non-executive directors must be informed about the risks that face organizations and appropriate action upon the review of the board's effectiveness of internal control system. This includes regular reviews and annual assessment exercise. The other trait of audit committee is frequency of audit committee meetings which involves the number of times that the committee meets per year. The category of directors is unlikely to be sanctioned for fraud since they easily detect fraud and stop it at early stages. Their role is to eliminate any form of fraud and thus enhance the efficacy of audit committee. The frequency of audit committee meetings improves quality and effectiveness of audit committee (Raghunandan, Read& Rama, 2001).

Rezaee, OlibeandMinmier (2003) maintain that size is an important characteristic of the audit committees. It varies depending on the needs and the extent of delegation of responsibilities to the committee. The key objective is allowing the committee to perform efficiently, ensure participation of all the members. Most firms formulate policies to rotate members depending on the member's experience and knowledge. The board of directors should evaluate the performance of the audit committees to ensure that they meet the expectations of the board and that of the committee. Rotation of the members of audit committee provides an opportunity to restore and introduce new insights to audit the processes of the committee. This also enables the board members to have a clear understanding of the roles of the audit committee.

Robert (2006) argues that the audit committee expertise is an essential trait of the audit committee. An effective audit committee consists of experts with a high level of professionalism in their work. The nature of work of the audit committee is complicated and thus requires the board to have a regard to the candidates to ensure that they possess specialized skills. They should be competent and experienced in business, an in-depth understanding of internal control systems, conversant with compliance systems, independent of thought and willingness to learn. Tenure of the audit committee is a trait that defines the image and trust held by firms about the audit committee. An active audit committee maintains and upholds integrity in its functions. The audit committee should cultivate a culture of transparency and honesty through open discussions between the top management and the auditors. They should execute business with objectivity and professionalism with high regards for ethical consideration (Robert, 2002).

1.1.2 Fraud Reduction

Various scholars have defined fraud reduction. Holtfreter (2004) defined fraud reduction as actions that are taken to curb or discourage exposure to fraud. Fraud reduction is the primary mechanism for preventing fraud controls. Saleh, Iskandar and Rahmat (2007) define fraud reduction as mechanisms put in place to minimize exposure to fraud. Carcello, Hermanson andRaghunandan(2005) explain that fraud prevention is hindering a person from an activity; it is intended to protect the business and its processes against fraud. Fraud reduction consists of major steps that are taken to prevent and minimize fraud. This involves setting-up prevention controls and designing detection controls to sense fraud. Fraud prevention involves taking an active role in the prevention of fraud and effective compliance of ethics. The committee should evaluate the management regularly and the auditors to ensure that the firm has antifraud programs to detect potential fraud and ensure thorough investigations when fraud is detected. The committee should ensure that appropriate steps are taken against the culprits of fraud (Robert, 2006).

The principal responsibility for establishing control over fraud and maintaining it lies with the management. Internal control is a process that is designed by the management to give reasonable assurance concerning the realization of reliable financial reporting, compliance with set laws and regulations and efficiency and effectiveness of operations (Raghunandan& Rama, 2007).The internal auditor is charged with the responsibility of preventing fraud through examining and evaluating the level of adequacy and effectiveness of the internal control system. This is done in line with potential exposure to risks other areas of the firm's operations. Internal auditors have an obligation to determine whether the environment in which the organization operates promotes awareness and control. The company should set realistic organizational goals and objectives with formal policies that guide the manner in which the firm work, mechanisms for monitoring activities and safeguarding assets, active communication channels with adequate and reliable information and cost-effective controls to help in deterrence of fraud.

Fraud prevention is based on the premise that the effectiveness of audit committee oversight is an integral component of reducing the risk of fraud in a firm and ensuring that the likelihood of fraud is prevented at an early stage. To realize this goal, audit committee ensures that they understand significant fraud risks that the firm is facing by conducting fraud risk assessment and developing alternative sources of information about the status of the organization with regard to fraud risks (Rezaee et al., 2003).

1.1.3 Ministries in Kenya

The ministries are part of the cabinet which is comprised of the president, deputy president, cabinet secretaries and the attorney general. The ministries run the Government of Kenya.

According to the constitution, there should be a minimum of 14 ministries and a maximum of 22. The heads of these ministries are referred to as Cabinet Secretaries, who are appointed by the president. The president has powers to assign and discharge a cabinet secretary. A cabinet secretary cannot qualify to be a Member of Parliament; their deputies are called Principal Secretaries. Civil servants for example teachers in public schools and diplomats are classified in one of the ministries in the Cabinet. Currently we have twenty (20)ministries that are headed by cabinet secretaries (Public Sector Review Committee, 2010).

A government ministry is an organization that is charged with the responsibility for government administration. It is headed by a cabinet secretary who has the authority over one or more departments. The ministries are under the cabinet and hence coordinate government functions and activities (Republic of Kenya, 2012).Cabinet secretaries are charged with the responsibility of formulating the policy and government conduct; they are individually responsible for the administration of their department. Their functions are to advise the president on the central matters of public policy and specific issues about their respective ministries. The cabinet secretaries discuss policy issues that affect the management of the government. The cabinet secretaries are in charge of the ministries; they give direction and control for which they are individually responsible to the National Assembly. The cabinet secretary being the head of the ministry is accountable to parliament for his department irregularities, and his resignation is independent of the entire cabinet (Public Sector, 2010).

In Kenya, state ministries need to be effective in the operation of their roles in ensuring that they maintain sound financial statements that are accurate and reliable. To successfully implement their functions, audit committees should constitute the independent non-executive directors in the board, the tenancy of directors and financial expertise for the audit committee to evaluate the effectiveness if audit committees in Kenya (Waweru, Kamau, &Uliana, 2008). The Kenya government conducts regular audits in all the state ministries through audit committees to ensure that fraud is minimized. This achieved through effective monitoring and supervision of the internal control systems.

In the last two decades, the country has undertaken reforms to enhance the effectivenessof the Audit Function. The National Treasury circular AG/3/080/6/(61) of 8th August 2000represented the first initiative towards establishment of Ministerial Audit Committees.However, the performance of Audit Committees in such ministries was not effective due tolack of independence and objectivity. In order to address the issues of oversight, governance,transparency and accountability in management of public resources, the governmentissued the Treasury No. 16/2005 and No. 18/2005 dated 4th October 2005 and 12th October2005 respectively (ICPAK, 2015). In the quest for stronger accountability environment, Kenya continues to develop strong accounting and auditing systems for ministries. The government adopted International Public Sector Accounting Standards (IPSASs) in 2014. The Country restructured the public sector and adopted performance contracting, instituted vetting of State Officers, established Independent Commissions and Offices and other reforms that continue to strengthen corporate governance (ICPAK, 2015).

1.2 Statement of the Problem

State ministries are expected to provide services to the people by carrying out their roles effectively with accountability and openness (Republic of Kenya, 2012). Audit committees are constituted in the ministries to ensure that the ministries run their operations effectively providing value for money. Despite the presence of Audit Committee Fraud remains a major problem in state ministries. There have been notable fraud cases in the ministry of devolution, ministry of health, ministry of interior and coordination of national government among others where hundred of millions of shillings have been lost to procurement related fraud (Ombati, 2016).

Studies in the developing countries by Mangena and Chamisa (2008) assessed the link between audit committee effectiveness in the public sector in Botswana. The size of the audit committee and experience were found to be the critical components in audit committee effectiveness.

Musa (2006) investigated the effectiveness of audit committee in the public sector in Tanzania. The findings revealed that the size of the audit committee and the expertise were essential drivers of audit committee effectiveness. These studies limited themselves on the traits of audit committee and ignore fraud reduction which is the underlying objective of audit committee effectiveness. Ali (2010) did an assessment of the relationship between audit committees characteristics and performance of listed firms at Dar es Salaam Stock Exchange in Tanzania. The results found that audit committee experience and their independence were important traits in enhancing the performance of the audit committees. This study limited itself to listed firms at Dar es Salaam Stock Exchange while the current study focuses on the public sector.

In the local setting, a few studies have explored on the effectiveness of audit committees. A study by Waweru et al. (2008) evaluated the factors influencing the performance of audit committees in state ministries in Kenya. The study found that audit committee independence and expertise were important factors in influencing the performance of the audit committees. This study limited itself to factors that affect the performance of audit committees and ignored the effectiveness of audit committee in fraud reduction. Wakaba (2014) found that audit committee experience, committee gender diversity, the size of audit committee and some independent auditors have a significant effect on firm performance. This study laid more concentration on the audit committee characteristics and ignored fraud reduction aspect which the current study considers being an important factor. Ogoro and Simiyu(2015) assessed effectiveness of audit committees in parastatals in Kenya.

The study established that audit committee tenure and multiple directorships were the significant characteristics in reducing financial statement restatements. This study focussed on parastatals which are just entities inside the ministries which the current study seeks to target. This study sought to bridge this gap by investigating the effect of audit committees' characteristics on fraud reduction in state ministries in Kenya.

1.3 Objectives of the Study

To determine the effect of audit committee characteristics on number of fraud reduction in state ministries in Kenya.

1.3.1 Specific Objectives of the Study

i. To establish the effect of number of audit committee meetings on number of fraud incidences in State Ministries in Kenya.
ii. To examine the effect of independence of audit committee on number of fraud incidences in State Ministries in Kenya.
iii. To establish the influence offinancial expertise of audit committee on fraud incidences in State Ministries in Kenya.
iv. To determine the effect of tenure of audit committeeon number of fraud incidences in State Ministries in Kenya.
v. To establish the effect of size of audit committee on number of fraud incidences in State Ministries in Kenya.
vi. To assess the moderating role of budgetary allocation to ministries in the relationship between audit characteristics and fraud incidences in ministries in Kenya.

1.4 Research Hypothesis

H_{01}: Number of audit committee meetings has no significant effect on the number of fraud incidences in state ministries in Kenya

H_{02}: The independence of audit committee has no significant influence on the number of fraud incidences in state ministries in Kenya

H_{03}: The expertise of audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya

H_{04}: The tenure of audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya

H_{05}: The size of the audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya

H_{06}: Budgetary allocation to ministries have no significant moderating role in the relationship between audit characteristics and fraud incidences in state ministries in Kenya.

1.5Justification of the Study

Audit has consequently been viewed as an integral part in enhancing accountability andgeneral performance of the public sector. Audit has evolved in many countriesto take a more comprehensive view of government operations. In Kenya, key reforms havebeen undertaken to modernize the Audit and more specifically, the Internal Audit functionensure that control mechanisms go beyond legal and regulatory compliance. This study acts as an eye opener on the attributes of the audit committees in the Kenyan ministries and ways of ensuring that they are effective in their work.The findings will be of help to ministries, public sector practitioners, policy makers, other private as well as public entities and scholars.

First, the leadership of the ministries will be able to establish the factors and characteristics of the audit committees that influence their performance and hence will be able to formulate audit committees while considering such factors. Moreover, leadership will ensure that factors that determine effectiveness of audit committees are factored in in legislation and policy. The findings will hence inform their advocacy for such factors. that further, the leadership of the ministries might use the findings of this study to determine the amount of resources to commit to ensure existence of an effective audit committee.

Secondly, the study will be of value to policy makers as it highlights the factors that have a significant influence on effectiveness of audit committees in detecting fraud. The policy makers and regulators might find this piece of work useful. They may use the findings of this study to set policies and regulations that ensure that all public institutions effectively use audit committees to mitigate fraud. This will lead to improved performance and service delivery to the public.

Other entities whether public or private may apply the findings of the study to ensure that their internal audit committees are constituted while considering the factors that are determined in the study to be critical in determining effectiveness in fraud detection. Other firms will learn the importance of audit committees especially in providing meaningful and focused updates to the board of directors. This is because each committee meeting encourages open communication among the management, the auditors and the audit committee.

Researchers and academicians will benefit from the findings of this study. The study provides more knowledge on the role of audit committees, their characteristics and effectiveness in fraud reduction. This study may also be used as a basis for further research by researchers interested in field of study or related disciplines.

1.6 Scope of the Study

The study included a population of 20 state ministries for a period of three years making a total of 60 observations.Three years were selected since it was when state ministries were fixed at a maximum of 20 and most of the current ministries came into being from 2013. Secondary sources of data from audited financial statements and records of state ministries were used. The studyusedpanel data forthree years (2013-2015), measurement of the study variables was extracted within this period to ensure adequate representation. Panel data was suitable for this study to ensure that omitted or unobserved variables that were correlated with explanatory variables were considered (Hsiao, 2003).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section covers the theoretical and empirical information from literature on topics related to the research. It reviews what scholars and authors have written in relation to audit committees and fraud minimization. This includes both global and local perspectives.

2.2 Theoretical Literature

This section provides a theoretical foundation that supports this study. These theories include agency theory and institutional theory.

2.2.1 Agency Theory

This theory was propagated by Meckling and Jensen in 1952. Meckling and Jensen (1976) in their paper on the theory of the firm defined the agency relationship as a contract under which one or more persons that is the principal engage the other person who is the agent to perform some service on their behalf which involves delegating some decision-making authority to the agent.

The separation of ownership and control in modern business leads to conflicts of interest between managers and stakeholders. As a result of conflict between the principal and the agent, firms result to use of control techniques to mitigate agency costs and information asymmetry for example audit committees to counter fraud and improve performance of the firm. Pincuset al. (1989) argues that audit committees are implemented in cases where agency costs are very high in order to enhance the quality of information flows from the agent to the principal. With regard to the agency theory, in a bid to boost the effectiveness of the audit committee, managers of the firm are stimulated to prepare financial statement regularly to determine the amount of return generated by the firm. This is coherent with the findings of Felo et al. (2003) whom in his study concluded that there is a positive relationship between the presence of audit committee and the quality of financial statements.

In another study conducted by Mc Mullen (1996) it was established that there exists a positive relationship between the existence of an audit committee and the reliability of the financial statement. Agency theory states that the presence of an audit committee in the board of directors is adequate to confirm the accuracy and reliability of the financial statements. This statement contradicts with the findings of Beasley (1996) who indicated that the presence of audit committee does not necessarily mean that the committee is effective in carrying out its role and that the financial statements are reliable and accurate.

In line with this study, the public sector should allocate sufficient funds to support the work of the audit committee in ensuring that they produce quality and reliable financial statements that are reliable and accurate. Felo and Krishnamurthy (2003) argue that the management should do their best to ensure that their decisions and actions will lead to maximization of the shareholders wealth. They should demonstrate competence and professionalism in their work to enhance their integrity and trust from the stakeholders; they should avoid manipulating the financial statements to create a false impression that the firm is performing well. Similarly, the shareholders should increase the agency costs by monitoring and close supervision of the actions of the management to guarantee compliance and transparency. Klein (2002), to make sure that audit committee is active in its work, the top management, and the shareholders should work together as a team to ensure that the audit committee is effective in their work, this enables the firm to produce accurate and reliable financial statements which will significantly contribute to reduced cases of fraud.

2.2.2 Institutional Theory

According to North (1991) institutional theory asserts that the institutional environment can strongly influence the development of formal structures in an organization, often more profoundly than market pressures. This theory provides that those organizations that embrace change are easy to cope with the dynamics of the external environment. This theory supports the importance of audit committee for purposes of oversight of a company's reporting processes, internal controls and independent auditors. This is because the business environment of audit is characterized by risks and uncertainties and firms have to cope with these dynamics to survive in the business environment.

Audit committee is one of the essential tools that firms adopt to cope with the dynamics in the external environment. According to institutional theory, an organization consists of cultural, social and technological settings that constitute its broader institutional environment (DiMaggio et al., 1983). The adoption and operation of audit committees highly depends on the extent to which they influence and can be influenced by a multiplicity of agents (Zaman, 2002). Going by the findings of Zaman (2002) for the audit committee to function efficiently, it has to be independent and exhibit competence and professionalism in their work.

The members of the audit committee should exhibit the traits of professionalism to effectively execute their work. Klein (2002) and Bryan et al. (2004) have emphasized on the importance of key traits related to the members that form the audit committee. These traits are namely: integrity and professionalism. These traits are important form the audit committee to perform its function of monitoring and control. Spira (2003) argues that the audit committee aims to defend the interest of its investors and reduce agency problems of companies characterized by information asymmetry.

In accordance to this study, the audit committee must exercise professional care by performing their work diligently and observing integrity in the financial statements. This is because the stakeholders' such as investors use information from the financial statements to make investment decisions. By the American Institute of Certified Public Accountants (AICPA), the firm has an obligation to prevent fraud and ensure that financial statement complies and abide by the set rules and regulations. The audit committee should conform to the cultural norms and values of the firm to create an enabling environment for them to work primarily in minimization of fraud. These arguments are consistent with institutional theory; Goodstein (1994) who did put more emphasis on the need for the firm to comply and abide by the societal norms and beliefs which are then incorporated into the organization's strategic goals and objectives. This makes it easier for an organization to conduct business without violating the set rules and regulations and thus save the firm costs of violating institutional norms. To boost their effectiveness, the audit committee should work together with the management of the business to present credible and reliable financial statements.

2.3 Empirical Review

There are certain factors that affect the effectiveness of audit committees in an organization. These factors include: frequency of audit, independence of audit, expertise and the role of audit committees.

2.3.1 Frequency of Audit Committee and Fraud Reduction

Abbott et al. (2000) show that firms with audit committee which are composed of independent directors and which meet at least twice per year are less likely to be sanctioned for fraudulent or misleading reporting. This is because they are able to detect fraud and prevent it in its earliest stages. This highly enhances the chances of fraud reduction and thus boosts the effectiveness of audit committees.

Byrd and Hickman (1992) found that, an active audit committee may contribute to audit committee effectiveness. This is in line with Carcello and Hermanson (2002) who argued that audit committee is essential in overseeing financial reporting. A study carried out by Song and Windram (2004) established that only 10% of audit committees that met 4 times in a year. This is not effective enough as the firm could miss the important issues that need to be discussed together. Cadbury (1995) posit that extra meetings may provide an opportunity for the firm and the external auditors to monitor the risk progress of the firm. This meeting is also important for monitoring the financial reporting and internal controls.

Steward and Munro (2007) indicate that the audit committee existence, the frequency of audit meetings and the auditors' attendance at these meetings are significantly associated with a reduction in the perceived level of audit risk. Carcello and Neal (2000) put forth that audit committees are more updated about the state of financial statement and thus can easily detect fraud before it thrives in the firm. The advantage of meeting regularly by the audit committee enables the firm to monitor and take into account the risk status of the firm which acts as a signal for immediate action by the management.

The frequency of audit committee can be defined by the diligence of audit committee members. The presence of an audit committee is not a guarantee of the effectiveness of the committee. More attention is based on the frequency of their meetings and how effective they deliberate on their decisions (Song &Windram, 2004). Literature puts more emphasis on the frequency of meeting by the audit committee, in accordance to Beasley et al. (2000) the audit committees that meet less frequently are more likely to be exposed to fraud as compared to audit committee that meets regularly. When the committee often meets it is easier and quickly to detect fraud at an early stage compared to prolonged delays for meetings. Regular meetings give the audit committee adequate time for review and monitoring of the progress to ensure that the financial statements are accurate and reliable, and the internal control system is stable and efficient (Steward & Munro, 2007).

Audit committee that meets many times is more knowledge about all the current issues of audit and are more effective, and hence, they are more likely to support the auditor and in raising important matters that will ensure the quality of financial statements and a strong internal control system. The frequency of the audit committees gives room for review and appropriate action when irregularities are detected. It gives the committee time for sufficient discussion and resolve. This improves the effectiveness of audit committee through reduction of fraud and its prevention.

The frequency of audit committee meetings and the attendance of the auditor contribute to the reduction of audit risks. The external auditor believes the availability of an audit committee is critical in minimization of substantial audit risks. Reduction of such risks is highly determined by the frequency of meetings of the audit committee and the attendance of such meetings. According to Carcello and Neal (2000) firms that have the least number of reported cases of fraud have an audit committee that meets habitually. Fraud cases can be detected and prevented earlier; this reduces the chances of fraud and its implications. This is also consistent with a study by Zaman (2002) who emphasized that frequency of audit committee had a positive correlation with fraud reduction.

2.3.2 Independence of Audit Committee and Fraud Reduction

Independence of directors enables the firm to achieve fair and objective functioning of the audit committees. Blue Ribbon Committee (BRC) (1999) recommended all the major U.S. stock exchanges in 1999 to embolden participating firms to constitute audit committees solelycomprised of independent directors. However, according to BRC the discretionary power to appoint inside director's lies with the company upon meeting certain criteria.

Effective audit committees improve corporate governance which acts as a mechanism to mitigate unwanted interventions, improve oversight and monitoring of executives. According to Birla (2000) independent-outside director who has no fiscal consideration with the firm is less likely to be influenced by the management. Thedirector independence increases audit committee effectiveness. In United States (US), Beasley (1996) and Vicknair et al. (1993) shows that audit committee existence and independent director reduce financial fraud. Board with high level of independence is effective in supervising or managing the financial reporting matters.

In increasing the level of independence, a firm can opt to hire independent outside directors that non-executive directors. This is because they lack interest in the firmand thus are not related to the companies' daily operation rather than decision making. Most firms are willing to pay high fees to independent audit committees to ensure that it is effective in controlling the firm's financial statements.

Klein (2000) examines another interesting question if there is any degree of substitutability between the audit committee independence and the alternative corporate governance mechanism. There is a negative relationship observed between audit committee independence and alternative corporate governance mechanisms, which implies that alternative corporate governance mechanisms should mitigate the need for the firm to have an active, independent audit committee.

A study by Birla (2000) indicates that the independence of the audit committee assists the external auditor to maintain their fiduciary duties without any influence from the directors. An investigation by Vicknair et al. (1993) found a positive association between the audit committee independence and the quality of financial reporting. The independence of directors in the committee improves performance of the firm since they can execute their duties without fear or favor. Abbott et al. (2000) found that corporations with audit committees that are comprised of independent directors who meet at least twice annually are less likely to be questioned for fraudulent or misleading reports. The independence of audit committee has an effect on the company's earnings, management and investors' perception.

Klein (2002) argues that audit committee independence might be affected by a significant increase in abnormal accruals. Raghunandan and Rama (2004) maintain that effective audit committees might have an effect on shareholder perception related to the auditor especially in those cases where shareholders perceive increased threat towards the independence of the auditor. According to SEC (2002), matters pertaining the independence of the audit committee are no longer considered critical since the new stock exchange rules requires that all the members of the audit committee be independent. According to Abbott et al. (2000) firms whose audit committee is independent have the least reported cases of fraudulent financial statement and more likely to be involved in lower earnings management and earnings restatement (Agrawal&Chadha, 2005).

The audit committee independence is expected to give unbiased assessment and judgment to effectively monitor the management. In Jordan,Hamdan and Mushtaha (2011) investigated the association between the traits of the audit committee of the industrial Jordanian firms listed on Amman Stock Exchange (ASE)and the possibility of the firm getting a clean audit report. The findings for this study revealed that the independence of audit committee did not have any impact on the opinion of the external auditors. Further, the results recommend that the independent committee members may propose for a more exhaustive audit scope for the review of the audit program so as to preserve reputational capital and to avoid cases of financial misstatement (Abbott et al., 2003).

2.3.3 Expertise of Committee Members and Fraud Reduction

The BRC (1999) suggested that all the major United States (US) stock exchanges to implement the requirement that their member firms must have an audit committee that is financially literate. Securities and Exchange Commission (SEC) underscored that financial expertise on audit committees would improve effectiveness of the audit committee in executing its financial oversight responsibilities (SEC, 1999).

It is important for companies to have at least one certified auditor (financial expertise) in the audit committee in order to monitor the financial report either it is compliance with law and regulation or not. Besides, the executive or non-executive director in the audit committee also needs to have thorough understanding regarding the financial field to enhance the effectiveness of audit committee (SEC, 2002).

With reference to Klein (2002), it is important to consider having at least one person in the audit committee who has specific expertise in the field of accounting and finance. This enhances efficiency and effectiveness of the audit committees in terms of decision making. Krishnan (2005) puts more emphasis on the significance of accounting and finance knowledge and expertise of audit committee members in enhancing efficiency.

The audit committee should be knowledgeable in finance and account with a relevant experience to ensure that the financial reporting systems are accurate and reliable for making financial and investment decisions. Vafeas (2003) pointed out that the breakdown of Enron and WorldCom was as a result of lack of knowledge and experience by the members of the board. Thus, the board members lacked an understanding of complex financial structures and their interpretations.

In the cases of WorldCom situation, the members of the board did not have an understanding of the accounting principles. They did not distinguish the expenditure being capitalized rather than expensed. To perform specific responsibilities and duties, the audit committee should contain a different top management with different skills and knowledge to perform their duties optimally Cascarinoand Van Esch (2005) insists on the importance of having knowledgeable non-executive directors with the required business acumen and accounting background with the willingness to serve on audit committees. Krishnan and Lee (2009) indicate that a competent team of audit committee can effectively be able to criticize and advise about the credibility of financial statement and the internal control system.

Australians firms require that the audit committee should have a team of knowledgeable members who are financially literate in that they can read and comprehend the financial statements and records. At least one member of the members of the committee should be qualified and experience. This implies that the member should be a qualified accountant or a finance professional with a vast experience in finance and accounting. Some of the members of the committee should have an understanding of the industry in which the firm operates. Australian Securities Exchange Corporate Governance Council (2007) provides that the effectiveness of audit committee is characterized by strong governance which enhances monitoring and improved conservatism. Krishnan and Lee (2009) insist that experienced members of the audit committee are useful in monitoring and record fewer incidences of misreporting. Directors who are more experience exhibit a high level of audit knowledge that results in more reliable and accurate reports (DeZoort 1998). The empirical evidence a positive reaction from the market when a new member of the audit committee is appointed and especially if he or she is an expert. DeZoort (1998) opines that a qualified audit committee plays a key leadership role which translates into a good working relationship with the firm and the auditors.

Vafeas (2003) argues that 76 percent of audit committee lack auditing experience while is an integral component of audit committee effectiveness. Dezoort et al. (2001) found that audit committee experience and auditing knowledge was positively related to the firm performance and fruitful discussions about the management of the firm. Further, Braiotta (1999) put more emphasis on the importance of members of the audit committee to have adequate skills in accounting and related fields to contribute to audit committee effectiveness. Corporate such as Price Water House Coopers insists that expertise by members especially on matters of finance is a key contributor to audit committee effectiveness. This coincides with Dezoort et al. (2002) who contend that audit committee should have at least three independent members whose one of them should have a high-level experience in finance and accounting.

2.3.4 Tenure of the Audit Committee and Fraud Reduction

DeZoort (1997) argue that audit committees have an important role to play in improving audit quality. This is critical to the reputation that they build in their work and the level of trust accorded to them by institutions. An effective audit committee and auditors enhances the integrity of financial reporting. The audit committees play a fundamental role in crafting an enabling environment for improved auditing. The audit committee is mandated to provide an environment that can accommodate an open discussion in a culture of integrity, respect and transparency between managementof the firm and auditors.

Audit committees are responsible for overseeing the work of the auditors. They need to be conversant with the audit strategy and that it addresses the major audit risks, and ensure that the auditors exercise appropriate professional scepticism. In addition, they should ensure that the auditor has an independent mind-set from the management and is truly objective. This will permit the audit committee to draw conclusions about the effectiveness of the audit (DeZoort, 1998).

DeZoort and Salterio (2001) argues that audit committees should inquire from the auditors on what they do to promote consistent of audit execution, whether resources are available for auditing and who is accountable for the quality of the work done. The audit committee should consider meeting the engagement quality control review partner (second partner reviewer) as part of the audit process to understand what they did to ensure quality and address any issues that may arise. This helps in minimization of fraud.

The period in which the audit committee stays in office affects the financial reporting quality because of the more period that the audit committee member remains in the position; the more the committee acquires knowledge and experience which in turn results in improved quality financial reporting. DeZoort et al. (2002) insist that the composition of the audit committee affects the overall effectiveness of the committee. A survey by Heidrick and Struggles (2007) indicated that 21 percent of firms had a term-limit policy for the directors and this proportion doubled tremendously since 2000. Shareholder activists have pointed out to most firms that there should be a limit in the period which a director can serve.

The reports by Deloitte and PricewaterhouseCoopers on audit committee director tenure agree that audit committee should periodically reassess the optimal mix of its committee members taking into account their skills, diversity, experience and time commitments, tenure and rotation of its members. This view is consistent withLapides and Tompkins (2007).

There is an improved focus on audit committee characteristics beyond independence and financial expertise. This is consistent with Carcello et al. (2011) who insisted on the need to develop more improved measures of the audit committee characteristics. Yang and Krishnan (2005) indicated that earnings management was affected negatively as a result of prolonged tenure by audit committee members among other multiple board memberships. In contrast, Dhaliwal et al. (2010) depict that quality accruals were positively related to lower tenure and fewer board memberships of the audit committee financial experts. Also, Barua et al. (2010) maintain that the extent of investment in internal auditing is greater when the members of the audit committee have a shorter tenure. Directors who have served for a longer period are more likely to be associated with the management while they are less liable to challenge decisions by the management. Vafeas (2003) maintains that the term limits board members; it is evident that long-tenured members of the council are more associated with the management since they are more inclined to approve higher compensation to the Chief Executive Officer (CEO).

2.3.5 Size of Audit Committee and Fraud Reduction

Anderson et al (2004) argued that the size of the audit committee will depend on the current needs and the cultural setting of the organization, and the extent to which duties and responsibilities are delegated to the audit committee by the board. Too many members might negatively affect the quality of discussion and the output of the debate. Similarly, very few members might interfere with the chair of audit committee while drawing conclusion on sufficient expertise and perspectives to make an informed decision.

The size of the audit committee is an important characteristic that is considered to be important in effective execution and discharge of duties which leads to fraud reduction. According to Cadbury Committee (1992), a minimum of three audit committee directors was proposed by quite a number of corporate governance reports for example (New York Stock Exchange, 2002). The report argued that a large committee has more authority, organizational status and a richer base of ideas however; it might be exposed to inefficiencies, slow processes and diffusion of authority if it becomes too large. This might hinder fraud detection. A small size of audit committee in this case could be considered more manageable and hence efficient in execution of their responsibilities since their processes are short and effective.

The size of audit committees requires the firm to devote more resources to support their oversight role of internal control and financial reporting. An extensive audit committee is more likely to be effective in their roles due to different skills and insights in ensuring quality information and accuracy and reliability in financial statements. Anderson et al. (2004) indicated that large audit committee effectively controls and protects the processes and procedures involved in accounting and finance, unlike small committees. Large committees uphold transparency on the shareholders and creditors which contributes positively to improved effectiveness of the audit committee.

According to Anderson (2004) opine that a large size of the audit committee might create an avenue for less significant discussion this might consume a lot of time making it difficult to realize cohesiveness and thus interfere with the effectiveness of audit committee.Klein (2002) indicates that too many people within the same geographical position might not work together efficiently. This is because it is very difficult to coordinate and manage such discussions this might impact negatively on the quality of reports and dilute the audit committee effectiveness. This is consistent with a study by Bryan andTiras (2004) who indicated that size of the audit committee was a critical component towards the realization of the audit committee effectiveness. However, in his study, Wakaba (2014) opines that an increase in the audit committee leads to a decline in performance. It can also be argued that large size of audit committees assists the firm to protect and control the accounting and finance process as a result of professional advice from expertise.

2.3.6 Budgetary Allocation and Fraud Reduction

The study conducted by Otley(2010), reveals that budgetary allocation, control and task ambiguity directly affects fraud positively but in situations where the combined interaction of variables was considered, the effects differ. According to the study, while budgetary allocation affect fraud positively negatively, in situations where budgetary control is high, allocation have a negative effect on fraud. One of the reasons for this increase in fraud when budgetary allocation increases is because of the lack of capacity of the institution to handle the increased allocation thereby having more avenues for fraud.

Brownell (2012), suggests that when budgetary allocation is high, budgetary participation and control should increase accordingly. When budgetary allocation is increased in any agency, there should be commensurate increase in control and capacity building for employees to ensure that they have the skills to apply the funds well. In the findingsby Brownell (2012), increased budget allocation that does not include budgetary control leads to increased risk of fraud. However, in case where budgetary control is high, there is a meaningful negative relation between allocation and fraud.

Carolyn (2017) examined the association between effects of budgetary allocation on fraud incidences using a sample of large US cities over 2013-14 timeframe. Within this context they examined whether the increase in budgetary allocation had any significant effect on fraud incidences. The study established that increase in budgetary allocation had a positive relationship with fraud risk. Those cities that had increased budgetary allocation reported more fraud incidences than those cities that did not have any change in budgetary allocation.

2.4Knowledge Gap

From the reviewed literature, studies had been done on the effectiveness of audit committee in most parts of America, Europe, and Asia (for instance Raghunandan&Dasaratha, 2004; Yang & Krishnan, 2005;Robert, 2006). More concentration has been laid on the effect of audit committee on firm performance(Bryan&Tiras, 2004), characteristics of audit committees for effectiveness (for instance Spira, 2003; Ogoro&Simiyu, 2015) and the factors influencing the performance of audit committees(Waweru et al., 2008).

However, little focus had been laid on the effect of audit committee on fraud reduction. In the African context, few studies have investigated the effect of audit committee in the public sector while most studies have ignored fraud reduction. Extant literature on the effectiveness of audit committee characteristics on firm performance has concentrated more on the private sector such as banking industry, manufacturing firms and listed firms. Limited focus has been given to the public sector. This study therefore found it necessary to investigate the effect of audit committee characteristics on fraud reduction in State Ministries in Kenya.

2.5 Summary of the Literature Review

From the above review, the empirical studies show a positive relationship between audit committee characteristics and fraud reduction. This has been demonstrated by both local and global studies that the study has investigated. This is consistent with the theories that support this study which are: agency theory and institutional theory that show a positive association between the effects of audit committee characteristics on fraud reduction. This is also coherent with the hypothesis of this study which predicts a positive relationship between the independent variables which are (frequency of audit committee meeting, independence of audit committee, expertise of audit committee, tenure of audit committee and the size of audit committee and the dependent variable which is (Fraud reduction).This can also lead to improvement in the audit quality.

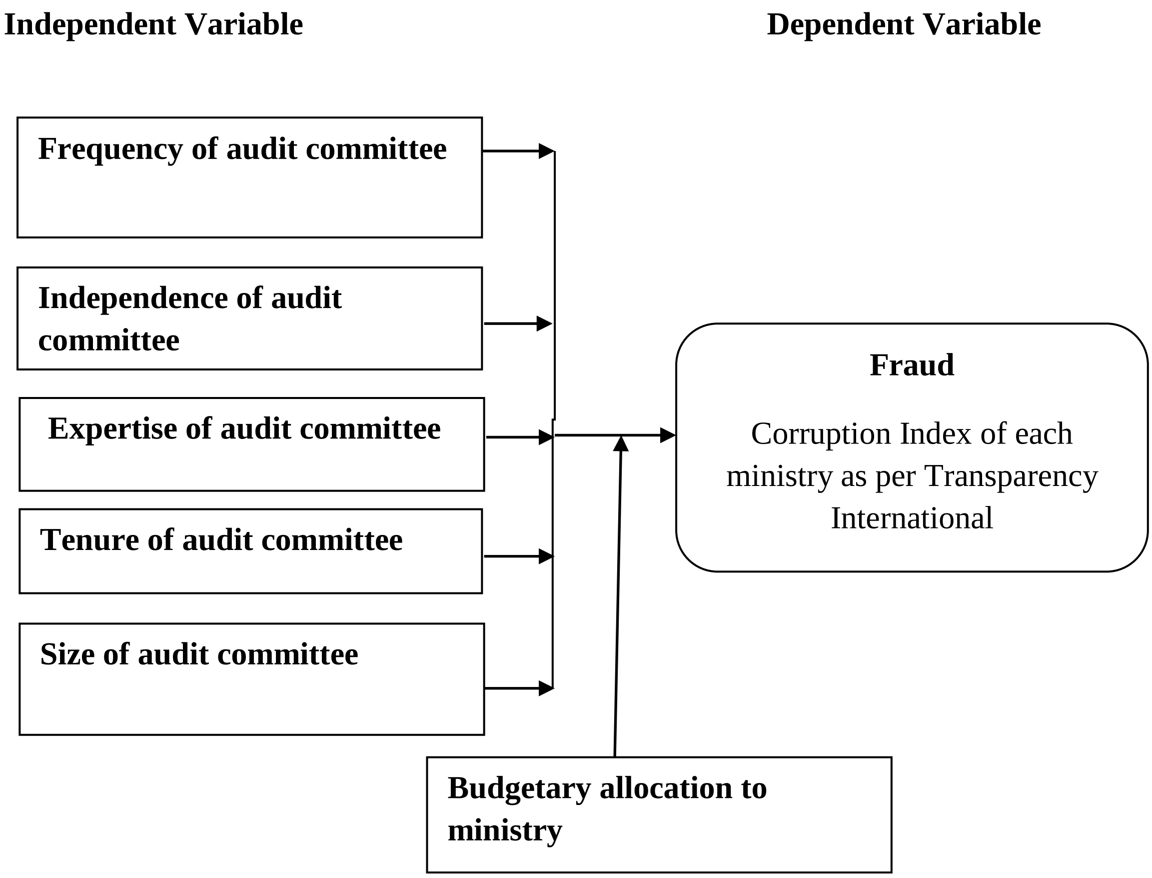
To achieve an effective audit committee, firms faced various challenges for example the audit committee has to encourage the auditors to increase the time spent on the audit even it is not associated with more substantive testing. The audit committee should also ensure that their role is strengthened in resolving the conflicts with management. This helps the auditor in producing the best quality of audit work. The audit fees should be controlled to ensure that the auditors are not being burdened. The fees must be fitted with the works performed by the auditors as well as the audit committee.

2.6 Conceptual Framework

The conceptual framework depicts the relationship between the independent variables and the dependent variable. The independent variables are; Frequency of audit committee, independence of audit committee, expertise of audit committee, tenure of audit committee and size of audit committee. The dependent variable is fraud reduction. In the study, budgetary allocation will be used as control variable. This is due to the fact that amount of budgetary allocation can also influence fraud incidences in ministries.

FIGURE1

Conceptual Framework



Moderating variable

Source: Author (2016)

TABLE1
Operationalization of Variables

Objective	Variable type	Indicators	Measure Scale
To establish the effect of frequency of audit committee meetings on fraud reduction in State Ministries in Kenya.	Independent meetings	Number of committee meetings held in a year	Ordinal/Interval’
To examine the effect of independence of audit committee on fraud reduction in State Ministries in Kenya	Independent Independence	The proportion of independent directors on the audit committee	Ordinal/Interval’
To establish the influence of expertise of audit committee on fraud reduction in State Ministries in Kenya.	Independent expertise	Number of years of experience of audit committees	Ordinal/Interval’
To determine the effect of tenure of audit committee on fraud reduction in State Ministries in Kenya.	Independent tenure	Combined number of years that the members have served in the committee	Ordinal/Interval’
To establish the effect of size of audit committee on fraud reduction in State Ministries in Kenya.	Independent size	Total number of directors in the audit committee	Ordinal/Interval’
	Dependent Fraud incidence	Corruption Index by Transparency International (The higher the index, the higher the fraud in that ministry)	Scale
Budgetary allocation to ministry	Moderating	Amount in Ksh of budgetary allocation	Scale/ ratio

Source: Author (2016)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design that was used in this study. It provided the research design, data collection instruments and procedures, and the techniques for data analysis.

3.2 Research Design

A research design is a framework of how data was collected and analysed in an attempt to confirm the hypothesis for the study or answer the research questions. A descriptive research design was used for this study to establish the relationship between the variables. A descriptive design is usually concerned with describing a population on critical study variables with a major emphasis being on determining the extent to which the two variables co-vary (Kothari, 2004). This study used a descriptive research design since it is appropriate in establishing the link between audit committee characteristics and fraud reduction in State Ministries in Kenya.

Frankfort-Nachmias and Nachmias (2008) maintain that a descriptive research design is useful for collecting data that depict the relationship between variables. The importance of this design is that it gives detailed information about a phenomenon, and it can also be used for the construction of the hypothesis. Since this study focussed on already existing data and sought to establish the relationship between the variables, the descriptive study design was the best suited for the study. The limitation of this research design is that it is highly exposed to errors, and thus it might ignore data that deviates from the research questions and limit itself to questions that conform to the study hypothesis (Cooper, & Schindler, 2005).

3.3 Study Population

The population of interest in this study was the 20 government ministries (The Presidency, 2016). Characteristics of audit committees and fraud incidences in the 20 ministries formed the basis of inquiry. The unit of analysis in this study was the ministry. Population refers to an entire group of individuals, events or objects having common characteristics that can be observed and measured (Kothari, 2005). Cooper and Shindler (2004) defined a population as a well-defined collection of individuals or objects known to have similar characteristics. All individuals or objects within a certain population usually have a common, binding characteristic or trait.The study carried out a census survey since the population was small. Cooper and Schindler (2005) defined a census survey as a procedure of collecting data systematically from members of a population. The whole population participates in data collection. A census survey is appropriate when the population is small since it is easy to use and understand.

3.4 Data Collection Methods

Data collection method is the approach adopted by the researcher to collect data in relation to the study (Kothari, 2004).The study used secondary sources of data. The study used secondary sources of data because it saved a lot of time as compared to conducting interviews. The study covered a period of three years (3) that coincided with when the new Constitution of Kenya (2010) came into effect and provided regulations on state ministries. Panel data was obtained from treasury and the ministries whereby data on the specific variables under investigation was extracted from annual reports, financial statements and records.

3.5 Instrumentation

A document analysis guide was prepared to guide the researcher in collection of data on audit committee characteristics and fraud reduction in all the 20 state ministries in Kenya (See Appendix I).Oso and Onen (2005) explained that a document analysis guide is prepared to enable the researcher in collecting data on the audit characteristics of the firm. It is an instrument used for collecting unobtrusive information. Document analysis was used because it was the most appropriate while using panel data. The study used panel data for a period of three years (2013-2015).

3.6 Data Analysis

After gathering that data, it was prepared for analysis. This involved cleaning, sorting and coding and then runStata data analysis and statistical software. This ensured that the collected data was presented in a more logical manner that provided a solid base to generate conclusion with regard to specific variables under investigation. Tables and charts were used for visual representation of the major findings.

Descriptive statistics used entailed mean score analysis, minimum, maximum, standard deviation and variance analysis. To find answers to the research hypothesis in determining the effect of audit committee characteristics on fraud reduction, the study adoptedpanel data model. The random effects (RE) or the Fixed effects (FE) model was to be applied. A Hausman test was used to select the best suited model for the data.

The fixed effects model was of the form:

$Y_{it} = \alpha_{it} + b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5 + u_{it}$…………………………………….. (i)

Where

Y= Fraud Reduction (FR)(dependent variable)

α_{it} = constant

$b_1 \ldots\ldots b_5$ =coefficients

X_1= Frequency of audit committee

X_2 = Independence of audit committee

X_3= Expertise of audit committee

X_4 =Tenure of audit committee

X_5=Size of audit committee

u_{it} = error term

Similarly, the random effects model was;

$Y_{it} = \alpha_{it} + b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5 + u_{it} + \varepsilon_{it}$……………………….. (ii)

Where

Y= Fraud Reduction (FR)(dependent variable)

α_{it} = constant

$b_1 \ldots\ldots b_5$ =coefficients

X_1= Frequency of audit committee meetings

X_2 = Independence of audit committee

X_3= Expertise of audit committee

X_4 =Tenure of audit committee

X_5=Size of audit committee

u_{it}= Between-entity error

ε_{it}= Within-entity error

3.7 Pre and Post Estimation Tests

The post and pre-estimation tests for any regression model were performed. These included tests for serial correlation, multicollinearilty, normality of residuals and heteroscedasticity.

These examinations were conducted to confirm that the data was fit for the any of the panel regression models were selected. The test also ensured that the outcome of the analysis through the model was reliable and the estimates efficient. Any of the violations to the assumptions were corrected appropriately.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

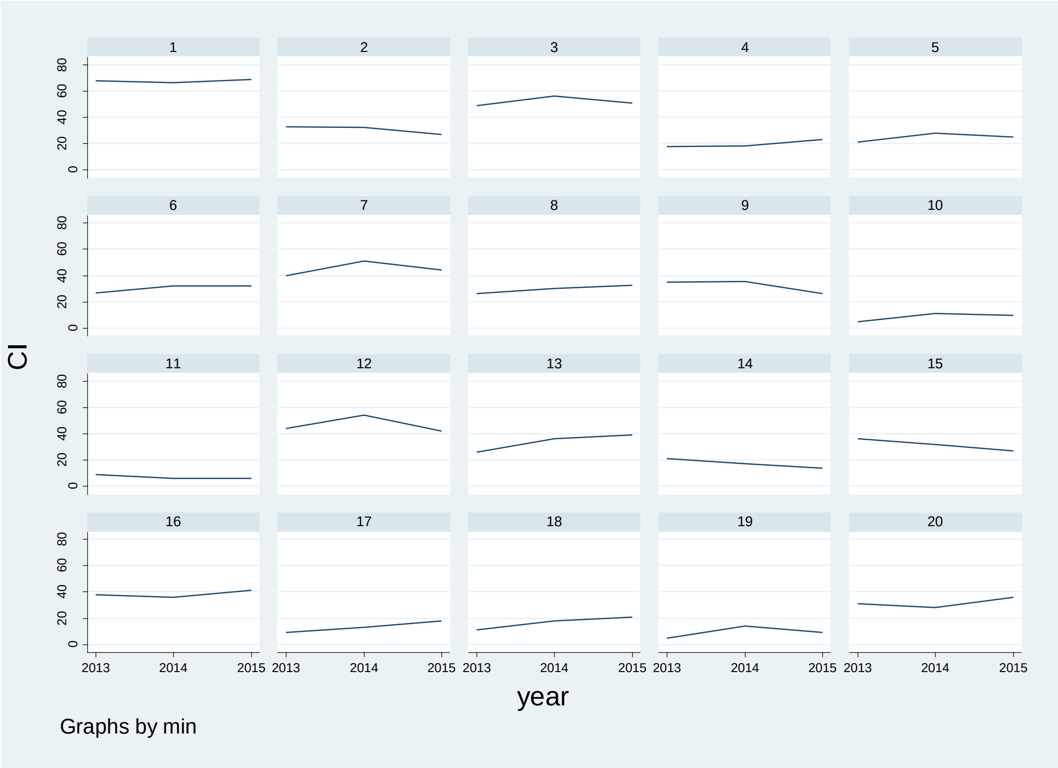
This chapter presents the results of the study as the research hypotheses and questions. Data for the twenty ministries was available on all the variables. The data was collected from transparency international (corruption indices for the ministries) and from the published financial statements of the ministries. This chapter presents the exploratory analysis in the first section and then presents the trend of the corruption index. Moreover, the overlain plots of the corruption indices of the 20 ministries in the three years are presented. Lastly, the posttest analysis is presented.

4.2 Exploratory Data Analysis

This section presents the exploratory analysis which provides a visual representation of how the 20 ministries performed as per the corruption indices by Transparency International. The 20 ministries overlain plots enabled the study to assess presence of time related fixed effects. The analysis enabled the study to select either the fixed effects or the pooled ordinary least squares regression model. The growth plots of the three years for the 20 ministries are presented in Figure 1. The results indicate that the corruption indices for the twenty ministries had varying movements. Some ministries like 14 and 15 had their corruption indices going down while ministries 8 and 13 had increasing indices. However, the changes within the years were not significant. This indicates that there were no significant time related fixed effects.

FIGURE 2

Growth Plots for Corruption Index

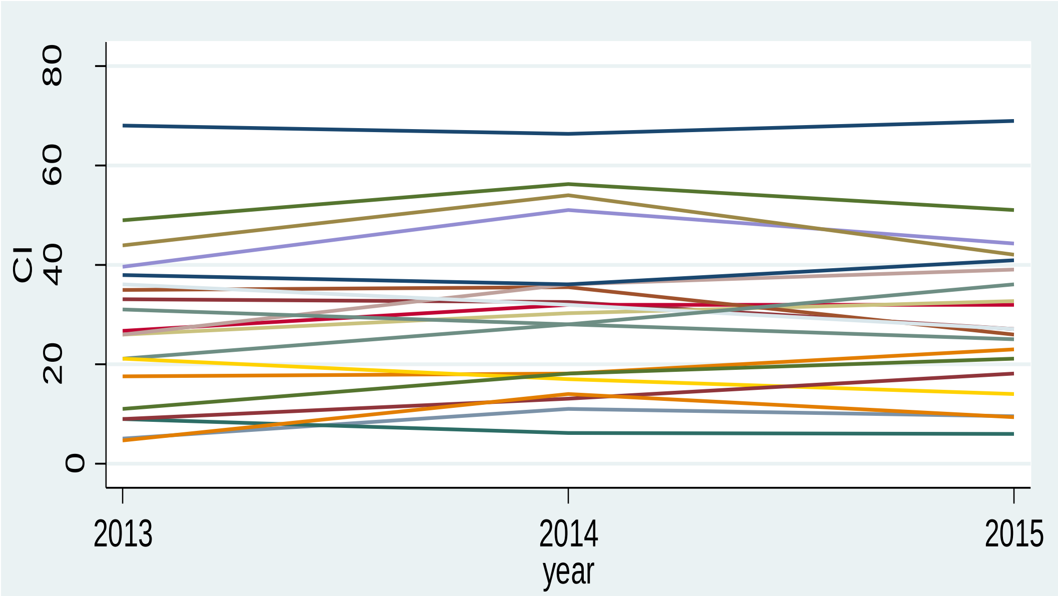


Source: Author (2016)

The overlain plots were also developed to assess whether the 20 ministries portrayed significant differences and also to test whether the ministries had differing intercepts. The results in Figure 3 indicate that the ministries had different levels of corruption indices and hence could have different intercept.

FIGURE3

Overlain Plots of Corruption Indices of the Ministries



Source: Author (2016)

4.3 Descriptive Statistics

Analysis of the study variables was done based on the descriptive statistics. The results are presented in Table 2.Presented in the table are the means, standard deviations, minima and maxima of the study variables. This is provided for the panel data where the within, between and overall statistics are provided. Results in Table 2 indicate that the average of corruption indices was 29.575 while the average number of audit committee meetings was 7.3. the study also established that average proportion of independent audit committee members was 0.51 indicating that around half of the audit committee members in the ministries were independent. The average years of experience for the board was 74.92 while average of the number of years that was served by the audit committee members was 25.6. The results also revealed that the average size of the audit committees was 8.02 while average allocation to the ministries was KES 60.3 billion.

TABLE 2

Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations	
CI	overall	29.575	16.641	3.9	68.7	N =	60
	between		16.82044	6.2	66.4	n =	20
	within		1.89379	27.275	31.875	T =	3
meetings	overall	7.3	2.257192	4	12	N =	60
	between		1.916075	4	10	n =	20
	within		1.244196	3.633333	10.96667	T =	3
ind	overall	.5071992	.1558293	.1666667	.8333333	N =	60
	between		.1031772	.3444444	.6676379	n =	20
	within		.1183136	.1722786	.8056119	T =	3
exp	overall	74.91667	24.20904	46	125	N =	60
	between		24.36849	50.33333	121	n =	20
	within		3.519116	68.25	82.91667	T =	3
tenure	overall	25.6	10.41869	10	47	N =	60
	between		10.47001	13	46	n =	20
	within		1.626059	21.93333	28.26667	T =	3
size	overall	8.016667	2.205476	5	13	N =	60
	between		2.015945	5.666667	12	n =	20
	within		.9684282	6.016667	10.01667	T =	3
alloca~n	overall	60.30304	76.6378	1.7298	308.5	N =	60
	between		75.99699	1.863267	277.6267	n =	20
	within		17.13453	-35.49863	119.0014	T =	3

Source: Author (2016)

4.4 Pretest Diagnostic Tests

The study also conducted diagnostic tests which are required before any regression analysis. The first test was on multicollinearity to assess whether there were any two independent variables which were highly related. This was done by developing a correlation matrix to establish whether there were any two variables which had high relationship. The correlation matrix is presented in Table 3. The results indicate that there were two variables which had high relationships (above 0.9). The variables in Table3 are corruption index (CI), meetings, independence (ind), experience (exp), tenure and size. The correlation results indicate no multicollinearity.

TABLE3

Correlation Matrix

	CI	meetings	ind	exp	tenure	size
CI	1.0000					
meetings	-0.4067	1.0000				
ind	0.2148	-0.6449	1.0000			
exp	0.4500	-0.7393	0.5744	1.0000		
tenure	0.4736	-0.6456	0.4718	0.8120	1.0000	
size	0.3538	-0.8454	0.6923	0.8520	0.7468	1.0000

Source: Author (2016)

The study also applied Variance Inflation Factor (VIF) to summarily preclude multicollinearity. Results that are presented in Table 4 indicate that there were no two variables that were highly correlated. Multicollinearity is indicated by VIFs of 10 and above. The VIFs in the study were all below 10. Greene (2008) posits that when the VIF is below 10, there is no multicollinearity.

TABLE4

Test for Multicollinearity

Variable	VIF	1/VIF
size	6.78	0.147466
exp	5.38	0.185804
meetings	3.66	0.273355
tenure	3.06	0.326817
ind	2.05	0.487830
allocation	1.44	0.692367
Mean VIF	3.73	

Source: Author (2016)

The next step after conducting the pretests was to assess which model was most appropriate for the data. This was done by the use of the hausman test. This assesses which of the two panel data models (fixed effects or random effects) is appropriate for the data. The results from the hausman test are presented in Table 5. The hausman test results indicated that the chi square value was significant (Chi square = 95.76; $p < 0.05$). These results hence indicated that the hypothesis that difference in coefficients is not systematic was rejected (Greene, 2008). This indicated that fixed effects model was the most appropriate for the data.

TABLE 5

Hausman Test

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
meetings	.1824957	.0185695	.1639262	.
ind	-7.609721	-9.411899	1.802178	.
exp	-.271632	.0285075	-.3001396	.0749839
tenure	-.6755593	-.1027823	-.572777	.1550418
size	.9214691	.8705697	.0508993	.
allocation	-.0130107	.0009063	-.013917	.0116487

```
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test:  Ho:  difference in coefficients not systematic

            chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                    =       95.76
          Prob>chi2 =      0.0000
```

Source: Author (2016)

4.5 Posttest Diagnostics

Since there were no significant time related fixed effects, the fixed effects panel data model without dummy variable for years was selected. After running the model, posttests were conducted to establish the reliability and efficiency of the derived model. First, test of autocorrelation was conducted. This was done using the Woodridge test. The results from the test are presented in Table6. The results indicate that the fstatistic was significant ($F = 8.971$; $p < 0.05$). This then led to rejection of the null hypothesis of no first order serial correlation

(Greene, 2008). However, the time-period was just three years and hence the serial correlation could not affect the results.

TABLE6

Test for Serial Correlation

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      19) =      8.971
           Prob > F =      0.0074
```

Source: Author (2016)

Further test for heteroscedasticity was conducted using the Breusch Pagan Cook Weisberg test. The results in Table 7 indicated that the null hypothesis of constant variance could not be rejected (chi square = 3.50; p > 0.05). This indicated that the variances of errors were constant or homoscedastic (Greene, 2008).

TABLE7

Test for Heteroscedasticity

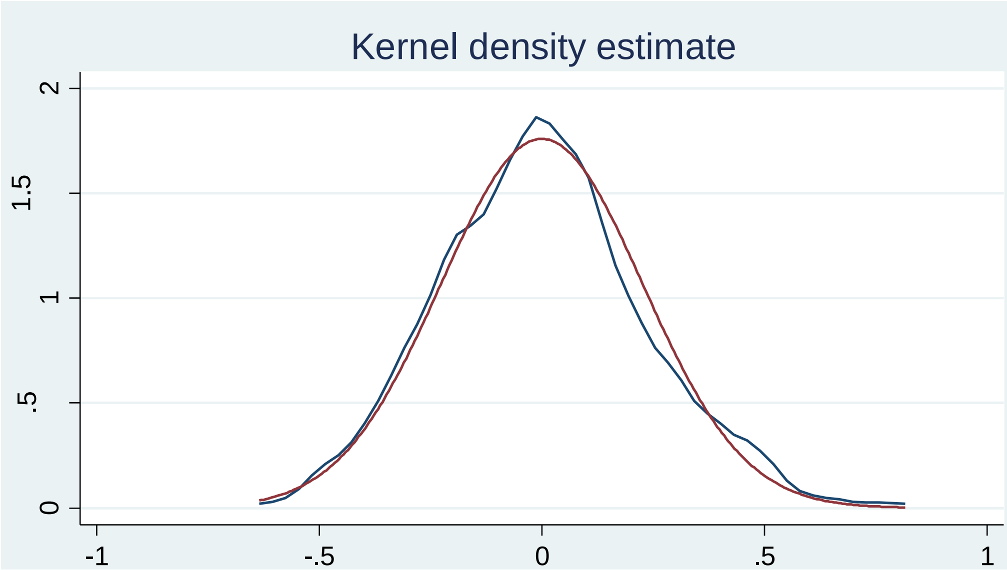
```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of CI

         chi2(1)      =     3.50
         Prob > chi2  =   0.0614
```

Source: Author (2016)

The last post diagnostic test conducted was test of normality of residuals. This was tested using the kernel density estimate which fits the residuals against the normal curve. The plot was as indicated in Figure 4. This indicates a good fit to the normal distribution and hence the residuals were considered to be normally distributed.

FIGURE 4

Test of Normality of residuals



Source: Author (2016)

4.6 Fixed Effects Model

The fixed effects model was thus selected and considered fit to analyze the data in the study. The results of the fixed effects model are presented in Table 8. The independent variables in the model were number of meetings of the audit committees (meetings), independence of the audit committees (ind), experience of the audit committee members (exp), tenure of the audit committee members (tenure) and size of the audit committee (size). Budgetary allocation of the ministries (allocation) was used as a control variable. The dependent variable in the study was Fraud reduction was measured using corruption index of the ministry (CI).

TABLE 8

Fixed Effects Regression

```
Fixed-effects (within) regression               Number of obs      =        60
Group variable: min                             Number of groups   =        20

R-sq:  within  = 0.7523                         Obs per group: min =         3
       between = 0.1640                                        avg =       3.0
       overall = 0.1369                                        max =         3

                                                F(6,34)            =     17.21
corr(u_i, Xb)  = -0.6583                        Prob > F           =    0.0000
```

CI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
meetings	-.4384698	.1622346	-2.70	0.011	-.7681702	-.1087694
ind	1.528422	1.650773	0.93	0.361	-1.826353	4.883197
exp	-.4592802	.0513315	-8.95	0.000	-.5635983	-.3549621
tenure	.3600676	.1014914	3.55	0.001	.1538122	.566323
size	-.1546153	.2317719	-0.67	0.509	-.6256324	.3164018
allocation	.0153776	.0096816	1.59	0.121	-.0042978	.0350531
_cons	57.50281	4.678295	12.29	0.000	47.99537	67.01025
sigma_u	20.85526					
sigma_e	1.2415037					
rho	.99646875	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(19, 34) =   393.37            Prob > F = 0.0000
```

Source: Author (2016)

The results presented in Table 8 revealed that the model was significant and a good fit to the data ($F = 17.21$; $p < 0.05$). The results also established that there was high negative correlation (-0.6583) among the time independent effects for each ministry and the regressors. This hence indicated that the selection of the fixed effects model was supported. The results also established that the model explained 75.23% (r sq. within = 0.7523) of the variation within, 16.4% between and 13.69 overall.

Results presented in Table 8 indicate that number of audit committee meetings significantly and negatively affected fraud incidences in the ministries (β = -0.4385; $p < 0.05$). These results assisted in testing of the first hypothesis, which was;

H_{01}: Number of audit committee meetings has no significant effect on the number of fraud incidences in state ministries in Kenya

The findings led to the rejection of the null hypothesis ($p < 0.05$). The study established that the number of audit committee meetings had a significant negative effect on fraud in the state ministries. This implied that increasing number of meetings would reduce fraud in the ministries.

Study results also established that independence of audit committees had no significant effect on fraud incidences in the ministries (β = 1.5284; $P > 0.05$). These results were used to test the second hypothesis of the study, which was;

H_{02}: The independence of audit committee has no significant influence on the number of fraud incidences in state ministries in Kenya

These results thus led to acceptance of the null hypothesis ($p > 0.05$). Therefore, the implication of the results was that independence of audit committee had no significant influence on the number of fraud incidences in state ministries in Kenya.

Expertise of the audit committees had a negative and significant effect on the incidences of fraud in the state ministries (β = -0.4593; $p < 0.05$). These results were applied in testing the third hypothesis of the study that;

H_{03}: The expertise of audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya

The findings led to rejection of the null hypothesis ($p < 0.001$). The findings hence established that expertise of audit committee had significant negative effect on the number of fraud incidences in state ministries in Kenya. The study findings implied that increasingexpertise among the audit committees had the effect of reducing fraud while reduced expertise had the opposite effect.

The study also established that tenure of the audit committees had a significant positive effect on incidences of fraud in the state ministries in Kenya ($\beta = 0.3601$; $p < 0.05$). The findings enabled testing of the fourth hypothesis of the study that;

H_{04}: The tenure of audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya

This hence led to rejection of the null hypothesis ($p < 0.01$). The finding hence indicated that tenure of audit committee had significant positive effect on the number of fraud incidences in state ministries in Kenya. The study results revealed that ministries with audit committees with large tenure had more fraud incidences than those with small tenure.

Lastly, the study established that size of the audit committee did not have any significant effect on fraud incidences in the ministries ($\beta = -0.1546$; $p > 0.05$). These results were applied to test the fifth hypothesis of the study;

H_{05}: The size of the audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya

The findings led to acceptance of the null hypothesis ($p > 0.05$). The findings established that size of the audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the results on effect of audit committee characteristics on the number of fraud detected in state ministries in Kenya. The chapter also provides the conclusion and recommendations. The summary of results, the conclusion and the recommendations are presented in relation to the objectives of the study.

5.2 Summary of Findings

This section provides a discussion of the study results by linking them to theory and previous empirical findings. Results from the study indicate that number of audit committee meetings significantly and negatively affected fraud incidences in the ministries ($\beta = -0.4385$; $p < 0.05$). This implied that increasing the number of audit committee meetings had the effect of reducing fraud in the state ministries.These results agree with the agency theory (Jensen &Meckling, 1976) that increasing monitoring of the institution would lessen the expropriation behaviour of management and thus reducing the agency conflict between principals (citizens) and agents (public officials).

The results also support the findings by Dhaliwal et al. (2010) that audit committees are required because of the separation of ownership and control in modern business which leads to conflicts of interest between managers and stakeholders. As a result of conflict between the principal and the agent, firms result to use of control techniques, such as audit committees, to mitigate agency costs and information asymmetry to counter fraud and improve performance of the firm. The study findings also compare with findings by Ali (2010)that there is a positive relationship between the audit committee meetings and the quality of financial reporting and ethics.These findings however contradict the findings of

Beasley (1996) who indicated that meetings of the audit committee do not necessarily mean that the committee is effective in carrying out its role and that there no fraud incidences.

Study results also established that independence of audit committees had no significant effect on fraud incidences in the ministries ($\beta = 1.5284$; $P > 0.05$). These results thus led to acceptance of the null hypothesis that independence of audit committee has no significant influence on the number of fraud incidences in state ministries in Kenya. These results are contrary with the findings by Zaman (2002) that for the audit committee to function efficiently, it has to exhibit independence. The findings also disagree with the findings by Abbott et al. (2000). Abbott established that firms with audit committee which are composed of independent directors are less likely to be sanctioned for fraudulent or misleading reporting. This highly enhances the chances of fraud reduction and thus boosts the effectiveness of audit committees. This study however, established that independence of audit committees did not have an effect on fraud incidences. The results also disagree with the results by Vicknair et al. (1993) that there is a positive association between the audit committee independence and the quality of financial reporting.

Expertise of the audit committees had a negative and significant effect on the incidences of fraud in the state ministries ($\beta = -0.4593$; $p < 0.05$). These results supported the institutional theory by North (1991) which asserts that having an audit committee with experience members have the possibility of increasing adherence to ethics and reporting standards in the firm. The study results also concur with the findings by Zaman (2002) that for the audit committee to function efficiently, it has to exhibit competence and professionalism in their work. The study results also support the results by Krishnan and Lee (2009) that a competent and experienced audit committee can effectively be able to criticize and advise about the credibility of financial statement and the internal control system and therefore reduce fraud.

The study also established that tenure of the audit committees had a significant positive effect on incidences of fraud in the state ministries in Kenya ($\beta = 0.3601$; $p < 0.05$). This indicated that increased tenure was related to increased fraud. These results support the findings by Yang and Krishnan (2005) proper accountability and reporting was affected negatively as a result of prolonged tenure by audit committee members. The study results agree with findings by Barua et al. (2010) that the extent of investment in internal auditing is greater when the members of the audit committee have a shorter tenure. The findings concurred with Vafeas (2003) that long-tenured members of the council are more associated with the management and are thus more likely to collude with management and engage in fraud.

The study in addition established that size of the audit committee did not have any significant effect on fraud incidences in the ministries ($\beta = -0.1546$; $p > 0.05$). These results led to the acceptance of the null hypothesis that the size of the audit committee has no significant effect on the number of fraud incidences in state ministries in Kenya. The results disagree with results by Anderson et al. (2004) that large audit committee effectively controls and protects the processes and procedures involved in accounting and finance, unlike small committees. Large committees uphold transparency on the shareholders and creditors which contributes positively to improved effectiveness of the audit committee. This study established that audit committee size is not significant in fraud control

Lastly, the study concluded that size of the audit committee was not a significant factor inn assisting the ministries to deal with fraud. This hence indicates that there are other factors regarding audit committee characteristics that are important than the size of the committee.

5.3 Conclusions

Following the study findings, the following conclusions are made. First, number of audit committee meetings significantly and negatively affected fraud incidences in the ministries. The implication of this finding is that conducting more meetings enabled ministries to be able to control fraud effectively. The importance of the Audit Committee in the public sector cannot be overstated. Itevaluates risk exposures relating to an organization’s governance and its operations andinformation systems and subsequently ensures effective and efficient operations. Thisaction enables reliability and integrity of financial and operational information. Additionally,it safeguards assets and ensures compliance with laws, regulations, and contracts. An AuditCommittee also plays a key role in assessing ethics and values within an organization. The audit committees therefore should ensure that they meet regularly so that they can carry out their functions effectively.

Secondly, independence of audit committees had no significant effect on fraud incidences in the ministries. This implied that independence of audit committee was not a significant factor in enabling the ministries to control fraud. The internal auditor should be knowledgeable on issues relating to risk managementand internal controls. The drivers of the role must continuously seek knowledge onemerging risks and risk factors. The office should be adequately supported by theentire organs of the entity. For a start, the holder of the office should be hired at alevel of senior management to develop the clout to relate and effectively deal withrisk owners within the organization who in most cases are senior managers. However, independent auditors may not have the intimate knowledge of how the ministry works and hence may not be able to detect and present fraud incidences.

The study also concluded that expertise of the audit committees had a negative and significant effect on the incidences of fraud in the state ministries. The implication of this was that ministries which had audit committees with expertise in finance, audit and accounting were better placed to control fraud than those ministries which had less experienced audit committees. The findings also imply that membership to Audit Committees should be diverse through an appropriate mixof skills and expertise to be informed by the nature and the mandate of the respectiveentity. The findings also indicated that an appropriate skills mix would ensure effectiveness of the internal oversighthaving availed the required expertise within the Committees.

The study further concluded that tenure of the audit committees had a significant positive effect on incidences of fraud in the state ministries in Kenya. This indicated that audit committees with longer tenures were incapable of dealing with fraud compared to audit committees with shorter tenures.

5.4 Recommendations

Following the findings from the study, the following recommendations are made. First, ministries in Kenya should ensure that they have a good mix of the desirable characteristics of their audit committee. The ministries should ensure that they have audit committee members who have expertise in finance, accounting auditing. Moreover, the members of the audit committee should also be experienced and highly experienced members are expected to assist the ministry in controlling fraud.

Secondly, the ministries should adhere to the statutory provision which indicate that audit committees should have at least four meetings in a year. Meeting more times in a year is seen to enable the audit committees to have the ability to monitor the ministries effectively and hence contribute to value for money.

Third, audit committees should be constituted with members who are knowledgeable on issues relating to risk managementand internal controls. The drivers of the role must continuously seek knowledge on emerging risks and risk factors. The office should be adequately supported by theentire organs of the entity. Moreover, the holders of the office should be hired at alevel of senior management to develop the clout to relate and effectively deal withrisk owners within the organization who in most cases are senior managers.

Lastly, the study recommends to the ministries to ensure that tenure of audit committee members is shortened. Having longer tenure is expected to erode independence and objectivity of the members and hence jeopardize their ability to deal with their monitoring role.

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APPENDIXES

Appendix I: Data Collection Schedule

The data collection schedule below will be used to guide the researcher in collecting secondary data as per the specific parameters captured in the guide for a period of ten years;this will be applied in all the 20 ministries in Kenya.

Ministry			
	Year		
Parameters	**2013**	**2014**	**2015**
Number of committee meetings held in an year			
The proportion of independent directors on the audit committee			
Number of years of experience of audit committees			
The proportion of non-executive directors to total number of directors on the board			
Total number of number of directors in the audit committee			
Bribery Index in the ministry			
Size of ministry (budgetary allocation in Ksh)			

Appendix II: List of Ministries in Kenya

1. Ministry of Interior and Coordination of National Government
2. Ministry of Devolution and Planning
3. Ministry of Finance & National Treasury
4. Ministry of Defence
5. Ministry of Foreign Affairs & International Trade
6. Ministry of Education
7. Ministry of Health
8. Ministry of Transport and Infrastructure
9. Ministry of Information, Communication and Technology
10. Ministry of Environment and Natural Resource
11. Ministry of Land, Housing and Urban Development
12. Ministry of Sports, Culture and the Arts
13. Ministry of Labour & East Africa Affairs
14. Ministry of Energy and Petroleum
15. Ministry of Agriculture, Livestock and Fisheries
16. Ministry of Industrialization and Enterprise Development
17. Ministry of Public Service, Youth & Gender Affairs
18. Ministry of Tourism
19. Ministry of Mining
20. Ministry of Water & Irrigation

Source: The presidency (2016).