INTERNAL CONTROL SYSTEMS ON FINANCIAL ACCOUNTABILITY IN NATIONAL PUBLIC SECONDARY SCHOOLS IN KENYA

MARGARET ATIENO OMONDI

DOCTOR OF PHILOSOPHY

(Business Administration)

JOMO KENYATTA UNIVERSITY OF

AGRICULTURE AND TECHNOLOGY

2021

Internal Control Systems on Financial Accountability in National Public Secondary Schools in Kenya

Margaret Atieno Omondi

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Business Administration of the Jomo Kenyatta University of Agriculture and Technology

2021

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature……Date……..……

Margaret Atieno Omondi

This thesis has been submitted for examination with our approval as University supervisors.

Signature……Date……..……

Dr. Olweny Tobias, PhD

JKUAT, Kenya.

Signature……Date……..……

Dr. Julius Miroga, PhD

JKUAT, Kenya.

DEDICATION

I dedicate this research to the Lord Almighty who has given me the wisdom, good health and protection throughout my life and to my highly cherished mother, Lucia Auma, whose wisdom, commitment and unconditional love has inspired me to pursue my potentials to the highest limit.

ACKNOWLEDGEMENT

I acknowledge Jomo Kenyatta University of Agriculture and Technology for giving me an enabling environment for my studies. I sincerely appreciate my supervisors Dr. Tobias Olweny and Dr. Julius Miroga for their positive criticism, motivation and intellectual guidance that enabled the completion of this research. My heartfelt gratitude goes to my entire family members including my highly cherished mother, dear husband and beloved children who accorded me both moral and financial support.

TABLE OF CONTENTS

DECLARATION ..... **ii**

DEDICATION ..... **iii**

ACKNOWLEDGEMENT ..... **iv**

TABLE OF CONTENTS ..... **v**

LIST OF TABLES ..... **xii**

LIST OF FIGURES ..... **xiv**

LIST OF APPENDICES ..... **xv**

ABBREVIATIONS AND ACRONYMS ..... **xvi**

DEFINITION OF TERMS ..... **xvii**

ABSTRACT ..... **xviii**

CHAPTER ONE **1**

INTRODUCTION **1**

1.1 Background to the Study 1

1.1.1 Internal Control Systems and Financial Accountability Global Perspective 3

1.1.2 Internal Control Systems and Financial Accountability Kenyan Perspective 5

1.2 Statement of the Problem 8

1.3 Objectives of the Study 9

1.3.1 General Objective 9

1.3.2 Specific Objectives 9

1.4 Research Hypotheses 10

1.5 Significance of the Study 10

1.6 Scope of the Study 11

1.7 Limitations of the Study 12

CHAPTER TWO 13

LITERATURE REVIEW 13

2.1 Introduction 13

2.2 Theoretical Review 13

2.2.1 Agency Theory 13

2.2.2 Fraud Triangle Theory 16

2.2.3 Accountability Theory 19

2.3 Conceptual Framework 21

2.3.1 Control Environment 22

2.3.2 Control Activities 23

2.3.3 Risk Assessment 24

2.3.4 Information and Communication 25

2.3.5 Monitoring of activities 27

2.3.6 Financial Accountability.....29

2.4 Empirical Literature Review 30

2.4.1 Control Environment and Financial Accountability.....31

2.4.2 Control Activities and Financial Accountability 37

2.4.3 Risk Assessments and Financial Accountability 40

2.4.4 Information/Communication and Financial Accountability.....43

2.4.5 Monitoring and Financial Accountability.....46

2.5 Critique of Reviewed Literature.....49

2.6 Summary of Reviewed Literature 51

2.7 Research Gaps 53

CHAPTER THREE 54

METHODOLOGY..... 54

3.1 Introduction 54

3.2 Research Philosophy 54

3.3 Research Design.....55

3.4 Target Population 56

3.5 Sample Population.....56

3.5.1 Sample Size and Sampling Technique 56

3.5.2 Sample Population 57

3.6 Data Collection Instruments 58

3.7 Pilot Test 58

3.7.1 Validity 59

3.7.2 Reliability Analysis 59

3.8 Data Collection Procedure 60

3.9 Measurement of Variables 61

3.10 Data Analysis and Presentation 63

3.10.1 Test of Multicollenearity 64

3.10.2 Multiple Regression Analysis 64

3.10.3 Testing for Normality 66

3.10.4 Test of Homoscedasticity 67

3.10.5 Test of Auto-Correlation 67

CHAPTER FOUR 68

RESULTS AND DISCUSSION 68

4.1 Introduction 68

4.2 Pilot Test Results 68

4.2.1 Validity of the data collection instrument 68

4.2.2 Reliability Analysis 70

4.3 Response rate....71

4.4 Financial Accountability Descriptive Analysis....72

4.5 Control Environment Descriptive Analysis....79

4.6 Control activities Descriptive analysis....84

4.7 Risk assessment Descriptive analysis....89

4.8 Information and communication Descriptive analysis....95

4.9 Monitoring Descriptive analysis....101

4.10 Inferential Analysis....107

4.10.1 Correlations analysis....108

4.10.2 Models and diagnostics tests....110

4.10.3 Effect of Control Environment on Financial accountability....114

4.10.4 Effect of Control Activities on Financial Accountability....118

4.10.5 Effect of Risk Assessment on Financial Accountability....121

4.10.6 Effect of Information and communication on Financial Accountability124

4.10.7 Effect of Monitoring on Financial accountability....127

4.10.8 Joint Effect of Control Systems on Financial Accountability....130

CHAPTER FIVE....134

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS....134

5.1 Introduction....134

5.2 Summary of Findings 134

5.2.1 Control Environment and Financial Accountability.....135

5.2.2 Control Activities and Financial Accountability 136

5.2.3 Risk Assessment and Financial Accountability.....136

5.2.4 Information/Communication and Financial Accountability.....137

5.2.5 Monitoring and Financial Accountability.....137

5.3 Conclusion.....137

5.3.1 Effect of Control Environment on Financial Accountability 138

5.3.2 Effect of Control Activities on Financial Accountability.....138

5.3.3 Effect of Risk Assessment on Financial Accountability 139

5.3.4 Effect of information and Communication.....139

5.3.5 Effect of Monitoring on Financial Accountability 139

5.4 Recommendations of the Study.....140

5.4.1 Control Environment and its effect on Financial Accountability.....140

5.4.2 Control Activities and its effect on Financial Accountability 140

5.4.3 Risk Assessment and its effect on Financial Accountability.....141

5.4.4 Information and Communication and its effect on financial accountability142

5.4.5 Monitoring and its effect on Financial Accountability.....143

5.5 Contribution of the Thesis.....143

5.6 Areas for Further Research.....144

REFERENCES..... 146

APENDICES..... 158

LIST OF TABLES

Table 3.1: Target Population Table.....56

Table 3.2: Sample Distribution Table 58

Table 3.3: Qualitative Measurement of Variables 61

Table 3.4: Quantitative measurement of financial accountability.....63

Table 4.1: KMO and Bartlett's tests 70

Table 4.2: Cronbach's Alpha Reliability Table 71

Table 4.3: Response rate 71

Table 4.4: Missing data analysis 72

Table 4.5: Descriptive analysis of financial accountability 77

Table 4.6: Descriptive statistics on financial accountability (latent construct).....78

Table 4.7: Secondary descriptive analysis of financial accountability 79

Table 4.8: Descriptive analysis of Control Environment.....84

Table 4.9: Descriptive analysis of control activities 89

Table 4.10: Descriptive analysis of risk assessment 95

Table 4.11: Descriptive analysis of information and control.....101

Table 4.12: Descriptive analysis of monitoring 107

Table 4.13: Correlations matrix 110

Table 4.14: JB Tests of Normality 112

Table 4.15: Model Summary.....112

Table 4.16: Multicollinearity.....113

Table 4.17: Heteroscedasticity Results 114

Table 4.18: Control environment & financial accountability 116

Table 4.19: Control activities and financial accountability.....120

Table 4.20: Risk assessment and financial accountability 123

Table 4.21: Information & communication and financial accountability 126

Table 4.22: Monitoring and financial accountability 129

Table 4.23: Joint effect model.....131

Table 4.24: Summary of Hypotheses tests 133

LIST OF FIGURES

Figure 2.1: Conceptual framework 22

Figure 4.1: Model residuals Histogram.....111

Figure 4.2: Residual plot against predicted values 114

Figure 4.3: Control environment and financial accountability 115

Figure 4.4: Control Activities and financial accountability.....118

Figure 4.5: Risk Assessment and financial accountability 122

Figure 4.6: Information and Communication and financial accountability. 125

Figure 4.7: Monitoring and financial accountability 128

LIST OF APPENDICES

Appendix I: Questionnaire.....158

Appendix II: Secondary Data Sheet 168

Appendix III: List of National Public Schools.....169

Appendix IV: Rotated Factor Loadings Matrix Questionnaire 172

Appendix V: Durbin Watson Tables.....174

Appendix VI: NACOSTI Research Permit.....175

ABBREVIATIONS AND ACRONYMS

BOM	Board of Management
COSO	Committee of Sponsoring Organizations
DEOs	District education officers
DOS	Director of Studies
FDSE	Free day secondary education
FPE	Free primary education
GOK	Government of Kenya
IPAAR	Institute of policy analysis and research
ICS	Internal control systems
KEMI	Kenya education management institute
MOE	Ministry of Education
MOEST	Ministry of education science and technology
NGOs	Non- governmental organizations
PPD	Public procurement and disposal act
PPOA	Public procurement oversight authority
PTA	Parents Teachers Association
QASOs	Quality assurance and standards officers

DEFINITION OF TERMS

Control activities	Actual processes and procedures such as segregation of duties and authorization that are carried out in public secondary schools to ensure proper financial management (Wichenje *et al.*, 2012).
Control environment	The conditions in public secondary schools such as the composition, qualifications and accounting knowledge (COSO, 2010).
Financial fraud	Use of funds for any other purpose other than the intended by flouting the stipulated rules by the ministry of education for personal gain (Moraa, 2015).
Financial Accountability	The process that requires public service organizations and individuals to be held responsible for their decisions and actions, including their stewardship (Andrew & Sayag,2010).
Information/communication	The process of reporting how finances have been used in public secondary schools (COSO, 2010).
Internal control systems	The procedures established by the MOE to check, record and supervise management of finances in public secondary schools, designed to provide reasonable assurance of the achievement of objectives (Laaria, 2013).
Monitoring	The process of enforcing and ensuring that the stipulated procedures by the ministry of education are followed (Ochieng, 2013).

ABSTRACT

The purpose of this study was to evaluate the effect of internal control systems on financial accountability in national public secondary school in Kenya. The government of Kenya has put in place internal control systems to ensure that the funds invested in education are used for the right purpose. However, accountability is still wanting in some public secondary schools. The study was carried out in 103 national public secondary schools in Kenya. The study was guided by; Agency theory, Fraud triangle theory and accountability theory. Survey research design was used on a population of 309 consisting of; 103 principals, 103 bursars, 103 BOM chairs. Purposive and simple random sampling were used to select principals, bursars and BOM chair. Primary data was collected by use of questionnaires, while secondary data was collected through audited financial statements. Reliability of the research instruments was tested through Cronbach's Alpha. Construct validity was assessed through factor analysis. Both descriptive and inferential statistics were used to analyze the data collected. Descriptive statistics comprised of frequencies; means, standard deviation and variance. Inferential statistics comprised of; Correlation analysis, ANOVA, regression analysis, testing for normality, autocorrelation and multicollinearity. Effect of control environment on financial accountability indicated an R-square of 0.344 and F-statistic of 33.14 which has a p-value of 0.000. The effect of control activities on financial accountability indicated an R-square and F-statistic of 29.05 which has a p-value of 0.000.The effect of risk assessment on financial accountability showed an R-square of 0.121 and F-statistic of 9.11 which has a p-value of 0.000. The effect of information and communication on financial accountability show an R-square of 0.239 and F-statistic of 20.72 which has a p-value of 0.000. The effect of monitoring on financial accountability showed an R-square of 0.276 and F-statistic of 25.16 which has a p-value of 0.000. The dimensions of internal control systems were found to have a significant joint effect on financial accountability. The results for the regression model show an R-square of 0.634, the Analysis of Variance (ANOVA) had an F-statistic of 21.56 with a p-value of 0.000. JB statistic which has a p-value of 0.813 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.133. It was therefore recommended that the government should ensure that BOM have accounting knowledge and should be appointed based on integrity and ethical values. Segregation of duties should be strengthened with clear roles of the principal, bursar, other BOM members, storekeeper and other employees. The government should interlink the schools bank accounts to a central accounting information system. The government should ensure through independent checks that the budgets and other financial statements are complete, reliable and correct. There should be frequent external audits by county auditors. The Principal and bursar should be allowed to evaluate the work done by the auditors and post to the central website.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Accountability is the exercise whereby public service organizations and individuals within them are held answerable for their outcomes and activities, including their stewardship. Accountability ensures dependable accounting and financial reporting, and distribution of resources in an efficient manner. This assists in achieving the primary goal of government which is to distribute limited capital assets to the production of those goods and services for which demand is great. Unsatisfactory accounting and reporting, on the other hand, conceal waste and inefficiency, thereby preventing proficient allocation of economic resources (Andrew & Sayag, 2010).

Internal control reduces integrity gap that may be due to unpremeditated mistakes, lack of knowledge of accounting principles, unintentional bias, deliberate falsification and parting from generally accepted accounting principles. Internal control give emphasis to the significance of transparency as an essential feature of public sector accountability. Internal control fulfills accountability obligations. It is the duty imposed on a person who holds command or authority or is in a position of trust to act for and on behalf of another person to take responsibility for his action and to render an account of stewardship whenever it is indispensable to do so (COSO, 2010).

Financial accountability in any institution is a key driver to success. Governments and other institutions both private and public have therefore put in place in-house control procedures to control the use of funds. Internal control systems is the process, driven by an entity's board of management and other staffs, envisioned to deliver faithful assurance regarding the accomplishment of goals. It plays a weighty role in pinpointing and hindering deception and protecting the organization's assets, both physical and immaterial. Internal controls used in public secondary schools

comprises of control environment, control activities, risk assessment, information and communication and monitoring. (Institute of Policy Analysis and Research, 2014).

Control environment is considered as the tone at the top of an institution, influencing the perception of its employees. It is the attitude of an organization and the way it operates. It concerns the creation of an atmosphere in which people can conduct their activities and carry out their control tasks effectively. The control environment is the set of principles, processes, and structures that provide the basis for carrying out internal control across the organization. The board of directors and senior management create the tone at the top regarding the importance of internal control including expected standards of conduct. Management strengthens expectations at the various levels of the organization (Oduol, 2011).

Control activities are the actions established through guidelines and procedures that help ensure that management's directions to mitigate risks to the achievement of objectives are carried out. Control activities are accomplished at all levels of the entity, at various stages within business processes, and over the technology environment. They may be deterrent or detective in nature and may encompass a range of manual and automated activities such as authorizations and approvals, verifications, reconciliations, and business performance reviews. Segregation of duties is typically built into the selection and development of control activities. (Garcia, 2004).

Risk assessment involves a dynamic and iterative process for ascertaining and evaluating hazards to the accomplishment of goals. Risks to the achievement of these objectives from across the entity are considered relative to conventional risk tolerances. Thus, risk assessment forms the basis for determining how risks will be managed. A prerequisite to risk assessment is the formation of objectives, linked at diverse levels of the entity (COSO, 2010).

Communication is the recurrent, iterative course of providing, distribution, and attaining necessary information. It is the means by which information is dispersed all

over the organization, flowing up, down, and across the entity. It enables employees to receive a clear message from senior management that control tasks must be taken seriously. External communiqué is twofold: it enables inbound messages of relevant external information and offers information to outside parties in reaction to requirements and prospects (COSO, 2013).

Monitoring is the procedure of weighing the worth of a system's performance over time. Staff should assess the various systems of internal control and updates on a continuous basis, any revealed shortages should be addressed immediately and added to the whole systems of internal control. Monitoring of internal control should embrace procedures and techniques so that the results of audits and other reviews are quickly resolved. Monitoring activities may be ongoing or may be separate valuations but is vital given the complex and dynamic environments faced by most organizations (Transparency International Kenya, 2014).

1.1.1 Internal Control Systems and Financial Accountability Global Perspective

In Malaysia, 23% out of 100 great companies both public and private were found to be endangered to fraud, and 70% and the cases reported are committed by personnel. Fraud cases, especially those in smaller firms and comprising lesser amounts of money, frequently go unreported nevertheless, they lead to hefty damages to each firm affected. The main basis of the deceitful cases was established to be poor internal controls. In corporations where tight core controls were established to be in place, negligible fraud ensued (Abdooulaye *etal.*, 2018).

Ghana Post Company Limited was confronted with heaps of challenges comprising wide spread dishonesty and mismanagements due to weak inside controls. There was no internal audit unit to autonomously monitor compliance of internal control guidelines and processes. Strong inner mechanism structures were lacking and management honesty was near to the ground, this, therefore, amplified chance for swindling of funds and embezzlements.

In Victorian public schools, numerous cash control mechanisms have been laid in place. The school council bank financial records must be in the name of the school. Registered cosigners at the bank for these accounts must comprise the principal as an obligatory signatory and another co-signatory who must be an associate of the school council and approved by the association as a signatory. The school council can accept more than one signatory at any one time provided they are school council members. The listed countersigners must be minuted at school council and saved up to date at the bank (Carslaw, Richard & Mill, 2007).

In the USA, School bank books must be reconciled monthly and must be scrutinized as per section procedures. The financial records are not permissible to be spent over your limit. The accounts must be independently examined every single year. The transfer of money from one bank account to a different one must be endorsed by the principal and a written explanation showing relocations must be presented to the school council each month. Each school board must cultivate and vouch for an investment strategy. A policy for the gathering of cash ought to be in place and reachable for all staff and members of the public. Physical safety procedures, comprising a tamper-proof, well-ordered access safe and safe cash drawer are indispensable to inhibit any loss of cash from the institutions grounds (Fraenkel & Norman, 2014).

Receipts should be recorded when received and original given out sanctioning the tenacity of the payment. No acknowledgement should be changed or duplicate receipts given out. If an error is occurs, the receipt should be cancelled and the original of the incorrect one attached to the duplicate copy. If a replica receipt is demanded, the receipt of money must be documented by a typed note on school letterhead, or by providing a sundry debtor report showing the receipt of cash.

In South Africa, individual cheques should not be cashed in any conditions. All cheques received by post are to be documented in a payment book. Those that have not been crossed “not negotiable” must be crossed immediately they are received. Before process sing a reimbursement, the original receipt should be available, receipt number accepted, and the payment voucher for the reimbursed sum attached to the

document. Refunds need to be by cheques or through electronic transfer and not in cash (Hallak & Poisson, 2015).

Additionally, they advise that all receipts must be banked every day to evade custody cash overnight. Nonetheless, small schools are permitted to bank once a week. Money kept on the premises overnight must be tamper-proof and checked repeatedly by different individuals. Internal control can be further enhanced by assuring weekly banking does not take place on the same day every week. In no circumstances should cash be left on school grounds in holiday times.

In spite of all these mechanisms, fraud still ensues. In South Africa, the audit committee report on protecting the public purse, demonstrated that in the year 2014, there were two hundred and six discovered cases of fraud in schools with an average value of £11,313. Over half of the cases involved fraud by workers. This is an escalation from 8% in 2013 to 11% in 2014 (Victoria State Government , 2015).

In Illinois charter school, misappropriation was estimated at $27.7 in 2014. But due to the insufficiency of Illinois' present oversight structure, it was probable that the exposed amount was merely the tip of the iceberg. The federal government had raised a red flag about Illinois' oversight deficiencies, affirming that the state's system for monitoring charter schools was ill designed (Center for popular democracy and action now, 2015).

1.1.2 Internal Control Systems and Financial Accountability Kenyan Perspective

The mission of the Ministry of Education (MOE) is to deliver, stimulate and synchronize lifetime instruction, training and research for maintainable growth. Since 2003, the government has introduced numerous restructurings in the education sector comprising the introduction of Free Primary Education (FPE). In 2008, the MOE improved its support to public secondary schools by providing certain level of subsidy to support schools' operative and expansion expenditure. Some of these

resources are used for the procurement of books, other educational education materials, and amenities for the learning organizations (Wango & Gatere, 2013).

Over time, strategies have been fashioned by the ministry of education to ensure that the processes in the obtaining of goods, services and works for schools are transparent and accountable. The main objectives of internal control include; ensuring that all financial transactions are recorded and soundly reinforced by appropriate documentation and that the accounting records report the true financial position of the school in a clear manner. This ensures they can be trusted upon with confidence to provide a basis for informed financial decision making. It also demands approval to ensure that transactions are appropriately authorized and processed by individuals acting within their designated authority. Additionally, it ensures wholeness and accuracy to give assurance that the financial records comprise of all transactions and can be absolutely substantiated (Auditor General, 2016/2017).

The records ought to be well-timed to certify that all dealings are documented as near as feasible to the time of occurrence so that at all times the accounting records reflect the actual financial state and can be verified. There should be the security of assets to provide assurance of the security of assets and records and physical existence to guarantee that all properties are recorded on the asset register (Glennerster *et al.*, 2011).

The government and the ministry of education have placed a lot of importance on the judicious use of finance. Financial guidelines as well as procurement need to be adhered to. Anybody who breaches laid down protocols can be exposed to punitive action under the provisions of the constitution, the penal code, and the code of regulations for civil servants and the teachers' service commission Act (Ministry of Education Science and Technology , 2010).

The Board of Management and principals must try to survive with these transformative modifications and financial responsibility is a portion of this process. The consequences would advise that principals and Board of Management using the competences of improved financial accounting must justify use of public funds and

stop scams; they need know that not only should funds be used more competently but also should not be siphoned out unsuspectingly (MOEST, 2012).

There appear to be particular challenges and gaps that still exist which make it probable for some school principals, bursars, account clerks, and BOM members to be able to defraud school funds. The problem with Kenyan school's management structures is its lawless nature. Principals and other BOM members several of which are deficient of relevant management expertise have been left to manage massive sums of funds and undertaking key administration practices such as bookkeeping, forecasting, procurement and development supervision (Kenya Educational Management Institute (KEMI), 2013).

Many educational organisations face quite a number of challenges connected to core controls like; struggles with liquidity glitches, financial reports are not well-timed, liability for the monetary possessions is still not good enough, rackets and misappropriation of institutional resources. The principals are in control of nearly all cash transactions and the BOMs are a simple rubber stamp. Parents Teachers associations role in numerous schools is restricted to a rare activities such as fundraising for various growth projects of the schools but no follow-ups are done to find out how the moneys raised was later consumed (Simiyu, 2014).

Absence of close watching, extended procurement processes, deficiency of financial management training, late distribution of funds and absence of audit personnel in secondary schools obstruct noble financial control practices in public secondary schools. There has been a difficulty in collaboration between the affiliates of the BOM instigated by a deficiency of solidarity and financial knowledge. Countless head teachers are still caught up in embezzlements of funds and other school assets every year, this denies innocent students the right to get the best from the secondary education cycle and some end up dropping out due to these dishonesties (Maronga, Weda & Kengere, 2013).

Budget endorsement is primarily undertaken by the principal and the accounting officer and therefore this could increase occasions for conspiracy and bribery. Heads

of schools did not include heads of sections in checking and regulation of the budget, this windswept the chance to leave school financial accounts open for examination by the persons in the system to curtail on dishonesty, fraud, and misuse of funds (Kahavizakiriza, Kisiangani & Wanyonyi, 2015). It is on the basis of these challenges and gaps that the study pursues to evaluate the effect of control systems on financial accountability in national public secondary schools in Kenya.

1.2 Statement of the Problem

Financial accountability in some public secondary schools is still in doubt, thus mis appropriations are still witnessed in many public secondary schools; (Oduol, 2011) Analyzed ethical issues of secondary school leaders in Kenya. The study established that there were puzzling moral principles and dissimilar significances such as some district school auditors who call for bribes instead of giving direction on the school accounting and financial management process. Some leaders were seen to encourage their own wellbeing e.g. some school board members sought for special treatment such as tenders to supply goods, and this included their impartiality in monitoring efficient management of finance as they were also a partner in crime in the embezzlements and fraud cases. A report by Ethics and Anti-Corruption Commission established that thirty percent (30%) of funds channeled to subsidized secondary education could not be accounted for by the various school principals (Ethics and Anti- Corruption Commission, 2015/2016). An audit report by the ministry of finance revealed that Kenyan shillings 4.2 billion from donors and Kenyan taxpayers had been misappropriated by senior Ministry of education officials and head teachers which made the international development partners that were funding free primary education to withdraw from the project (Transparency International Kenya, 2014). A survey by the Auditor General on financial statements from the ministry of education revealed that the government could be losing millions of shillings of capitation funds in public schools. The 2016/2017 financial appraisals showed that an audit inspection carried out on the free day secondary schools in Nairobi, Kiambu, Kajiado and Machakos counties revealed fraudulent deals that include; inflation of enrolment, irregular allocation of funds, procurement of goods

and questionable expenditure (Auditor General, 2016/2017). These misappropriations still take place despite the internal control systems put in place by the government of Kenya. BOM is expected to play an oversight role through control activities, risk assessment, information/communication, and monitoring to implement the internal control systems (MOEST, 2012).With such misappropriations, the objectives of subsidized secondary school cannot be fully achieved. Many more students who would benefit from the funds are left out and drop out of school. Funds that could be used in other development projects are also being wasted and go to the pocket of a few people. The study therefore seeks to evaluate the reasons behind the persistent lack of financial accountability and possible long lasting solutions to curb such misappropriations.

1.3 Objectives of the Study

The study had both general and specific objectives.

1.3.1 General Objective

The main objective of this study was to evaluate the effect of internal control systems on financial accountability in national public secondary schools in Kenya.

1.3.2 Specific Objectives

i. To evaluate the effect of control environment on financial accountability in national public secondary schools in Kenya.
ii. To determine the effect of control activities on financial accountability in national public secondary schools in Kenya.
iii. To establish the effect of risk assessment on financial accountability in national public secondary schools in Kenya.
iv. To establish the effect of information and communication on financial accountability in national public secondary schools in Kenya.
v. Assess the effect of monitoring on financial accountability in national public secondary schools in Kenya.

1.4 Research Hypotheses

HO_1: There is no significant effect of control environment on financial accountability in national public secondary schools in Kenya.

HO_2: There is no significant effect of control activities on financial accountability in national public secondary schools in Kenya.

HO_3: There is no significant effect of risk assessment on financial accountability in national public secondary schools in Kenya.

HO_4: There is no significant effect of information and communication on financial accountability in national public secondary schools in Kenya.

HO_5: There is no significant effect of monitoring on financial accountability in national public secondary schools in Kenya.

1.5 Significance of the Study

Government and other policymakers will get additional information in formulating policies, and guidelines in relation to internal control measures that will enhance proper financial management of not only public secondary schools in Kenya but also other parastatals. This will ensure that funds allocated to public schools and other institutions are used for the intended purposes. This will go a long way in reducing cases of fraud and misappropriations of funds in public secondary schools and other public institutions which will enhance efficiency in parastatals and thus facilitate the effective provision of goods and services to the citizens.

The study will contribute to the existing literature in the area of financial management not only in public secondary schools but even in the private sector. Managers and principals of schools both public and private will get new ideas on how to improve financial management, especially how to improve integrity at the top, strengthen the control activities and environment and this will enhance efficient and effective financial management in all enterprises whether public or private. This,

therefore, will lead to improved provision of goods and services and increased profitability.

Stakeholders such as donors, non-governmental organizations, parents and other financiers will be informed so as to ensure that there is proper accountability of their finances invested in public secondary schools in Kenya. With transparency and proper use of finances, donors and other partners who had lost trust in the Kenyan government and stopped funding the education sector especially free primary education may start to do so again. This will enhance the achievement of higher returns for the funds invested and the dream of basic education for all may be achieved. Thus the gap between the rich and the poor may be reduced drastically in the long run.

New researchers will be able to get additional information on the current state of internal controls in public secondary schools, the weaknesses, strengths and suggested ways of improving them. The study will be particularly important to students carrying out research in accounting and finance on the role of internal controls on the prevention of fraud. This will help them in building their literature for the research. They will also be able to identify gaps that may not have been answered by this study which they can carry further research on.

1.6 Scope of the Study

The study focused on national public secondary schools in Kenya which were registered as at 2018 by Ministry of Education. National secondary as compared to other categories are significantly funded by the exchequer, besides, the financial operational activities of these institutions due to the number of students they admit. The study covered operations of these nationals as from 2015 to 2018 carried out during the period 2018 to 2019.

1.7 Limitations of the Study

Some principals, BOM chairs and Bursars were not willing to divulge information about their schools thus failed to fill questionnaires. Emails and constant reminders were made but still ignored by such respondents. Some respondents were filling the questionnaires in a hurry and thus cases of similar responses were noticed others left some questions unfilled. This reduced the response rate thus lowering the degree of objectivity of responses and results. However such responses were not used in final analysis.

Some schools were located in very remote areas thus accessibility became a problem. The study was countrywide thus convenience sampling could not be applied despite difficulty to access some schools. A longer time was therefore spent to collect the results since objectivity and accuracy was key to this research. The cost of obtaining data was also significantly increased due to travel and accommodation costs.

Financial statement of public secondary schools are not in a central website and not audited by auditor general. It was therefore difficult to obtain secondary data at a central point. Furthermore, the public secondary schools financial statements are not in any government website in soft copy. Each county Education office had therefore to be physically visited to obtain the hard copy data.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature related to the study which includes; theoretical framework, conceptual framework, general literature review, a critique of the present literature, a summary of literature reviewed and research gaps.

2.2 Theoretical Review

A theory is a collection of concepts about the reality which facilitate explaining and predicting a situation. Theories explain why and how things occur as they do. It predicts outcomes assuming situations remain the same (Asher, 2013). The study was structured on; Agency theory, Fraud triangle theory and Accountability theory.

2.2.1 Agency Theory

This theory was hypothesized by Jensen and Meckling (1976). It describes how best to establish associations in which one party defines the activity to be carried out but a different individual does the work. In this association, the principal employs an agent to do the work, or to accomplish a commission on behalf of the principal. The philosophy proposes that a firm's key goal is to make best use of the stockholders' resources (Jensen & Meckling, 1976).

Agency theory may be examined in twofold, one which is characterized by comprehensive information, when the behavior of the agent is witnessed and the activities and motivations are crystal clear. The answer to this situation is a behavior-based contract purchasing of services. The other is where there is factual asymmetry problem/ incomplete information that is, the principal has imperfect info concerning the level of energy and the conduct of the agent. In this circumstance, a static wage might generate an encouragement for the agent to evade efforts and responsibilities

since his payment will be the same notwithstanding the quality of work and energy used (Einstnhardt, 1989).

The theory positions that the organization is made up of owners of the economic resources and the agents who are the managers of the principal's resources. The agents do not at all times share in the Principals intentions and may perhaps at times act to promote their own benefits at the owner's expense This is further intensified by the separation of ownership and policy execution authority which is bestowed in the agents. The principal agency problem is the pursuit of self-centeredness by agents (David, 2012).

Principals devote their capital in a company, come up with approaches so that their wealth can be maximized. The proprietors consent to use the agent when they perceive the opportunity to maximize their own utility. This delegation allows agents to act unscrupulously at the expense of principals' prosperity. In corporations, the principals are the owners of a company, entrusting to the agent i.e. the administration of the company, to perform tasks on their behalf. Agency theory assumes both the principal and the agent are driven by egocentricity (Davies, 2004).

Agency theory recommends several control machineries to safeguard shareholders' returns and expedite principal-agent interest alignment. Some of those mechanisms are financial incentive schemes, such as lasting rewards for the agent tied to company performance, or the design of an appropriate authority structure for the company, such as increasing the number of external board members to perform audits and assessments (Stout, 2003).

To resolve the self-interest intention, the shareholders implement initiatives such as internal controls whose implementation protects the company's assets, sanction the accounting records and ensure that managers act in the shareholders' interests. The stake holder also endeavor to make even the managers' interest to theirs by having internal audits and external audits. The internal audit acts as a reaction mechanism to cure any flaws before they have an adverse effect on the firm's financial performance (Roberts, Terry & Styles, 2005).

The former also advises that to conclude whether the agent acts in the principal's interest, agency loss is used. Agency loss is the variance between the best conceivable outcome for the principal and the consequences of the actions of the agent. When an agent acts consistently with the principal's interests, agency loss is zero. The more an agent's acts diverge from the principal's benefits, the more agency loss upsurges. Agency cost is minimized when the principal and the agent share conjoint interests i.e. mutually the principal and the agent desire the same results, and when the principal is well-informed about the consequences of the agent's activities i.e. the principal is capable of evaluating whether their agent's activities aid in attaining the principal's greatest concern.

Financial control lessens agency costs with others asserting that firms have an economic inducement to report on internal control, even short of the requirements of the board of directors. Financial controls can be divided into; those that are universal i.e. entity-wide controls and those that are precise i.e. account-level controls.

If management has overriding control features in order to manage earnings, then one would presume to find more financial control imperfections related to overall controls than the specific controls (COSO, 2010).

Agency theory might not simply help to clarify the presence of in-house controls and internal audit in firms but can likewise help make clear some of the features of the internal audit department, for instance, its size, and the range of its activities, such as financial versus operational auditing. Agency theory can be engaged to test empirically whether cross-sectional variations between internal auditing practices reflect the different contracting relations originating from variances in an organizational form (Kamau & Rotich, 2015).

To resolve the delegation problem, the owners apply initiatives such as internal controls which when put into practice becomes safety net for the company's assets, approve the accounting records and safeguard the shareholder's interests. The investors also endeavor to bring into line the managers' interest to theirs by having

interior audits and exterior audits. The internal audit acts as a pointer mechanism to curing financial loss (Ndungu, 2013).

Agency theory is relevant to the management of finances of public secondary schools in Kenya since the BOM and PTAs are agents engaged by the government, parents and other stakeholders to manage the school on their behalf. The school principals, BOM and PTAs should, therefore, act in the best interest of the government, parents and other stakeholders and be accountable for all funds allocated to them so as to ensure that the purpose of education at all levels is achieved. Since the government is aware that school principals, BOMs and PTAs may have conflicting interests with those of the GOK, parents and other stakeholders, the GOK has put in place internal control systems as an agency cost to ensure finances in public secondary school are managed effectively. The internal control systems, therefore, should ensure that there is financial accountability so as to protect the interest of the government and other stakeholders.

2.2.2 Fraud Triangle Theory

This theory was advanced by Cressey (1953) when he was learning the behavior of fraudsters. From the study, he learnt that in the beginning, people accept responsibilities of trust in good faith but conditions make them break up the trust. He relates the three factors; pressure, opportunity, and rationalization, which must be prevailing for a transgression to take place. Cressey further stated that people violate this trust when they perceive of themselves as having a financial problem that is non-shareable and has knowledge or consciousness that this problem can be secretly resolved by abuse of the position of financial trust. The theory suggests that employees undertake fraudulent deeds when they have the chance to do so, when they are encouraged to do so, and when they can defend or rationalize their appointments (Cressey, 1953).

Each fraud culprit faces some force to commit unethical behavior i.e. the source of heat for the fire. These forces can either be financial or non-monetary pressures. This may not even be real but superficial. If the perpetrators believe that they were

pressurized, this belief could lead to fraud. Financial pressure is known as the greatest factor that leads an entity to engage in an evil action. Perceived pressure relates the factors that lead to unethical behaviors. There are three types of pressure which are personal, occupation stress, and outside pressure. The most common motivators of deceit are; individual gains, achieving instant economic goals, and hiding poor performance from investors and the capital markets (Kenyon & Tilton, 2006).

An opportunity has binary aspects i.e. the inherent susceptibility of the organization to manipulation and the institutions circumstances that possibly will permit a fraud to occur. For instance, if there is an insufficient job division, weak internal control, irregular audit, and issues similar to these, then the circumstances will be advantageous for the employee to commit fraud. An opportunity exists in the discernment and belief of the culprit. In most cases, the lesser the risk of being trapped, the more probable it is that treachery will take place. Even when the pressure is thrilling, economic fraud cannot transpire except if an opportunity is existent. Prospect is created by a fruitless control or governance structure that permits an individuals to commit organizational deceit. In the field of accounting, this is termed as internal control flaws. The notion of superficial chance offers that people will take advantage of the situations existing to them (Kiragu *et al.*, 2013).

Rationalization indicates that the wrongdoer must express some morally acceptable idea to him before engaging in dishonorable behavior. It refers to the justification and pretexts that immoral conduct is different from criminal activity. If an individual cannot protect dishonest actions, it is doubtful that he or she will be involved in fraud. The tendency to commit fraud depends on moral values as well as on their personal attitudes of individuals. A link between incentive/pressure and chance is created when an individual can give good reason for the dishonest behavior. Rationalization is a cover for fraudulent behavior because of a worker's lack of individual integrity or moral discernment (Levi, 2008).

Offering a good reason is not easy to notice, as it is hard to read the mind of the scam committer. Persons who commit fraud possess a specific mindset that allows them to

justify or defend their actions. Opening to commit fraud is associated to gaps that allow racket which can be promoted by the in-built exposure of the company's accounting procedures to manipulation and other circumstances within the company that may allow fraud to occur. The more internal controls a company has designed and executed, the less opportunity there will be for employees to commit fraud. It is important that the internal controls be effective and resourceful in order to gain the maximum benefits for the company (Kiragu *et al.*, 2013).

If the compulsion to commit fraud is great, individuals may be more expected to rationalize falsified actions. For instance, in an atmosphere of thrilling pressure to meet corporate economic goals, members of management and other staffs may settle that they have no choice but to resort to fraud to protect their own and the jobs of others, or just to keep the company flourishing. Nonetheless, if employees understand that violations of the company's ethical values will not be stomached and if they realize that senior management living by strict ethical standards and regularly signifying high uprightness, duplicitous conduct becomes problematic to give good reason for (COSO, 2010).

The commission also advocates for individual integrity which is critical in determining whether an individual will be predisposed to justify fraud. Averting opportunities, through internal controls is a vital part of the fraud triangle since as soon as an individual has recognized a justification and drive; they resolve to undertake the fraud once an opportunity presents itself. Committing fraud through the use of one's position and power in many occasions ensues when internal controls are feeble or do not exist, or where there is pitiable administration oversight (Manurung & Hadian, 2013). trusted persons may become trust violators when they conceive of themselves as having a monetary problem which is non-shareable, are aware this problem can be secretly fixed by abuse of the position of financial confidence, and are able to apply to their own conduct in that situation verbalizations which enable them to adjust their notions as trusted persons and users of the entrusted funds or property. Common justifications include making up for being poorly paid or replacing a bonus that was merited but not received. A crook may

persuade himself that he is only borrowing money from the business and will reimburse it back one day. Some embezzlers tell themselves that the firm doesn't require the cash or won't miss the assets. Others believe that the company warrants to have money embezzled because of wicked acts against employees (Ngigi & Kawira, 2015).

Fraud triangle theory is relevant in understanding why some principals and other BOM members in public secondary schools commit fraud and therefore fail to be accountable for funds allocated to them. The school is an organization like any other and some of the agents such as principals, bursars, teachers, and BOM members may be motivated by personal gains i.e. pressure to commit fraud, some may be fraudulent because the opportunity exists for committing fraud and they can easily get away with it because of weak internal controls. While some still may rationalize fraud by justifying how hard they work to make things right in the school and therefore deserve compensation. However, if an opportunity to commit fraud is reduced through tight internal controls then fraud will be significantly reduced and thus there will be increased accountability.

2.2.3 Accountability Theory

This theory was suggested by Tetlock and Lerner (1999). Accountability theory defines how the superficial need to shield one's actions to another party makes one to reflect and feel blamable for the process by which decisions and judgments have been reached. In turn, this apparent need to account for a decision-making process and outcome escalates the likelihood that one will reason intensely and systematically about one's routine manners (Tetlock & Lenner, 1999).

The former also puts forward that a worthwhile way to comprehend answerability is to distinguish between its two most prevalent uses as a virtue and as a mechanism. As a benefit, liability is seen as a quality in which a person shows readiness to accept responsibility, a desired trait in public officers, government agencies, or firms, it is therefore a helpful feature of an entity. As a machinery, it is seen as a process in which a person takes a potential commitment to clarify his or her actions to another

party who has the right to pass verdict on the actions as well as to question the person to latent penalties for his or her actions.

They suggest that a number of devices may upturn liability perceptions these include; the presence of another person, identifiability, and expectation of evaluation. Recent research has shown that information technology design artifacts of systems can influence the four core components of accountability theory; identifiability, the expectation of evaluation, awareness of monitoring, and social presence. This improves employee's accountability toward organizational system security without disruptive interventions or training (Trevor, Anderson & Didier, 2016).

Identifiability is a person's understanding that his outputs could be linked to him and thus reveals his/her true identity. The expectation of assessment is the belief that one's performance will be assessed by another person according to some normative ground rules and with some implicit consequences. Awareness of monitoring is a user's state of active cognition that his/her system-related work is monitored. Social presence is the awareness of other users in the system (Wainaina, 2011).

Accountability theory is relevant to this study since it will assist in understanding ways through which accountability can be enhanced through internal controls. The perceived need to account for a decision-making process and outcome increases the likelihood that one will think deeply and systematically about their actions this is, therefore, a virtue that if adopted by principals and other BOM members, then there shall be a high degree of answerability. The expectation of evaluation, awareness of monitoring, and social presence through internal controls mean that the principals and BOM are aware that the government will verify their financial statements through external auditing and give audit reports for which lack of accountability will be punishable. The fact that other stakeholders are interested in monitoring financial accountability is the social presence, which enhances transparency and reduces fraud.

2.3 Conceptual Framework

This section conceptualizes the components of internal control systems i.e control environment,control activities, risk assesment,monitoring,information/communication and financial accoutability in figure 2.1.

Independent Variable **Dependent Variable**

Internal Control Systems

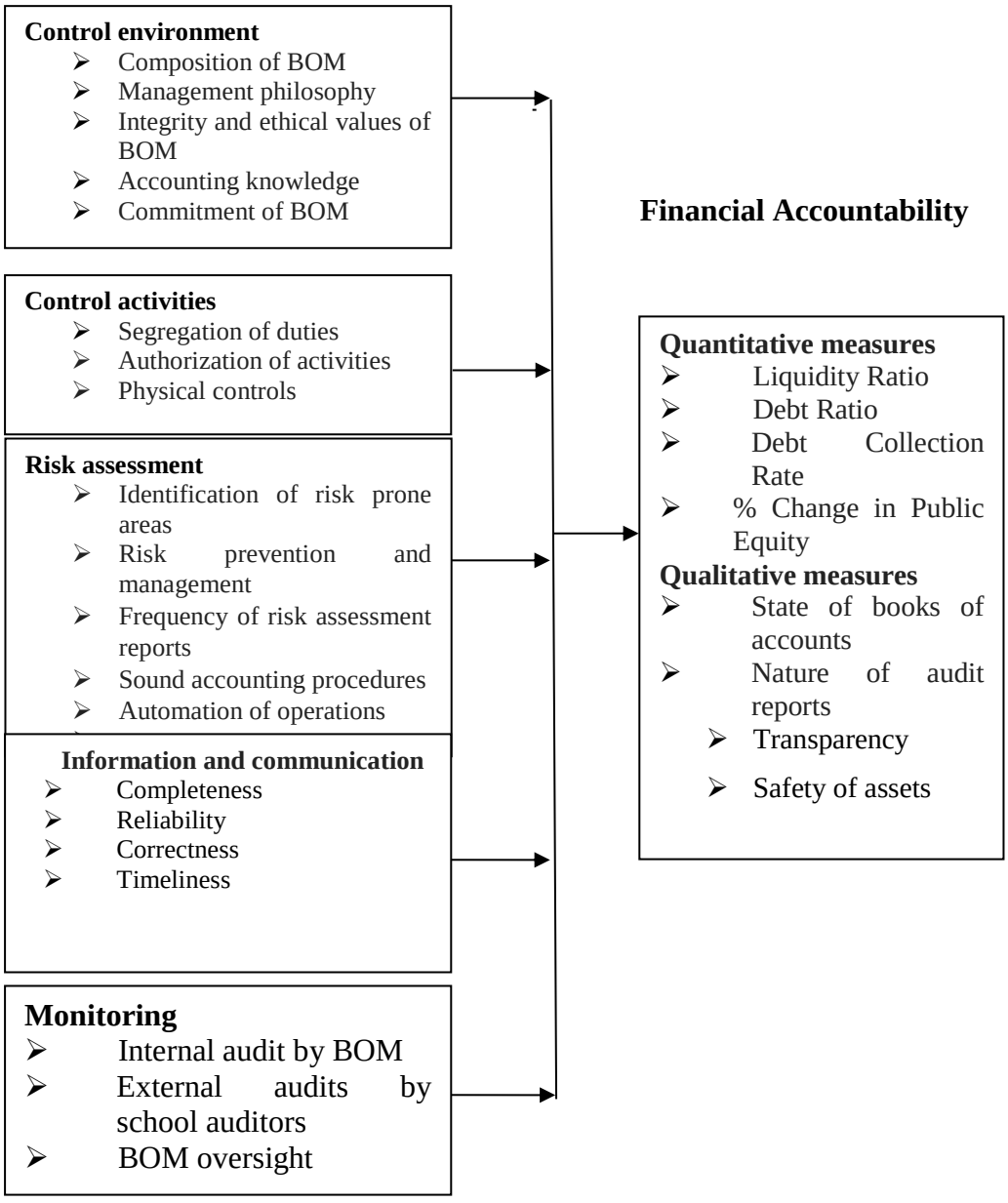


Figure 2.1: Conceptual framework

2.3.1 Control Environment

The control environment is considered as the tone at the top of an institution, influencing the perception of its employees. It is the attitude of an organization and

the way it operates. It concerns the creation of an atmosphere in which people can conduct their activities and carry out their control tasks effectively. The control environment is the set of principles, processes, and structures that provide the basis for carrying out internal control across the organization. The board of directors and senior management create the tone at the top regarding the importance of internal control including expected standards of conduct. Management strengthens expectations at the various levels of the organization (Oduol, 2011).

The ethical environment of an organization embraces aspects of higher management's character in achieving organizational objectives, substantial judgments, and managing styles. This component is the underpinning for all other components of internal control, providing both discipline and structure to the organization. Moral business practices, management philosophy and a sense of business integrity all play key parts in the control environment element (COSO, 2013).

Control environment covers the uprightness and moral values of the organization; the limits enabling the board of directors to carry out its governance oversight responsibilities, organizational structure and assignment of authority and responsibility, the process for attracting, developing and holding competent individuals and the rigor around performance measures, inducements, and payments to drive answerability for performance (Davis, Allen & Hayes , 2014).

2.3.2 Control Activities

Control activities are the actions established through guidelines and procedures that help ensure that management’s directions to mitigate risks to the achievement of objectives are carried out. Control activities are accomplished at all levels of the entity, at various stages within business processes, and over the technology environment. They may be deterrent or detective in nature and may encompass a range of manual and automated activities such as authorizations and approvals, verifications, reconciliations, and business performance reviews. Segregation of duties is typically built into the selection and development of control activities.

Where segregation of duties is not practical, management selects and develops alternative control activities (Garcia, 2004).

Control activities are the policies and procedures that assist in ensuring that management directives are successfully implemented. They provide the means to address the various risks that may hinder the achievement of the organization's objectives. In essence, control activities are established in response to apparent risks. Control activities as policies and procedures that help ensure that management directives are carried out. They help ensure that necessary activities are taken to address risks to the achievements of the entity's objectives. Control activities occur throughout the organization at all levels and all functions. Control activities include a range of activities; authorization, verifications, reconciliations, reviews of operating performance security of assets and segregation of duties (Gbegi, Adebisi & Makurdi, 2015).

2.3.3 Risk Assessment

Risk assessment involves a dynamic and iterative process for ascertaining and evaluating hazards to the accomplishment of goals. Risks to the achievement of these objectives from across the entity are considered relative to conventional risk tolerances. Thus, risk assessment forms the basis for determining how risks will be managed. A prerequisite to risk assessment is the formation of objectives, linked at diverse levels of the entity (COSO, 2010).

Management specifies objectives within categories relating to operations, reporting, and compliance with sufficient clarity to be able to identify and analyze risks to those objectives. Management should also reflect on the appropriateness of the objectives for the entity. A risk assessment also requires management to consider the effect of possible variations in the external atmosphere and within its own business model that may lessen internal control unsuccessfulness (COSO, 2010).

Perils are evaluated in order to determine the possibility of an event happening, the impact, and risk acceptance level. Once recognized the risks are then classified as

high, medium and low. Based on the precision of the valuation, a risk tolerance level can then be determined. In order to determine whether risk management is effective, relevant risk information should be captured and communicated in a well-timed manner across the organization, permitting staff, management, and the board to carry out their duties (Transparency International Kenya, 2014).

2.3.4 Information and Communication

Communication is the recurrent, iterative course of providing, distribution, and attaining necessary information. It is the means by which information is dispersed all over the organization, flowing up, down, and across the entity. It enables employees to receive a clear message from senior management that control tasks must be taken seriously. External communiqué is twofold: it enables inbound messages of relevant external information and offers information to outside parties in reaction to requirements and prospects (COSO, 2013).

The BOM must ensure that ongoing assessments, separate appraisals, or some blend of the two are used to decide whether each of the five constituents of internal control, including controls to affect the principles within each component, is present and functioning. Continuous assessments, built into business processes at different levels of the entity, provide timely information. Separate evaluations, conducted periodically, will vary in scope and regularity depending on assessment of risks, efficiency of ongoing evaluations, and other management deliberations. Results are assessed against criteria established by regulators, bodies that set standards, or management and the board of directors, and deficiencies are communicated to management and the board of directors as appropriate (Jabreen, 2008).

The significance of information to the management of an organization cannot be over-emphasized. Pertinent information can be sourced both internally and externally and there could be new requirements by regulatory bodies on financial reporting or information to support the operative of internal control. The management, therefore, has to make mindful efforts to obtain information on their internal control responsibilities (Transparency International Kenya, 2014).

The approaches that can be taken to achieve the objective of this principle include creating an inventory of information requirements, obtaining information from external sources, obtaining information from non-finance management, creating and safeguarding information repositories, using an application to process data into information, enhancing information quality through a data governance program and identifying, securing, and retaining financial data and information. It is not sufficient to obtain the required information on management's objectives and responsibilities on internal control, such information must be properly communicated and cascaded to the appropriate persons. It has to be carried out in the right manner and at the appropriate time. Also, the use of separate reporting lines would be required for a whistle-blowing program to function optimally (COSO, 2013).

The framework sanctions the following approaches to achieve this; communicating information regarding external financial reporting goals and internal control, communicating internal control tasks, developing guidelines for communication to the board of directors, reviewing financial and internal control information with the board of directors, communicating a whistle-blower program to company personnel, communicating through alternative reporting networks and establishing cross-functional and multidirectional internal control communication processes and forums (Ribstein, 2002).

This principle states that the entity's external parties have to be involved in matters of internal control since financial reporting has to be communicated to all interested parties or those expected to possess them. It also encourages the management of the entity to obtain information on its internal control through external sources including carrying out surveys. Communicating information to relevant eternal parties, obtaining information from outside sources, graphing external parties, communicating the whistle-blower program to outside parties and reviewing external audit communications are the methodologies recommended by the Framework (COSO, 2010).

In a good organization, an information system is essential to guide its operation process. Information systems produce reports, containing operational financial and

compliance-related information that makes it possible to run and control an organization. It should consist of an accounting information system to ensure that the accounting process is valid and reliable. Management should ensure there are adequate means of communicating with and obtaining evidence from, external patrons that may have a significant impression on the agency achieving its goals. Effective information technology management is critical to achieving useful, reliable, and continuous recording and communication of information. Moreover, the system should be communicated to everyone in the organization (Lister, 2007).

2.3.5 Monitoring of activities

Monitoring is the procedure of weighing the worth of a system's performance over time. Staff should assess the various systems of internal control and updates on a continuous basis, any revealed shortages should be addressed immediately and added to the whole systems of internal control. Monitoring of internal control should embrace procedures and techniques so that the results of audits and other reviews are quickly resolved. Monitoring activities may be ongoing or may be separate valuations but is vital given the complex and dynamic environments faced by most organizations (Transparency International Kenya, 2014).

Monitoring ensures that structures are executing activities as intended. It is accomplished through regular or periodic assessments. These estimates determine whether other constituents of internal control keep on functioning as envisioned. In addition, these estimates facilitate the documentation of internal control deficiencies and transfer them to suitable administrators responsible for enchanting corrective action. More serious deficiencies are communicated to upper levels of administration and to the board of directors when suitable (Moraa, 2015).

The former also suggests that since corporate risks change over time, the internal control system needs to be capable of determining that the controls in place are appropriate and effective in addressing new risks. A monitoring process must be capable of addressing the need for amendments in the strategy of controls based on changing risk. Functioning internal control systems must be capable of holding risks

at a satisfactory level to ensure effective and efficient operations on a continuing basis.

Monitoring accomplishments include calculation of controls and reporting the outcomes of the assessment together with any required remedial action. An operational monitoring groundwork is dependent on instituting an effective attitude at the top of the organization and a high primacy on effective internal controls. This requires that the top management team and the board of directors be involved in the assessment process. The monitoring of internal control is hooked on the selection and utilization of assessors which have a solid baseline appreciative of internal control. They also need to have suitable competences, wealth and power to carry out a meaningful assessment of internal control stepladders (Carslaw, Richard & Mills, 2007).

Appraisers need to be both knowledgeable and self-directed in addition to having an in-depth knowledge of the internal control system and its interrelated practices. It is essential that evaluators understand how the controls should operate and what constitutes a control insufficiency. Impartiality is determined based on an evaluator's ability to assess the internal control system without any concern for personal consequences resulting from the assessment. There should be no vested interest in the handling of the results of the evaluation either for personal benefit or self-preservation. A monitoring underpinning requires that the management team and the board of directors will ensure impartiality and select well-informed evaluators. This sets the tone at the top and provides for a rock-solid control environment to ensure the effectiveness of the other four components of the COSO framework (Deis & Giroux, 2009).

If the tone at the top is weak and ineffective, then any monitoring effort is destined for failure. Every aspect and constituent of internal control is dependent on the attitude and beliefs communicated and conveyed by the management team and the board. If there is a negative attitude toward monitoring, this will be reflected in the attitudes of employees and how they perform the monitoring process. Management and the board set the character at the top and it is important for them to walk the talk

and not just talk the talk. The board is accountable for governance and oversight in its role of providing guidance to the management team. Boards of publicly traded companies have legal responsibilities that were enhanced by the Sarbanes-Oxley Act of 2002. This has translated into more competent boards of both public and private companies (Friedberg & Lutrin, 2010).

2.3.6 Financial Accountability

Accountability is the exercise whereby public service organizations and individuals within them are held answerable for their outcomes and activities, including their stewardship. Accountability ensures dependable accounting and financial reporting, and distribution of resources in an efficient manner. This assists in achieving the primary goal of government which is to distribute limited capital assets to the production of those goods and services for which demand is great. Unsatisfactory accounting and reporting, on the other hand, conceal waste and inefficiency, thereby preventing proficient allocation of economic resources (Andrew & Sayag, 2010).

Internal control reduces integrity gap that may be due to unpremeditated mistakes, lack of knowledge of accounting principles, unintentional bias, deliberate falsification and parting from generally accepted accounting principles. Internal control give emphasis to the significance of transparency as an essential feature of public sector accountability. Internal control fulfills accountability obligations. It is the duty imposed on a person who holds command or authority or is in a position of trust to act for and on behalf of another person to take responsibility for his action and to render an account of stewardship whenever it is indispensable to do so (COSO, 2010).

Accountability edges on not undermining the long-held public-service standards in the quest of specified standards of efficiency and effectiveness. Whether on performance indicators, strategies, financial resources, management information systems or value for money audits to give a greater profile to the economies of public sector delivery in order to restore trust in government. It is compared to enterprise governance when it clarifies it as the set of tasks and practices exercised

by the board and executive management with the goal of providing calculated path, ensuring that objectives are achieved, establishing that jeopardies are managed suitably and authenticating that the organizations resources are used meticulously (Institute of Internal Auditors, 2009).

Innovativeness control institutes the entire answerability background of the organization. There are two scopes of innovativeness authority: conformance and performance. Conformance covers matters such as board structures and roles, executive compensation, and compliance with the guidelines. The conformance dimension focuses on accountability and guarantee while the performance aspect focuses on strategy and value creation. Accountability has the features of transparency, proficiency, value and good service delivery where achievements are below agreed levels, the causes should be established (Goodwin, 2014).

There are five principles of effective accountability; clear roles, clear tasks, clear performance forecasts of the objectives being trailed, well-adjusted expectations and balanced capacities. The performance prospects need to be clearly linked to and in balance with the capacity for trustworthy reporting. A credible review and feedback on the performance achieved should be carried out by the accounting parties. Accountability is realized by developing, upholding and making accessible dependable and pertinent financial and non-financial information and by means of fair revelation of that information in well-timed reports to internal as well as external stakeholders. Non-financial information may relate to the economy, efficiency, and effectiveness of strategies and processes, and to internal control and its effectiveness (Friedberg & Lutrin, 2010).

2.4 Empirical Literature Review

The constructs of internal control systems were reviewed in relation to financial accountability.

2.4.1 Control Environment and Financial Accountability

The control environment sets the attitude of an organization and influences the control cognizance of its people. It is the foundation for all other constituents of internal control, providing discipline and structure. Control environment factors include the integrity, ethical values, and proficiency of the entity's people, management's philosophy and operating style, the way management dispenses power and responsibility, put in order and grows its people, and the consideration and path provided by the board of directors (COSO, 2010).

(Mawanda, 2008) Carried out a study which was aimed at finding out the relationship between internal control systems and financial performance in organizations of higher learning in Uganda: A Case of Uganda Martyrs University. The constructs of internal controls Control studied included; control Environment, Internal Audit, and Control Activities while financial performance was assessed by Liquidness, accountability, and trust worthy reporting. The study used Survey, Correlation and Case study as Research Designs.

Primary statistics was gathered by means of questionnaires and conferences while secondary data was collected through evaluation of accessible documents and financial records. Information was analyzed using the Statistical Package for Social Scientists. The study established a noteworthy relationship between the internal control system and financial performance. The researcher, consequently, suggested competence profiling in the internal audit, formation, and management of information system to permit all parties within the organization to spontaneously access and use the authorized info.

(Nyakarimi & Karwirwa, 2015) Studied the relationship between internal control systems and fraud control in deposit-taking financial institutions. Descriptive research designs and stratified random selection was employed. A model of 92 respondents was carefully chosen from a populace of 120 respondents. Primary data was obtained via surveys from the operations managers and supervisors. Information was explored using the Statistical Package for Social Scientists (SPSS). The study

recognized a weighty relationship between each of the constructs of internal control systems (ICS) and fraud control. ICS was investigated based on its component which includes; Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring.

(Widyaningsih, 2015) Carried out a study entitled "The Influence of Internal Control Structures on the Financial Accountability of Basic Schools in Bandung, Indonesia". Convenience selection was used on a populace section of 168 respondents. Path investigation was used to examine the effect of internal control on financial liability. The outcome displayed that concurrently, control environment, risk assessment, control activity, information and communication, and supervision considerably have an impact financial accountability.

(Ndembu, 2015) Carried out a study with the objective of establishing the role of internal controls on the economic performance of manufacturing firms in Nairobi Kenya. Descriptive and inferential statistics exploration was done using measures of central tendency and Pearson correlation analysis. Secondary data comprised the manufacturing firm's yearly reports for the period 2013 to 2014. Data was analyzed using multiple regression analysis. The results of the study displayed that there is a positive and weighty association between control environment, risk assessment, information and communication, and control activities, while monitoring presented a negative relationship with yield on assets. The study proposes that all manufacturing firms in Kenya must implement an internal control system.

(Mangoensetono, 2012), Researched on the influence of the control environment in inhibiting fraud". Qualitative research design was used to obtain information from a population of four corporations in the Netherlands who agreed to play a part. Data was gathered through survey and conference. Two questionnaires were prepared: one for administration concerning the instituting integrity and ethical values, their style of governance and the presence of the board of directors and its participation and structure and one for employees for an outlook about the established actions, policies, and processes of management.

Outcomes from Mangoensetono's study showed that ethical activities could lead to a reduction in fraud. Further results showed that there is a link between leadership style and building an ethical climate and that the board of director's participation in authority and oversight is significantly associated with fraud prevention. A whistleblower policy was found to be effective only when disciplinary action is taken by management on reported cases.

Mangoensetono exposed that more fraud was established to occur in concerns where, not all that commits a fraud was disciplined in the same way by management. It was proven that if no counteractive action was taken particularly because fraud has been committed by employees on a higher level, then it disheartened many employees from reporting falsified cases. Further results show that more fraud occurred at one company where a less atmosphere of mutual trust and open communication be existent between management and employees compared to the other companies. The study, therefore, concludes that deceitful acts can be significantly reduced by setting the right character at the top.

(Zauwiyah & Mariati, 2008) studied control environment, employee fraud, and counterproductive workplace behavior a sample of 433 workers in Malaysia exploratory research design was used. Data was gathered via a self-administered questionnaire survey. The analysis comprised of frequency analysis, factor analysis, and regression. The findings point out that the control environment had more influence on organizational members' behaviors than predominant codes of conduct and that fraud and manipulation were a consequence of the frail control environment. They, therefore, endorse that an organization must put in place an information system that can detect fraudulent behaviors and at the same time advance the right control environment that can avert deceitful actions.

(Nyakundi *et al*, 2015) Assessed the effect of accounting practices on the management of finances in public secondary schools in Kisii central district. The study employed a survey design to gather data from 45 Principals and 45 Bursars from Kisii central district. Closed-ended questionnaires were used to gather data

which was later analyzed via frequency distributions, weighted means, Pearson's correlation coefficient, and regression analysis.

The study discovered that the level of management of funds in public secondary schools is positively interrelated to the degree of the use of accounting Practices. Though many parents complained of misuse of school, funds, no action was taken against corrupt or incompetent head teachers. The result was that most finances raised from parents did not, support in any way to advance the quality of education or students well-being. It was established that an annual turnover of ten million Kenyan shillings was being managed by account clerks and some head teachers who had little knowledge and training in financial management and yet they were charged with the responsibility of planning and implementing expensive projects in schools. These projects were found to breakdown due to underprivileged supervision and embezzlement of funds. The study concluded that accounting practices have a positive effect on the management of funds in public secondary schools and recommends the use of such accounting practices to a very large magnitude and endorses the compulsory use of accounting practices so as to progress the general management of funds in public secondary schools in Kenya.

(Oduol, 2011) Analyzed ethical issues of secondary school leaders in Kenya. She employed case study research design to assemble data for three months from 40 respondents in the former Nyanza province. The respondents were identified by use of purposive sampling which included; school principals, board members, heads of sections, school bursars and parents signifying stakeholders affected by leaders' decisions.

Analysis was done by use of social constructivist theoretical framework and interpretation and drawing of conclusions was based on both Eurocentric and Afrocentric paradigms, the study established that there were puzzling moral principles and dissimilar significances such as some district school auditors who call for bribes instead of giving direction on the school accounting and financial management process. Some leaders were seen to encourage their own wellbeing e.g. some school board members sought for special treatment such as tenders to supply

goods, and this included their impartiality in monitoring efficient management of finance as they were also a partner in crime in the embezzlements and fraud cases.

(Osiri, 2012) Investigated factors that lead to financial malpractice and embezzlement in public secondary schools in Gucha district. Survey was employed to collect statistics from 5 boarding schools, 37-day schools, 42 head teachers, 42 Bursars, 42 heads of departments, 42 BOG chairpersons, 337 teachers, and purposive selection was used to select 10 quality assurance officers. Quantifiable data collected by use of questionnaires and observation checklist. Data was analyzed using descriptive statistics whereby data was coded and tabularized after which means; frequency counts and percentages were worked out.

The study also established that the bookkeeping officers in some schools as well as the principal were not suitably competent for their duties. In some small schools, the storekeeper doubled over up as the accounts clerks without any appropriate experiences which is a loophole that was found to boost the misappropriations. The study also found out that many principals lacked adequate skills to carry out internal controls. The training through the education staff institute was not enough to prepare the principals with essential expertise as it was not able to take all managers for training and the way it was done was arbitrary.

The study also found out that most BOM members were incompetent on financial matters and so did not understand financial reports presented and did not bother to verify expenditures thus they made poorly informed decisions. The majority were retired persons from public service some of whom were hungry for money and were only interested in the allowances. The outcomes also indicated that some principals had stayed too long in their stations and had made the schools their home environment and thus overlooked professional ways of running the school. Many did not involve teachers when financial decisions are to be made and this made teachers to use any small chance they get to misuse school finances.

In addition, the study established that some principals were promoted through fraudulent means and thus were strong-minded to please their godfathers through

financial favors. They assert that even elaborate financial control measures can be put in place, the basic trust of the individual principal as the chief executive officer of the institutions remains an important factor in financial management the principals' ethical values, management style and way of allocating and delegating duties are key ineffective financial management and deterrence of fraud.

(Ochieng, 2013) Evaluated challenges facing principals in managing funds in Public Secondary Schools in Kisumu East District. Survey d was employed to collect data from 41 public secondary schools the respondents included; principals, deputy head teachers, accounting personnel, and the district schools auditor. Data collection tools used included; a questionnaire for head teachers, deputy head teachers and bursars/ account clerks, an observation tool for head teachers and an interview schedule for the district schools' auditor. A total of 93 respondents completed and returned the questionnaires.

An observation instrument was used in 32 public secondary schools while the interview schedule was used on the District schools' auditor, to approve the data collected. Quantitative data collected through questionnaire and observation worksheet were scrutinized using descriptive statistics in the form of means, frequency counts, percentages and correlation. Qualitative data collected through questionnaires and interviews were prearranged into themes and sub-themes as they emerged in a continuous process.

The findings of the study showed that many problems facing heads of schools in financial management in public secondary schools were as a result of poor control atmosphere which were related to; doubling up of roles, low salaries of bursars and accounts clerks, incompetent bursars/accounts clerks and storekeepers, inept procurement committee, insufficient auditing knowledge by the head teacher, asymmetrical auditing of schools by district auditors and inability to prepare books of accounts up to final accounts. This, therefore, led to extravagance and fraudulent activities that may go unnoticed by the principle, the BOM and PTAs due to lack of technical skills.

2.4.2 Control Activities and Financial Accountability

(Mwakimasinde, Odhiambo & Byaruhanga, 2014) designed to explore the weight of internal control systems on the profitability of sugarcane out grower companies in Kenya. They adopted a descriptive correlational survey research design. Primary facts was collected by use questionnaires. Secondary data was extracted from annual reports, publications, and document analysis. Statistical package for social scientists (SPSS) computer software version 19.0 was used to analyze data. The study established a positive significant effect of the internal control system on the financial performance (R = 0.682), and R square 0.428 thus internal control components accounts for 42.8% variance in performance.

(Kahavizakiriza, Kisiangani & Wanyonyi, 2015) examined financial management in public secondary schools in Lurambi Sub-County. The study used a target population of seventeen principals, seventeen bursars, one hundred and thirty-six H.O.Ds and seventeen B.O.G representatives. The sample population was selected from twelve public secondary schools in Lurambi Sub-county through simple random sampling within the groups of principals, school bursars, H.O.Ds, representatives of B.O.G. Descriptive survey design helped to establish and describe the knowledge, skills, and attitudes principals of public secondary schools require for effective performance.

Consistency of the tools was calculated using Cronbach's Alpha. Descriptive statistics was used to evaluate data. The results revealed that; budget approval was primarily carried out by B.O.Ms while the government did not participate on this. They further discovered that schools did not involve all the people in the school system in a budget building. The budgets produced were, therefore, the work of the principal and the bursar and therefore this could raise opportunities for collusion and corruption.

(Nyakundi *et al.,* 2015)Assessed the effect of accounting practices on the management of funds in public secondary schools in Kisii central district. Survey design employed using 90 respondents, consisting of 45 Principals and 45 Bursars.

Questionnaires were used to collect primary quantitative data. Pearson's product moment correlation coefficient was used to test the reliability of the questionnaire items and a coefficient of 0.73 was obtained and considered adequate enough. Descriptive statistics such as weighted mean, percentages and frequency distributions were used to analyze data.

Regression analysis was used to establish the relationship between the extent of the use of accounting practices and the level of management of funds in public secondary schools. The findings reveal that financial statements prepared do not reflect a true and fair view of the financial position of public secondary schools.

The results also established that allocation of funds but minimal measures were put in place to ensure that the projects were completed. Many half-finished projects were established to be due to due to misappropriations and fraud. Control activities such as auditing were not carried out effectively and therefore many resources might have been embezzled through fraud making the accountants/bursars to cook/force the statements to match the records.

(Kaguri, 2014) Wanted to know financial management challenges facing implementation of free day secondary education in Imenti North. The study employed a descriptive research design. The study targeted 26 head teachers/principals in these day schools, 390 BOM members, and 311 PTA members, The DEO Imenti North District and the two QASOs. Data was collected through questionnaires. Quantitative data was analyzed through the creation of simple tables that showed the frequency of occurrence through establishing statistical relationships between variables to complex statistical modeling of both categorical and quantifiable data. Qualitative data was analyzed through the development of data categories, identifying relationships and testing hypotheses to produce well-grounded conclusions.

Results of data analysis were presented in frequency distribution tables, bar graphs, and pie charts. This study found out that financial planning/ budgeting was often done in either an insensitive fashion or not done at all with negligible participation of

education stakeholders in the budgetary process. Financial reports were poorly prepared while Auditing was done in an arbitrary way. They, therefore, recommended that for financial management to be successful, then planning and controlling should be interdependently linked. They further recommended that there was a need for improvement of policy tracking of resources to ensure proper, adequate and proper utilization of resources budgeted for education.

(Otieno, Atieno & Yambo, 2014) established the effects of financial budgeting in the management of public secondary schools in Uriri Sub-county. They used survey research design and a targeted population of all head teachers, all PTA chairpersons and all BOM members in the 18 public secondary schools. Nevertheless purposive sampling was employed to sample 16 principals, 16 PTA chairpersons, and 64 BOM members. Data was collected by the use of questionnaires and interview guides. Four of the schools outside the study area were used in piloting the study to act as a pre-test to the instruments of data collection to ensure their reliability.

Face validity of the tools was determined by three experts in the Subdivision of Educational Leadership and Policy Studies, Rongo University College and the impressions on the instruments improved based on the supervisors' advice before using them for data collection. Quantitative data was analyzed by the use of descriptive statistics in the form of frequency counts, percentages. Statistical Package for Social Science (SPSS) software was used for data analysis. Findings revealed that there was a problem in collaboration among the members caused by the lack of teamwork and financial knowledge thus budgeting was unsuitable and irregularly done. They, therefore, recommended that the BOM members should be involved in regular financial training and budgeting for effectiveness and efficiency in budgeting and to overcome the ever-increasing economic challenges.

(Osiri, 2012) determinedfactors contributing to financial malpractice and embezzlement in Public Secondary Schools in Gucha District. They employed descriptive survey design and collected data from 5 boarding schools, 37-day schools, 42 head teachers, 42 Bursars, 42 heads of departments, 42 BOG chairpersons, 337 teachers, and purposive cross section was used to select 10 quality

assurance officers. The study found out that the way the budgetary process in most schools in Gucha district was done was haphazard. There was a lack of participation of teachers in the budgetary process, and their opinions on priority areas were not sought.

The budget committee was in place headed by the deputy principal with other HODs as participants but they were not active. Tendering was done by the principal and his or her associates and did not pass through the tender committee. The tender committee was therefore just a rubber stamp. Two or more projects were started concurrently without proper forecasting. In some cases, a school project run concurrently with the principal's project and this was a reason that made some projects to stall. In some schools, there was no segregation of duties and the typist or storekeeper doubled as the accounts clerks.

Most schools were short of qualified storekeepers to safeguard the loss of school property. Some dealings were carried out minus any approval in the pretext of an emergency. In some schools, the principal was the authorizing officer, accounting officer as well as the procuring officer. Further, in some of the public secondary schools, BOM did not meet regularly to deliberate financial issues of the schools but only when the principal called the BOM meeting thus, the principal was in control of almost all cash transactions and the BOM is a mere rubber stamp. Some BOM is not very keen about their roles and this created room for cash misallocation by the principals.

2.4.3 Risk Assessments and Financial Accountability

According to Transparency International Kenya, risks are evaluated in order to define the probability of an event taking place, the effect, and risk acceptance level. Once identified the risks are then classified as high, medium and low. Based on the accuracy of the valuation, the risk forbearance level can then be determined. In order to determine whether risk management is effective, relevant risk information should be captured and communicated in a timely manner across the organization, enabling staffs, management and the board to carry out their everyday jobs they observed that

the Kenyan education system was burdened with financial management risks that compromise the quality of education (Transparency International Kenya, 2014).

(Mugenda, Momanyi & Naibei, 2012) wanted to gain knowledge repercussions of hazard management practices on the financial performance of sugar firms in Kenya. Experimental research design and survey were used. Pearson Product moment correlation coefficients (r) was used to determine the interplay of risk management tendencies and profitability of Sugar manufacturing firms. The results of the study point out a positive relationship between risk management practices and performance (r =0.67.) The researchers, therefore, recommended the adoption of an integrative risk management perspective that considers the pursuit of upside potential alongside countering of downside losses in order to minimize the negative impact of risk on returns.

(Mwachiro, 2013) Purposed to establish the Effects of Internal Controls on Revenue Collection: A Case of Kenya Revenue Authority. Both qualitative and quantitative approaches. Primary data was collected on a populace of 38 respondents using questionnaires. Verdicts showed that revealed the five components of the control environment, risk assessment, control activities, information and communication, and monitoring must be are positively related to revenue collection hence financial performance.

(Otieno & Nyagechi, 2013) examined the usefulness of internal control processes on management competence of free primary education finances in Kisii Central District. The study used a descriptive survey research design and targeted 267 respondents comprising of 132 head teachers, 132 SMCs chairpersons and 3 District Education staff in Kisii Central District, Kisii County, from which a random sample of 117 was taken for study. Data was analyzed using descriptive statistics.

The findings of the study uncovered that the use of internal control procedures is effective in the effective management of funds in schools. The study further established that electronic processes were rarely used as an internal control procedure in public primary schools; staff accounting skills were truncated in public

primary schools and audit staff was still insufficient. This suppressed the collection of audit evidence for purposes of early detection and prevention of fraud. The study, therefore, endorses embracing improved internal control procedures in their resolve to competent management.

(Transparency International Kenya, 2014)Investigated corruption risks in the education sector in Turkana County. This assessment was aimed at pinpointing areas of potential resource leakages and formulate appropriate strategies to remedy this situation. A total of 16 schools were indiscriminately sampled from Turkana Central, Loima and Turkana West. Qualitative methods were adopted in the evaluation in a bid to get quick understanding, judgments, and practices as re-counted by the respondents in primary schools. Specifically, qualitative methods to data collection employed included; formal and informal interviews, focus group discussions and use of proxies.

The study results exposed that many schools did not have procurement committees in place and there was a conflict of roles by the School Management Committees since they are the driving power in procurement instead of playing an oversight role. There were efforts by some schools to securing school assets. However, an important asset such as land was not safeguarded in some schools. Some schools had tagged textbooks but not much had been done with other assets such as furniture. The financial management practices were not watertight which therefore increases the risk of the leakage of education resources.

The study also established cracks in the selection and capability of school administration committees to perform their mandate. It was outstanding that education officers who are intended to supervise such elections had to be facilitated by the school head teachers to travel to the schools yet there was no budget for this activity. This was found to be deception risk as such enablement was provided illegitimately. The bulk of schools did not make annual budgets and instead lived on short term activity based budgets.

Parents had been making both financial and in-kind contribution which in many occasions were not accurately acknowledged and accounted for. The school audit did not cover all schools due to inadequate capacity. This was a big risk that could lead to continued financial malpractices as not all perpetrators may be concealed. An endorsement was therefore made to guarantee that principals, particularly those recently promoted, are trained on judicious financial management. Consciousness building should be done among parents to securing and ensure acknowledgment and monitoring of any money paid and the audit process should be strengthened so that it is done objectively, consistently and regularly.

2.4.4 Information/Communication and Financial Accountability

(Makewa *et al*, 2013) studied importance of ICT in secondary school administration in rural southern Kenya. The study used descriptive-comparative research design to obtain information from managers who are involved in the day to day running of secondary school duties such as the principal, deputy principal, and heads of departments and other teachers. A sample of 12 secondary schools out of 35 in the Kuria Districts was used in this study. Data was collected using questionnaires. The t-test was used to establish whether there was any weighty dissimilarity in observations while a Pearson product-moment correlation coefficient was used to discover whether there was any significant connection between educators' perceptions of the significance and extent of ICT use in secondary school administration.

They established a correlation connection (r) was used with a correlation coefficient ranging from -1.0 to +1.0, which provided the intensity and direction whereby the relationship between two variables was determined without influencing the variables. The study established that ICT has an overriding place in education and not only applies to the teaching and learning process but also in the financial management of the school. Information systems deliver tools that contribute to the enhanced accomplishment of administrative work. Using an information system in school administration provides for data integration where data is derived from several information sources, for decision making as well as for management.

They also established that the implementation of ICT facilitates the effectiveness of administrative services and reinforces communication channels within the school community. They also observed that ICT is being increasingly implemented in schools considering the valuable benefits that school units have gained by using advanced technological tools in their everyday work. However, it is important to create the environment necessary for the successful and efficient adoption of new technologies in the classroom as well as in administration.

(Munene, 2013)Assessed the effects of internal controls on the financial performance of technical training institutions in Kenya. The researcher used Survey, Correlation, and Case study Research Designs. His targeted population was Finance Officers, Heads of Departments, Management Committee members and Finance and Accounts staff as respondents from a population of 37 Technical Training Institutions in Kenya. Data was collected via questionnaires as well as a review of available documents and records. Data was analyzed using the Statistical Package for Social Scientists where conclusions were drawn from tables, figures from the Package. The study found out that the internal audit department is not efficient, is understaffed, doesn't conduct regular audit activities and doesn't produce regular audit reports although the few reports produced by the internal audit department address flaws in the system.

It was further revealed that there is a clear separation of roles, flaws in the system are addressed, and there is a training program for capacity building in the institutions. However, the study also found out that there is a lack of information sharing and insufficient security measures to safeguard the assets of the Technical Training Institutions in Kenya. It was also noted that there isn't enough cash to meet intended obligations effectively as and when they fall due, that the fees charged to students are not suitable to cover costs, that all fees meant to be remitted to the Technical Training Institutions in Kenya are not collected.

He further recommends proficiency profiling in the internal audit department which should be based on what the technical training institutions in Kenya expects the internal audit department to do and what appropriate number staff would be required

to do this job. It also recommends that the institutions establishes and manages knowledge/information systems to enable all parties within the institution to freely access and utilize the official information. There should be a strategy to improve the generation of extra finances for the Technical Training Institutions in Kenya. The Study, therefore, concludes that internal control systems do function although with hiccups and that there is a weighty relationship between internal control systems and financial performance of Technical Training Institutions in Kenya.

(Laaria, 2013) Identified Management technicalities in the putting into practice of ICT in Public Secondary Schools in Kenya. Descriptive survey to collect data from ICT/curriculum teachers, principals (school leaders) and BOG chairpersons from 105 public Secondary Schools in Mingaine County. The study found out that that school leadership reinforced the application of ICT through pushing stakeholders to investment in its implementation.

However, at the school level, the school management might not have been considering ICT a priority and as such had been apportioning very low budgets for the implementation of ICT in schools. Many school leaders were either passive or against the implementation of ICT, mainly due to cost. ICT was perceived as expensive devices that would devour limited funds yet it was found to be very important in the efficient management of funds and decreasing the risk of fraud. He, therefore, endorses that school leaders to apply basic ICT skills in the day to day administration of the school.

(Kaguri, 2014) Analyzed the financial administration encounters facing implementation of free day secondary education in Imenti North District. The study used a descriptive research design to collect information from 730 respondents which included the BOMs, and PTAs, Principals, District education officers, and quality assurance and standards officers. The study shows that; in spite of extensive directives by the MOE, there was marginal participation of education stakeholders in the budgetary process which negatively impacted on transparency and this created an avenue for unethical practices. The study further discovered disparities in the way

principals communicate financial reports to educational stakeholders and issue financial reports because of poor auditing.

2.4.5 Monitoring and Financial Accountability

(Njeri, 2014) Determined the influence of the internal control system on the financial performance of manufacturing firms in Kenya. A sample of 20 manufacturing firms from a target population of 65 manufacturing firm was selected. The study used both primary and secondary data. Primary data was collected using structured questionnaires while the secondary data was gathered from financial statements founded on the obtainability and accessibility of data. The regression analysis shows that there is a positive relationship between the internal control and financial performance of manufacturing firms in Kenya. The independent variables (Control Environment, Risk Assessment, and Control Activities, Information and Communication and monitoring) contributed to 75.7% of the variation in financial performance as explained by an adjusted R^2 of 0.75.7%.

(Marus , Murezi, Mwosi & Ogwel, 2018) undertook a study to examine the role of the Internal control system in backing-up financial liability in Uganda. The study established that the relationship between internal control systems and financial accountability is positive. The study recommended that Political leaders and other interest groups should avoid interfering with the use of public funds. Instead, they should supervise and monitor government programs for the benefit of the masses.

(Wichenje *et al.*, 2012) found out that in the former western province, an average 17 head teachers were involved in embezzlements of funds and other school property every year while in Kakamega Central district the figures were; an average of 6 principals every year from 2007-2009. Some of the reasons they found responsible for the misuses include there was a long span of period before auditors analyze the books of accounts in schools, signing blank cheques, and at times there was conspiracy with suppliers and auditors, ignorant BOG members, weak internal controls and lack of participation of teachers in the budgetary process among other reasons.

(Osiri, 2012)Investigated the factors contributing to financial mismanagement and misappropriation in Public Secondary Schools in Gucha District, They employed descriptive survey design and stratified random sampling technique to select 5 boarding schools, 37-day schools, 42 head teachers, 42 Bursars, 42 heads of departments, 42 BOG chairpersons, 337 teachers, and 10 quality assurance officers. The study population consisted of 126 head teachers, 126 heads of departments, 126 BOG chairpersons, 126 bursars, 1011 teachers, and 10 quality assurance officers. Data was collected by the use of a questionnaire, in-depth interviews, focus group discussions and observation forms.

Quantitative data collected through questionnaire and observation checklist were analyzed using descriptive and inferential statistics in the form of means, frequency counts, percentages and correlation. Qualitative data collected through interviews, open-ended questions and Focused group discussions were transcribed, organized into themes and sub-themes as they emerged in an on-going process.

The study established that some schools lacked sound accounting systems and in many schools, the bursars had stayed for many years without going for leave. It was, therefore, difficult to investigate any anomalies in their presence. Further, the study discovered that most heads colluded with auditors and gave them bribes to cover the anomalies. Some auditors were bribed to balance the books of accounts before the actual auditing.

(Osiri, 2015) established perceptions of educational stakeholders on the Special effects of Monetary Mishandling on Physical amenities in Secondary Schools in Gucha. Descriptive survey design and Stratified random sampling technique were used to select 5 boarding schools, 37 day schools, 42 head teachers, 42 Bursars, 42 heads of departments, 42 BOG chairpersons, 337 teachers together with purposive sampling to select 10 quality assurance and standards officers. The study established that financial malpractice had badly affected physical facilities. The malpractices were majorly due to the fact that auditing in public secondary schools had not been effective and was unsystematically done. She, therefore, suggested that the

government should set in place an internal auditing system for a set of schools that is independent of the principals to give checks and balances.

(Ondieki, 2015) Undertook to identify factors that influence financial management of public secondary schools in Marani Sub-County. The study used a descriptive study design and random sampling to collect data from 16 public secondary schools. The respondents of the study were school accountants and head teachers. Results displayed that Bursars/accounts clerk and principals approved that they seldom involved parents, teachers, and students during financial matters of the schools and there was asymmetrical government auditing. The asymmetrical government auditing was found to be the main cause of financial mismanagement among public secondary schools in Marani Sub-County, Kenya. She suggested that government auditing should be consistent and should go through the books of accounts and reply back to the school with recommendations so as to minimize embezzlements and deception.

(Simiyu, 2014) Investigated of the factors affecting cash management in public secondary schools in Mombasa County. Descriptive research design and simple random sampling were adopted to get information from a target population of 60 respondents consisting of; principals, bursars and chairmen of BOM of public secondary schools within Mombasa County. Simple random sampling was used when selecting a sample. Both primary and secondary data were collected to achieve the objectives of this study. Triangulation was used as a strategy (control) for cultivating the validity and reliability of this study. The data collected was evaluated using descriptive techniques that were conducted with the help of the Statistical Package for Social Science program.

The findings of the study demonstrate that training plays an important role in making the BOM more responsible and informed about the role it plays as a guardian of school assets. Further, it was established that in schools where the BOM were found to authorize cash transactions were more effective in the management of the cash resources. Her study further discovered that the PTA obligation in the management of many public schools was restricted to a few areas such as fundraising for

numerous development projects of schools after with no follow-ups on how the cash raised was being utilized**.**

A study carried out by (Tanner, 2006) purposed to analyze fiscal Feasibility of Secondary Schools in Mukono District, Uganda. Income reports, filed by individual private schools with the Uganda Revenue Authority, molded the database for the financial analysis section of this research. Survey data and national examination scores were also employed. This research explored standard business financial analysis tools, together with financial statement ratio analysis, and assessed the applicability of each to an educational environment. A model for financial valuation was developed and industry averages were calculated for private secondary schools in the Mukono District of Uganda. School financial strength, demarcated by eight financial measures, was harmonized with the quality of education.

2.5 Critique of Reviewed Literature

Many researchers have tried to explore the control systems put in place in public secondary schools from various angles such as challenges faced by principals in management of finances, the effect of government financial regulations, the impact of training attended by school principals and causes of misappropriations. The studies have been comprehensive and try to obtain information from all the relevant stakeholders.

Mangoensetono(2012), (Zauwiyah & Mariati, 2008), (Nyakundi, Okioga, Ojera & Nyamao, 2015), (Oduol, 2011), (Osiri, 2012) and (Ochieng, 2013) all studied the impact of the control environment in preventing fraud. However, Lindsay chose respondents on convenience according to those who accepted to participate. A more objective sampling method such as random sampling together with purposive sampling would have given more conclusive results.

Ahmad carried out his study outside Kenya and in a business setting. The study also only used employees as respondents and left out the top management organs and owners. Thus a study at home in a different setting like Public schools will be

necessary. Nyakundi et al used Closed-ended questionnaires which may not have been objective enough and may not have given all details. The study was carried out in Kisii Central thus may not be representative of the whole country. The study also only concentrated on accounting practices and not all aspects of internal controls. Oduol used Purposive sampling which may have been biased and less accurate. The study was also carried out in the former Nyanza province and may have not been representative of the whole country.

Osiri did not tackle directly internal controls and prevention of financial fraud directly but general factors leading to mismanagement. The study was also carried out in Gucha and may not be representative of the whole country. Ochieng carried out his study in Kisumu East district and may not be representative of the whole country.

(Otieno & Nyagechi, 2013) and Transparency International Kenya, 2014 studied Corruption risks. Their studies were objective and detailed. However, Simeyo and Nyagechi's study was carried out in Kisii Central district and may not be representative of the whole country. The (Transparency International Kenya, 2014) study was done in Turkana County and needs to be carried out in other counties for objective conclusions.

Kahavizakiriza, Kisiangani, and Wanyonyi (2015), Kaguri (2014), Otieno, Atieno & Yambo (2014) and Osiri (2012) studied Control activities and prevention of financial fraud. However, Kahavizakiriza, Walela, and Kukubo selected their Sample population purposively. This, therefore, may have had some bias. The study also was in Lurambi Sub County and may not represent the whole country. Kaguri, Njati and Thiaine 2014 study was carried out in Imenti North District and would be more objective if done countrywide.

Otieno and Atieno 2016 study employed purposive sampling which might not be objective enough and may be biased. The study also only concentrated on budgeting and not all aspects of internal controls. Furthermore, the study only covered Uriri Sub-county and may not be fully representative of the whole country. Osiri et al

2012 study was done in Public Secondary Schools in Gucha District and can only be conclusive for the whole country if done in other parts of the country.

Makewa *et al.* (2013), Munene (2013), Laaria (2013) and Kaguri (2014) studied information/communication and prevention of financial fraud. Makewa et al 2013 study even though comprehensive was done in Kuria East and may not represent the whole country. Munene 2013 study was done in of technical training institutions in Kenya and not a secondary school setting. He also used a case study of one technical institution which may not be wholly representative. (Laaria, 2013) study was done in public secondary schools in Mingaine County. (Kaguri, 2014) study was done in Imenti North. However, the two studies can only be representative if done in other parts of the country.

Wichenje et al (2012), Osiri (2012), Osiri (2015), Ondieki (2015), Simiyu (2014) and Langat (2008) studied control activities and financial fraud prevention. The studies are comprehensive and a clear indication of how important control activities are in preventing financial fraud. However, Wichenje et al (2012) study was carried out in Kakamega Central district, Ondieki (2015) research was carried out in public secondary schools in Marani Sub-County. Simiyu (2014) study was carried out in Mombasa county, Langat (2008) study was carried out in Nakuru Municipality while Osiri et al (2012) and Osiri (2015) studies were carried out in Gucha District. An exploration of other parts of the country is necessary for more conclusive results.

2.6 Summary of Reviewed Literature

Literature reviewed shows that a lot of finances are allocated to public secondary schools by the government and other stakeholders but a portion of these funds are misappropriated. Most heads collude with auditors and give them bribes to cover the anomalies (Osiri, 2015).The government has put in place various policies, guidelines and control measures to ensure proper financial management. However, there are still many loopholes which include inadequate audit staff, proper monitoring of the implementation of guidelines, inadequate competencies by principals and BOMs, conflict of interest by management committees, outright fraud by some school

principals and lack of adherence to the set guidelines. The irregular government auditing is found to be the main cause of financial mismanagement among public secondary schools in Kenya (Nyakundi *et al*., 2015).

Adequate training and skills are still inadequate thus the finances are managed by account clerks and some head teachers who have little knowledge in financial management though they were charged with planning and implementing expensive projects in schools. These projects were found to collapse due to poor supervision and misappropriation of funds (Ondieki, 2015).

ICT implementation is not a priority in some schools and as such low budget allocation has been done for the implementation of ICT in schools. Many Principals are either passive or against the implementation of ICT, mainly due to cost. ICT is perceived as costly devices that would consume limited funds yet it was found to be very important in the efficient management of funds and reducing the risk of fraud (Laaria, 2013).

Budget approval is mainly carried out by B.O.Ms and the government are not consulted on this. Schools do not involve all the people in the school system in the budget building. The budgets produced are therefore the work of the principal and the bursar and therefore this raises opportunities for collusion and corruption (Kahavizakiriza, Kisiangani & Wanyonyi, 2015).

The control environment is still facing challenges. Ethical values are low and priorities differ. Some district school auditors demand bribes instead of providing direction on the school accounting and financial management process. Some school board members seek for favors such as tenders to supply goods, and this compromise their objectivity in monitoring efficient management of finance as they were also an accomplice in the misappropriations (Oduol, 2011).

Reviewed literature support the theories used in that internal controls have been put in place by the government as an agency cost to protect stakeholder's interests but implementation and subsequent monitoring is weak thus some funds are still

misappropriated. This is in line with agency theory which suggests strong internal controls should be in place to protect the principal's interest. The opportunity for fraud in the fraud triangle, therefore, exists due to weak controls and makes it easy for fraud to occur thus lack of accountability. This is in line with the fraud triangle theory which suggests that an opportunity to commit fraud will easily exist if there are weak internal control systems. The fact that external auditing is weak means expectation of evaluation and social presence will be weak thus leading to poor accountability as postulated by the accountability theory.

2.7 Research Gaps

Despite the researches carried out on financial management in public secondary schools, there are still clear indications of laxity in control systems or outright negligence of the stipulated procedures put in place by the government thus misappropriations are still rampant in public schools (Osiri, 2012). No study has been carried out in Kenya on control environment and how it may enhance financial accountability, many schools lack a formal and documented management philosophy and water tight ethical values and integrity. Control activities especially segregation of duties is still limited in many public schools. Risk assessment is not properly done in many public secondary schools and in many schools, cash and its equivalent are still prone to misappropriations and fraud (Transparency International Kenya, 2014). Many of the researches reviewed have not focused on internal control systems financial accountability in public secondary schools but other government institutions, private businesses and higher institutions of learning. Other studies reviewed have tackled internal control systems and financial accountability in foreign countries.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter entails research philosophy, research methods, and procedures that were used in this study. It covers the research design, the various instruments to be used and their rationale, sampling and data collection procedures that were followed. It also gives details of the targeted population, sample size, the measures that were taken to ensure the reliability and validity of the instruments of data collection, data processing, and analysis.

3.2 Research Philosophy

Research philosophy relates to how the world works and focuses on reality, knowledge and existence. Our separate understanding of reality has an effect of how we acquire knowledge of the world thus our perception of reality, and how we gain knowledge, will affect the conduct the research (Leitch, Hill & Harison, 2010).

This study was guided by positivism where the phenomena being observed lead to the construction of dependable data. Positivists are researchers whose quantitative tools and methods entail quantifying and counting. Positivism enables one to apply statistical techniques in testing hypotheses to evaluate research data collected using quantitative research techniques (Creswell, 2010). Positivists believe reality is stable and hence can be observed from an objective viewpoint. They further argue that a phenomenon can be isolated and observations can be duplicated .This involves the manipulation of reality with variations in the independent variable in order to identify regularities and form relationships between constituent elements of the social world (Wilfred, 2006). Positivism was appropriate for this study because based on the objectives, the current state or reality of financial accountability in national public secondary schools and how internal control systems may assist in improving it needed to be established. Dependable data needed to have been

obtained so as to establish the relationship between the constructs of internal controls and financial accountability. Also, positivism was suitable since the nature of data collected required both quantitate and qualitative analysis.

3.3 Research Design

A descriptive survey research design was adopted for this study. The design was most appropriate for this study because of the nature of variables in this study that was concerned with finding out what relationship exists between internal control systems and financial accountability. A research design is a plan of circumstances for collection, measurement, and analysis of data in a manner that aims to combine relevance to the research purpose with economy and procedure (Kothari & Gaurav, 2014).

A survey is an endeavor to collect data from members of the population in order to establish the current status of events. Such an approach is appropriate for describing the state of affairs as they exist (Kombo & Tromp, 2009). Survey enhanced obtaining information on the current state of internal control systems used to manage finances in public secondary schools in Kenya and how effective they are in promoting financial accountability. It was also appropriate because the sample size was big and survey assisted in reaching many respondents, which ensured a more accurate sample in which to draw conclusions. The secrecy of surveys also encouraged people to feel free and safe with their responses. This provided an opportunity for more truthful and explicit responses which enhances getting accurate data.

A survey was also justified because it has been used by the many researchers in the empirical literature reviewed such as; (Nyakundi *et al*., 2015) "An assessment of the effect of accounting practices on the management of funds in public secondary schools: a study of Kisii central district Kenya". (Ochieng, 2013) in a study entitled "Challenges Facing Head Teachers in Financial Management in Public Secondary Schools: A Case of Kisumu East District Kenya", (Otieno & Nyagechi, 2013) "The effectiveness of internal control procedures on management efficiency of FPE funds

in public primary schools in Kisii Central District", (Kahavizakiriza, Kisiangani & Wanyonyi, 2015) "Financial Management in Public Secondary Schools in Kenya: A Case Study of; Lurambi Sub-County Kakamega County and many other researchers.

3.4 Target Population

The target population for this study was 103 Public schools consisting of; 103 principals, 103 bursars, 103 BOM chairs. The target population is the number of a real hypothetical set of people, events, or objects to which the outcomes of the study are intended at. It is the specific populace about which information is desired (Kothari & Gaurav, 2014).

Table 3.1: Target Population Table

Category	**Number**
Principals	103
Bursars	103
BOM chairs	103
Total	**309**

3.5 Sample Population

According to (Kombo & Tromp, 2009), a sample is a predictable part of a statistical population whose properties are studied in order to get universal information representative of the whole universe. It enables one to draw inferences generalized to the populace of interest (Sekaran & Bougie, 2011). There are various approaches used in sample choice but they vary in cost, energy and expertise required. The superiority of the sample depends on whether it represents the population with respect to the variables in the study (Zikmund *et al*, 2010).

3.5.1 Sample Size and Sampling Technique

The sample size was attained through the use following the formula developed by Yamane (1967) and used by Ngigi & Kawira (2015).

$$n = \frac{N}{1+N(e)^2} \quad \text{Equation 3.1}$$

Where: n = required sample size

e = level of significance taken to be 0.05

N= the population size

1= constant

N = 103

e = 0.05

$$\frac{103}{1+103(0.05)^2} = 81.908 \text{ schools} \quad \text{Approximately 82 schools}$$

Each school has three respondents 82x3=246 respondents

Simple random sampling was used to select 82 national public secondary schools. The 103 national public schools were allocated numbers from 1-103 and using a table of random numbers, the selection of 82 schools was done.

3.5.2 Sample Population

The sample population consisted of 82 schools composed of 82 principals, 82 bursars, and 82 BOM chairs.

Table 3.2: Sample Distribution Table

Category	Number
Principals	82
Bursars	82
BOM chairs	82
Total	**246**

3.6 Data Collection Instruments

Primary data was collected through the use of questionnaires. Both closed-ended and open-ended questions were used. Closed-ended questions were used because they are easy to administer and evaluate, they are also cost-effective in terms of time and money. Open-ended questions were used because they give exhaustive facts (Kombo & Tromp, 2009). Questionnaires were found to be comparatively economical, simple and clear, and if well designed and made anonymous encourage respondents to give sincere answers. Secondary data was collected through analysis of current ratio, debtors' ratio, debt ratio and change in public equity from audited financial statements which consisted of school fund account, tuition account, and operation account to give accurate quantitative information on the state of accountability in public national schools in Kenya.

3.7 Pilot Test

The purpose of pilot test is to check protocol and data collection tools in the study. It is a small scale form in preparation for the core study. Piloting protects possible snags and pricey blunders which will be noted and corrected. It supports estimating the time required for actual field work and any appropriate alterations on the survey test items (Polit & Beck, 2003).

The rule of the thumb suggests that 5% to 10% of the target sample is satisfactory for the pilot study (Cooper & Schindler, 2011). The pilot study was conducted on 9

national public schools which were not part of the selected 82 schools. This was 10% of the expected sample size of 82 respondents.

3.7.1 Validity

Validity is concerned with judgment on how well a test measure purports to measure what it is intended to measure. It implores answers by posing pertinent questions framed in the least confusing way (Fraenkel &Wallen, 2000). Validity may either be content validity or construct validity. There are two types of content validity; concurrent validity which distinguishes variables as weighty or not and extrapolative validity which predicts a significant variable in the future. (Kothari & Gaurav, 2014).

Construct validity is an assurance that features that are being tested by a tool of data collection sufficiently cover what is envisioned. External validity refers to the extent to which data can be generalized not only on individuals or settings, but also over time.

It is conclusion based on evidence about the suitability of inference drawn from test scores (Cooper & Schindler, 2011). Discriminant validity is where different concepts can be distinguished and convergent validity is where different measures of the same concept yield same results (Ember & Ember, 2001).

Factor analysis was used to assess the construct validity of the questionnaire and also further used for dimension reduction of the observed variables (indicators) to yield the latent constructs. Uni-dimensionality of the study constructs was assessed by confirmatory factor analysis (CFA) and multi-dimensionality of the constructs and items assessed by Exploratory Factor Analysis (EFA) to explore the set of indicators that measure the constructs.

3.7.2 Reliability Analysis

Reliability communicates the degree to which a research instrument produces reliable results or data after repeated trials. Reliability it guarantees stability in the answers given by respondents. The most fundamental test of reliability is

repeatability (Fraenkel &Wallen, 2000). Reliability of primary data was measured using internal consistency which measures uniformity within the instrument or how well a set of items measures a characteristic within the test or particular behaviour (Sabana, 2014). The most popular method of testing for internal consistency in the social sciences is the use of Cronbach alpha (Kombo & Tromp, 2009). This method was used where a value of 0.70 or higher was considered sufficient. The formula used to determine Cronbach's coefficient alpha that was used is as below:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}} \quad \text{.....Equation 3.2}$$

Where N is the number of items, c-bar the average inter-item covariance and v-bar equals the average variance. Reliability was tested by the use of 27 questionnaires in nine national public secondary schools which were selected randomly. The pilot study data was vital in assessing internal consistency by providing a coefficient of reliability/consistency of the variables under study. The reliability and consistency were considered as a measure of how closely related a set of items are as a group. Cronbach's alpha which is the most common internal consistency technique was used in this study to check on the reliability of the questionnaire.

3.8 Data Collection Procedure

Primary data was collected by the researcher with the help of a research assistant where questionnaires were distributed to the sampled national public secondary schools. A period one month was allowed for filling up the questionnaires. The questionnaires were then collected back after one month. Secondary data was also collected from the schools audited financial statements for four years from 2014 to 2017. Each of the financial statements contained a tuition account, operations account, and the school fund account. From each of the accounts, current assets, short term liabilities, opening debtor, closing debtors, opening public equity and closing public equity were tabulated. The components tabulated for the secondary data are shown in appendix 3.

3.9 Measurement of Variables

The researcher used correlation analysis to establish whether there is a correlation between the independent variables and the dependent variable. The researcher also used regression analysis to evaluate the relationship between the independent variables and the dependent variable.

Table 3.3: Qualitative Measurement of Variables

Variable Name	Indicators	Measurement tool	Questionnaire-re Item	Empirical studies
Control environment	Composition of BOM Management philosophy Integrity& ethical values Accounting knowledge Commitment of BOM	5 Point Likert Scale, 5 Sub Variables and a Composite of 10 items	Section B	(Mawanda,2008), (Nyakarimi & Karwirwa,2015)
Control activities	Segregation of duties Authorization of activities Physical controls	5 Point Likert Scale, 3 Sub Variables and a Composite of 10 items	Section C	(Ndembu, 2015), (Mwakimasinde, Odhiambo & Byaruhanga, 2014)
Risk assessment	Identification of risks Risk prevention & management Risk assessment	5Point Likert Scale, 4 Sub Variables and a Composite of 10 items.	Section D	(Mugenda,Momanyi & Naibei, 2012), (Mwachiro, 2013)

	Sound accounting procedures			
Information & comm.	Completeness Reliability Correctness Timeliness	5 Point Likert Scale, 4 Sub Variables and a Composite of 10 items.	Section E	(Munene, 2013)& (Ndembu, 2015)
Monitoring	Internal audit by BOM External audits BOM oversight	5Point Likert Scale, 3 Sub Variables and a Composite of 10 items.	Section F	(Njeri,2014) & (Mwachiro, 2013)
Financial accountability	State of books of accounts Nature of audit reports Transparency Safety of assets	5 Point Likert Scale, 4 Sub Variables and a Composite of 10 items	Section G	(Mawanda, 2008) (Marus, Murezi, Mwosi & Ogwel, 2018)

Table 3.3 shows the qualitative measure of variables based on BOM, principals' and bursars' opinions.

Table 3.4: Quantitative measurement of financial accountability

Variable type	Variable Name	Measurement tool	Formula	Empirical Study
dependent Variable	Financial accountability	Current Ratio	Current Assets÷Short Term Liabilities	(Widyaningsih , 2015). (Tanner, 2006
		Debt Ratio	Total debt÷Accumulated fund	(Widyaningsih , 2015). (Tanner, 2006
		Debt collection Ratio	Total closing Debtors÷Total debtors for the year	(Widyaningsih , 2015). (Tanner, 2006).
		Public Equity Ratio	Change in accumulated fund÷Previous year Accumulated fund	(Widyaningsih , 2015) (Tanner, 2006

Table 3.4 shows a quantitative measure of financial accountability based on current ratio, debt ratio, debtors' ratio and change in public equity from audited financial statements.

3.10 Data Analysis and Presentation

The data collected was processed and cleaned in Microsoft Excel before exporting to Stata for data analysis. Both descriptive and inferential statistics were used to analyze the data collected. Descriptive statistics comprised frequencies; mean, standard deviation and variance. Inferential statistics used to measure the relationship between variables comprised of Pearson Product moment correlation for correlation analysis, Simple and multiple regression analysis, normality test was

done using Jacque Bera test, autocorrelation was tested using Durbin Watson statistic, multicollinearity was tested using variance inflation factors. Heteroscedasticity was tested using a scatter plot and a Breach Pagan test. Data was presented using tables, charts, and graphs.

3.10.1 Test of Multicollenearity

Linear regression models are usually based on the assumption of non-multicollinearity of independent variables. This assumption implies that no independent variable should be expressible as a linear function of other independent variable. To assess multicollinearity, the Variance inflation factors (VIFs) were calculated for each independent variable and the reciprocals (tolerances). Variance inflation factor (VIF) tolerance level should not be more than 10. If VIF is above 10, it shows high multicollinearity which indicates the variable is a linear function of another variable in the same model.as shown in table. Such a variable should be removed from the model which should be re-estimated (Saunders, Lewis & Adrian, 2009).

3.10.2 Multiple Regression Analysis

An equation was derived as a basis for the estimation and measure of the proportion of variance between the dependent variable and independent variables. Tests for multicollinearity and normality which form the requisite for multiple regression analysis was carried out in this study. Regression analysis, which determines the relationship between variables, was used to find out the connection between the independent variables (Control environment, Control activities, Risk assessment, Information/communication, and Monitoring) and the dependent variable (Financial accountability). The multiple linear the regression model is summarized in equation 3.1

Y= $\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$ **……Equation 3.3**

Where:

Y represents; enhancing accountability in the management of funds

X_1 represents Control environment

X_2 represents Control activities

X_3 represents Monitoring

X_4 represents Risk assessment

X_5 represents information and communication

ε represents error term

Bo represents regression constant

$\beta_1 - \beta_5$ represents Slope coefficients indicating the effect of control systems on enhancing the management of funds.

This study applied the following five hypotheses generated from the model

Ho_1*:* There no significant effect of control environment on financial accountability in national public secondary schools in Kenya.

Financial accountability = *f* (Control environment, random error)

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$ **……Equation 3.4**

Ho_2*:* There is no significant effect of control activities on financial accountability in national public secondary schools in Kenya

Financial accountability =*f* (Control activities, random error)

$Y = \beta_0 + \beta_2 X_2 + \varepsilon$ **…….... Equation 3.5**

$Ho_{3:}$ There is no significant effect risk of assessment on financial accountability in national public secondary schools in Kenya.

Financial accountability = *f* (risk assessment, random error)

$Y = \beta_0 + \beta_3 X_3 + \varepsilon$ **…….Equation 3.6**

Ho_4: There is no significant effect of information and communication on financial accountability in national public secondary schools in Kenya.

Financial accountability= *f* (information and communication, random error)

$Y = \beta_0 + \beta_4 X_4 + \varepsilon$ **…….....Equation 3.7**

Ho_5: There is no significant effect of monitoring on financial accountability in national public secondary schools in Kenya.

Financial accountability = *f* (monitoring, random error)

$Y = \beta_0 + \beta_5 X_5 + \varepsilon$ **……Equation 3.8**

3.10.3 Testing for Normality

Normality tests are done to determine whether the sample data has been drawn from a normally distributed population (Garson, 2012). Normality assessment was done by the use of histogram and Jacque Bera Test.Theoretically, normality is associated with a skewness of 0 and a kurtosis of 3. The Jaque-Bera test was used to assess whether the residuals significantly deviated from normality by deviation from skewness of 0 and Kurtosis of 3.

3.10.4 Test of Homoscedasticity

Heteroscedasticity refers to non-constant variance while homoscedasticity refers to constant variance. A classical assumption in linear model estimation is that the residual term is homoscedastic. A test for Heteroscedasticity was thus performed to confirm that the residuals of the model fitted do not exhibit Heteroscedasticity. A scatter plot and a Breach – Pagan test were used to assess the homoscedasticity of data distribution. Homoscedasticity compares the empirical cumulative distribution function of a variable with a specific theoretical cumulative distribution function. The more the straight line formed by the scatter plot the more the variable distribution conforms to normality and homoscedasticity (Garson, 2012).

3.10.5 Test of Auto-Correlation

Independence of error terms, which implies that observations are autonomous, was evaluated through the Durbin-Watson test. Durbin Watson (DW) test check that the residuals of the models are not auto-correlated since independence of the residuals is one of the basic hypotheses of regression analysis. Its statistic ranges from zero to four. The calculated Durbin-Watson statistic is compared to the tabulated Durbin-Watson statistics. If the calculated Durbin Watson statistic is higher than the upper limit of the tabulated value then there is non-autocorrelation of the model residuals thus implying independence.The statistic lies between 1.5 and 2.5. Hypothesis test comprises H_0: There is no evidence of autocorrelation; H_1: There is evidence of autocorrelation. If the statistics fall within the acceptable ranges then it will be justified to use the regression model. (Curwin & Slater, 2008).

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter entails the presentation of the data analysis results. It covers the results, interpretation and discussions of the results from the analysis of the data collected. The results were presented based on the analysis of the study variables and objectives including descriptive analysis where responses to the indicators of each the study variables were analysed presented as univariate analyses and inferential analyses to explore the relationships between the constructs, test hypotheses and draw conclusions on the study objectives.

4.2 Pilot Test Results

For testing validity and reliability, a pilot study was conducted in 9 national public secondary schools out of a total sample population of 82 schools that were randomly sampled across the whole country. This gave a total of 27 respondents out of a sample population of 246. This is because 10% of the expected sample size of the respondents from the target population is considered satisfactory (Cooper & Schindler, 2011). The respondents of the sample selected were not included as part of the final sample.

4.2.1 Validity of the data collection instrument

Factor analysis was used to assess the construct validity of the questionnaire and also further used for dimension reduction of the observed variables (indicators) to yield the latent constructs. The rotated factor loadings resulting from EFA is presented in Appendix 4 which shows that all the indicators retained in the model at least loaded a construct more than 0.4. An observed variable is said to belong to the construct it loads highest and above 0.4. (Kline, 2011). Average shared variances extracted (AVE) for each construct from the retained hypothesized indicators formed the basis of assessing for convergent validity as shown in table 4.3 which is a criterion that

was proposed by (Fornell & Larcker, 1981). AVEs above 0.7 is an implication of very good convergent validity. However, AVEs above 0.5 are considered adequate and acceptable. AVEs for all the constructs range between 0.514 and 0.620 implying adequate and acceptable convergent validity considering each hypothesized construct and retained indicators.

KMO and Bartlett's tests were carried with the aim of exploring the sampling adequacy of the data to determine if it was suitable for factor analysis (Laura & Mazerolle, 2011). The KMO statistics for all the constructs were found to be above 0.7 implying the suitability of data for the CFA models. (Tabachnick & Fidell, 2007) Considered a KMO value of 0.5 to be suitable for factor analysis. (Natemeyer, Bearden & Sharma, 2003) Considered the adequate KMO measure to be above 0.60 to be adequate. Sampling adequacy was examined by Bartlett's tests that were based on the significance of the chi-square statistics.

According to this pilot study, all Bartlett's statistics have p-values of 0.000 which are all less than 0.05 implying that the item correlation matrix is not an identity matrix thus the pilot study data is adequate and suitable for the factor analysis models carried out.

All indicators that loaded the constructs above 0.4 were retained while those that loaded the constructs less than 0.4 were expunged and not used in further analysis. Table 4.1 shows the KMO and Bartlett's tests which are measures of validity and reliability of the CFA models used.

Table 4.1: KMO and Bartlett's tests

					Bartlett's test		
	Items retained	**AVE**	**Squared Correlations**	**KMO**	χ^2	df	P-value
Control environment	8	0.535	0.338	0.551	170.945	45	0.000
Control activities	6	0.620	0.373	0.638	100.084	15	0.000
Risk assessment	6	0.564	0.141	0.507	56.73	15	0.000
Info. & comm.	7	0.571	0.345	0.695	97.311	21	0.000
Monitoring	6	0.578	0.246	0.529	37.544	15	0.001
Financial Acc	7	0.514	0.188	0.6	62.261	21	0.000

4.2.2 Reliability Analysis

Pilot study data was used to assess internal consistency by providing a coefficient of reliability/consistency of the variables under study. All the study constructs had reliability measures above 0.7 from all the items used to measure them.

Cronbach alpha value of 0.7 as the recommended value was used as a cut-off point of reliabilities (Fraenkel & Wallen, 2000). On further analysis of the internal consistency by assessing the item-total correlations, the constructs that had indicators that showed inadequate item-total correlations also reflected the possible increment in the reliability measures if the indicator were deleted. These indicators were however noted to be the same that had been proposed for deletion based on CFA and were further expunged. Table 4. 2 shows the Cronbach's Alpha of the various study constructs.

Table 4.2: Cronbach's Alpha Reliability Table

Construct	Number of Items	Cronbach alpha	Number of items retained	Cronbach alpha after deletion	Conclusion
Control environment	11	0.513	8	0.717	Reliable
Control activities	10	0.592	6	0.764	Reliable
Risk assessment	10	0.611	6	0.734	Reliable
Info. & communication	10	0.415	7	0.701	Reliable
Monitoring	10	0.623	6	0.745	Reliable
Financial Acc	11	0.697	7	0.801	Reliable

4.3 Response rate

The study targeted 246 respondents in 82 schools. Responses were only got from 74 schools a total of 222 questionnaires out of 246 were returned which represents 90.24% of the targeted sample respondents. This was deemed adequate for the study. This response rate was considered adequate based on suggestions by various scholars such as Edward et al, 2002 who considered a response rate of below 60% as poor while that above 60% as adequate. Babbie (1990) also considered that a response rate of 50% as adequate and Bailey (1987) proposed an adequate response rate as that above 75%.

Table 4.1: Response rate

Targeted		Returned questionnaires		Response rate	
schools	respondents	Schools	Respondents	Schools	Respondents
82	246	74	222	90.24%	90.24%

The data collected was processed and cleaned in Microsoft Excel before exporting to Stata for data analysis. Table 4.4 presents the missing data analysis results of data processing. Different researchers such as West & Aiken, 2003; Cohen & Cohen, 2013 have suggested that less 10% of missing data on a particular variable or response does not constitute a large amount of missing data to warrant deletion. Tabachnick and Fidell (2007) also argued that cases that have less than 10% missing responses could be allowed for further analysis but the missing responses should be dealt with to clean the data. In this study, only 18 of the 222 observed cases from the respondents were found to have more than 10% missing responses. These were deleted from the data thus retaining only 204 cases for analysis as shown in table 4.4.This study dealt with the missing responses of the retained cases by multiple imputations.

Table 4.2: Missing data analysis

% missing data out of total questions	Number of Cases	Percentage of total cases	Status
0	47	21	Retained
1	84	38	Retained
3	49	22	Retained
4	16	7	Retained
6	2	1	Retained
9	7	3	Retained
>10	18	8	Deleted

4.4 Financial Accountability Descriptive Analysis

Financial accountability was the dependent variable of the study which sought to establish how it is affected by internal control systems. Like all the other variables, financial accountability was assessed through proxy indicator variables that were measured on an ordinal Likert scale of 1- 5. The descriptive analysis was thus based on frequency tables which based on the mode as a measure of central tendency that was generated to display the distribution of the different indicators at the different levels of the multilevel structured dataset.

The first indicator of the variable sought to find out the perception of the respondents that daily transactions are recorded when they occur and not accumulated. The majority (36.5%) of the respondents agreed, 68.2% of the respondents agreed or strongly agreed that daily transactions are recorded when they occur and not accumulated while 14.4% of the respondents disagreed or strongly disagreed.

This implies that at least in more than 6% of the national schools, transactions are not recorded when they occur which is a clear indication of poor record keeping in some schools this may culminate into inaccuracy of records and thus records may not reflect a true and fair view of the financial position of the said school, this may encourage the cooking of books due to loss of track of some transactions.

Regarding the question of whether financial records are accompanied with all relevant source documents for verification. The majority (40.4%) of the respondents strongly agreed, 76% of the respondents agreed or strongly agreed that financial records are accompanied with all relevant source documents for verification, 18.3% of the respondents were neutral while 5.8% disagreed or strongly disagreed.

The overall responses, therefore, indicate that in more than twenty percent of the schools' financial records are not accompanied with all relevant source documents for verification this thus reflects lack of transparency and authenticity of the said transactions this thus puts in doubt whether the transactions actually took place and the role of BOM in monitoring.

The respondents were also questioned whether annual financial statements are prepared according to policy regulations. The majority (55.8%) of the respondents agreed, 83.7% of the respondents agreed or strongly agreed that annual financial statements are prepared according to policy regulations, 7.7% of the respondents were neutral while 8.7% disagreed or strongly disagreed.

The general results, therefore, show that in more than 15% of the public national schools in the study, there still exist low adherence to policy regulations. Flouting of the laid down procedures clearly indicates that there is a lack of transparency and

thus the safety of assets is left in doubt. This may imply intentional leakage of financial resources in such schools.

On the question whether Majority financial reports reflect the true and fair financial position of the school, (41.4%) of the respondents agreed that financial reports reflect the true and fair financial position of the school while 11.5% of the respondents were neutral. Some 81.8% of the respondents agreed or strongly agreed that financial reports reflect the true and fair financial position of the school while 6.7% of the respondents disagreed or strongly disagreed.

These results reflect that in many schools there is transparency and good financial accountability however more than 20 % of the schools' financial reports do not reflect a true and fair view of the financial position of the schools which further imply that fraud and lack of transparency or cooking of books still occur in some schools. It also implies poor monitoring and an ineffective control environment.

The results also determined the distribution of the indicator that audit reports are unqualified i.e. the schools' financial statements are fairly presented according to accepted accounting principles. The majority (38.5%) of the respondents agreed, 77% of the respondents agreed or strongly agreed that audit reports are unqualified i.e. the schools' financial statements are fairly presented according to accepted accounting principles, 9.6% of the respondents were neutral while 13.4% disagreed or strongly disagreed.

The overall results, therefore, imply that more than 10 % of the schools have qualified audit reports which shows that errors or misstatements exist in the books of accounts and thus a clear indication of fraud in some schools. It also shows a failure to follow policy guidelines and may imply lack of accountability and transparency. Qualified reports also indicate poor risk assessment that may lead to a massive loss of resources.

The majority (47.1%) of the respondents agreed that audit reports are communicated and acted upon while 10.6% of the respondents were neutral. Some 84.6% of the

respondents agreed or strongly agreed that audit reports are communicated and acted upon while 4.8% of the respondents disagreed or strongly disagreed.

The overall results, therefore, show that many schools have clear information and communication channels while others still have wanting communication and information channels that depict lack of transparency. It also indicates errors and omissions may take long to be revealed and therefore small mistakes which might have been corrected early enough become worse.

The study also sought what the respondents perceived the question that budgets and financial statements have no misstatements or errors. The majority (30.8%) of the respondents agreed, 59.7% of the respondents agreed or strongly agreed that budgets and financial statements have no misstatements or errors, 22.1% of the respondents were neutral while 18.3% disagreed or strongly disagreed.

The overall findings, therefore, imply that in about 10% of the schools, there still exists misstatements and errors in financial statement which depict inaccuracy in the final accounts and therefore a signal for fraud and lack of monitoring. Such financial statements are therefore unreliable and misleading and cannot be relied upon to give useful information.

An additional indicator of the variable sought to find out the perception of the respondents that financial statements are prepared in time. The majority (46.2%) of the respondents agreed, 83.7% of the respondents agreed or strongly agreed that financial statements are prepared in time while 8.7% of the respondents disagreed or strongly disagreed. The overall results thus depict that in more than 5% of the schools, transactions are not recorded when they occur. This indicates lack of adherence to the stipulated rules and regulations by the ministry. Accumulation of transactions may, therefore, lead to errors/ inaccuracy of records and omissions. It may also be difficult to track some transactions and source documents.

The results also determined the distribution of the indicator that safety measures are in place to safeguard all the school assets. The majority (48.1%) of the respondents

agreed, 78.9% of the respondents agreed or strongly agreed that safety measures are in place to safeguard all the school assets, 12.5% of the respondents were neutral while 8.6% disagreed or strongly disagreed. The overall results imply that in more than 20% of the schools, there is still lack of adequate safety measures to safeguard assets which may lead to leakage, pilferage, and loss of valuable assets. This also indicates poor monitoring and external auditing. It confirms a weak control environment that allows the leakages of valuable assets.

The study also sought what the respondents perceived of the question that loss of assets investigated and acted upon, majority (42.3%) of the respondents agreed, 80.8% of the respondents agreed or strongly agreed that loss of assets investigated and acted upon, 6.7% of the respondents were neutral while 12.5% disagreed or strongly disagreed. The results, therefore, imply that in more than 10% of the schools studied, loss of assets is not investigated and acted upon. This, therefore, implies intentional leakage of assets followed by cover-up through a collusion of BOM members. Risk mitigation techniques are not put in place in such schools and this may encourage and even support more serious fraud.

Regarding the question of whether there is an insurance policy for sensitive and valuable assets, majority (36.5%) of the respondents agreed, 68.2% of the respondents agreed or strongly agreed that daily transactions are recorded when they occur and not accumulated, 24% of the respondents were neutral while 7.7% disagreed or strongly disagreed. The overall results reflect lack of insurance policy for valuable assets in more than 5% of the schools this exposes such to great risk of loss. If valuable items such as cash, machines, and equipment were to be stolen or misappropriated recovering such items would be impossible. Table 4. 5 shows the analysis of the 11 indicators of financial accountability.

Table 4.5: Descriptive analysis of financial accountability

Indicator		1	2	3	4	5	Total
sg1	Freq.	14	16	35	74	65	204
	Percent	6.7	7.7	17.3	36.5	31.7	100.
sg2	Freq.	0	12	37	73	82	204
	Percent	0.0	5.8	18.3	35.6	40.4	100.0
sg3	Freq.	6	12	16	113	57	204
	Percent	2.9	5.8	7.7	55.8	27.9	100.0
sg4	Freq.	4	10	24	84	82	204
	Percent	1.9	4.8	11.5	41.4	40.4	100.0
sg5	Freq.	14	14	20	78	78	204
	Percent	6.7	6.7	9.6	38.5	38.5	100.0
sg6	Freq.	6	4	22	95	77	204
	Percent	2.9	1.9	10.6	47.1	37.5	100.0
sg7	Freq.	10	28	45	63	58	204
	Percent	4.8	13.5	22.1	30.8	28.9	100.0
sg8	Freq.	6	12	16	94	78	206
	Percent	2.9	5.8	7.7	46.2	37.5	100.0
sg9	Freq.	4	14	26	97	63	204
	Percent	1.9	6.7	12.5	48.1	30.8	100.0
sg9	Freq.	16	10	14	86	78	204
	Percent	7.7	4.8	6.7	42.3	38.5	100.0
sg11	Freq.	2	14	49	74	65	204
	Percent	1.0	6.7	24.0	36.5	31.7	100.0

The multi-level CFA was used to generate factor scores at the respondent level capturing the variation at each level. The factor scores yielded the latent variable index of financial accountability. The overall standard deviation of financial accountability is 0.917. Table 4.6 shows the overall standard deviation of financial accountability.

Table 4.6: Descriptive statistics on financial accountability (latent construct)

Mean	Std. Dev.	Min	Max	Observations
0.033	0.917	-1.818	2.910	N = 204

Secondary data was also collected from the schools audited financial statements for four years between 2015 and 2018. The analysis from the four ratios were used to compare the qualitative and quantitative results of financial accountability. The data was used to calculate the current ratio, debt collection rate, debt ratio and change in public equity. Each of the ratios was calculated for tuition account, operations account, and the school fund. The current ratios of the tuition, operation and school fund accounts had overall means of 1.742, 1,749 and 1.700 respectively. This implies that on average the schools are able to meet their short term obligations since current assets are more than short term liabilities. The standard deviations were; 1.073, 0.99 and 0.798 respectively.

The debt ratios components for the tuition, operations, and school fund accounts had an overall mean of 0.460, 0.503 and 0.481 respectively. The average debt ratios imply that the national public schools are not highly leveraged and can, therefore, they are less risky and can effectively pay their debts. The standard deviations for tuition, operations and school fund were 0.199, 0.222 and 0.201 respectively.

The debt collection rate had an overall mean collection rate of 0.797 and a standard deviation of 0.801. This indicates that more than 30% of debt is uncollected mostly in terms of school fees these funds if all collected would boost the financial status of the schools and development projects..

Also collected from records was the change in public equity for the tuition, operations and school fund accounts which were measured as percentage changes and had overall means of 0.113, 0.121 and 0.134 respectively with standard deviations of 0.125, 0.212 and 0.134 respectively. Table 4.7 shows the secondary descriptive analysis of financial accountability.

Table 4.7: Secondary descriptive analysis of financial accountability

	Mean	Std. Dev.	Min	Max	Observations
Current ratio Tuition Account	1.742	1.073	0.000	5.002	N = 272
Current ratio Operation Account	1.749	0.999	0.501	5.001	N = 272
Current ratio School Fund	1.700	0.798	0.889	4.615	N = 272
Debt collection rate	0.797	0.801	0.000	6.342	N = 136
Debt ratio Tuition Account	0.460	0.199	0.000	1.000	N = 272
Debt ratio Operation Account	0.503	0.222	0.000	1.501	N = 272
Debt ratio School Fund	0.481	0.201	0.000	0.844	N = 272
Change in equity Tuition Account	0.113	0.125	-1.000	0.356	N = 272
Change in equity Operation Account	0.121	0.212	-0.903	1.101	N = 272
Change in equity School Fund	0.134	0.148	-0.224	0.919	N = 272

4.5 Control Environment Descriptive Analysis

One of the indicators of the variable sought to find out the perception of the respondents that BOM is composed of individuals who have accounting knowledge. The majority (28.9%) of the respondents agreed, 40.4% of the respondents agreed or strongly agreed that BOM is composed of individuals who have accounting knowledge while 43.3% of the respondents disagreed or strongly disagreed. The

results imply that more than 30% of the respondents believe that BOM lack accounting knowledge. This implies that some BOM members may be incapable of understanding and interpreting financial statements and records. A scenario that may compromise financial accountability.

Regarding the question of whether the composition of the BOM has an effect on how funds are managed in your organization, Majority (42.3%) of the respondents strongly agreed, 75% of the respondents agreed or strongly agreed that the composition of the BOM has an effect on how funds are managed in your organization, 8.7% of the respondents were neutral while 16.3% disagreed or strongly disagreed. The overall results, therefore, indicate that to a large extent (75%) composition of the BOM has an effect on financial accountability. Thus if BOM was to be composed of people with accounting knowledge and integrity, financial accountability would improve.

The study also sought what the respondents perceived of the question that BOM has a working and documented philosophy which is adhered to, Majority (40.4%) of the respondents agreed, 55.8% of the respondents agreed or strongly agreed that BOM has a working and documented philosophy which is adhered to, 17.3% of the respondents were neutral while 26.9% disagreed or strongly disagreed. These results imply that in the majority of the schools (55.8%), there is a working and documented philosophy which is adhered to this is a great strength for such schools since they will ensure that integrity issues are dealt with amicably. All BOM undertakings will be guided by the philosophy and this will improve financial accountability.

The results also determined the distribution of the indicator that BOM"s philosophy has a positive role in enhancing financial accountability, Majority (37.5%) of the respondents agreed, 62.5% of the respondents agreed or strongly agreed that BOM"s philosophy has a positive role in enhancing financial accountability, 13.5% of the respondents were neutral while 24.1% disagreed or strongly disagreed. The results affirm that many of the respondents believe that the presence of a documented philosophy and strict adherence to management philosophy will enhance financial accountability. This will be the blueprint for any actions taken by the BOM.

The respondents were also asked about whether BOM are scrutinized for integrity and good conduct before engagement to a school, Majority (42.3%) of the respondents strongly agreed, 68.3% of the respondents agreed or strongly agreed that BOM are scrutinized for integrity and good conduct before engagement to a school, 10.6% of the respondents were neutral while 21.2% disagreed or strongly disagreed.

The results depict the fact that in many schools, BOM is scrutinized for integrity and good conduct before engagement by a school this is significant in knowing the past conduct of such BOM members that may influence the present and future conduct and will ensure that anyone with integrity issues is locked out from managing public schools. However in more than 10% of the respondents still believe that no scrutiny is done on the integrity and conduct of BOM members before engaging them this can be a dangerous risk as individuals with tainted integrity may be engaged as BOM members which may impact negatively on financial accountability.

The study also sought what the respondents perceived of the question that BOM has no vested interest in school expenditures and supplies, Majority (25%) of the respondents strongly agreed, 48.1% of the respondents agreed or strongly agreed that BOM has no vested interest in school expenditures and supplies, 19.2% of the respondents were neutral while 31.7% disagreed or strongly disagreed.

The overall results indicate that more than 30% of the respondents believe that BOM has vested in school expenditures and supplies. This implies that some BOM members may want to be suppliers and as such, they cannot closely monitor fishy deals with other suppliers since they are also partisan. Such BOM members are likely to cover any fraudulent activities so that they can get favours of supplying goods and services.

The majority (30.8%) of the respondents agreed that the ethical behaviors and integrity of the BOM enhance financial accountability while 22.1% of the respondents were neutral. Some 59.7% of the respondents agreed or strongly agreed that the ethical behaviors and integrity of the BOM enhances financial accountability while 18.3% of the respondents disagreed or strongly disagreed. These results imply

that if the BOM were people of integrity, they will not get engaged in fraudulent activities and personal interests will not exist. Suppliers will be evaluated objectively and any fraudulent activities will be dealt with amicably and thus there will be improved financial accountability.

The results also determined the distribution of the indicator that the BOM provides feedback to all stakeholders about undertakings of the school, Majority (36.5%) of the respondents agreed, 61.5% of the respondents agreed or strongly agreed that the BOM provides feedback to all stakeholders about undertakings of the school, 15.4% of the respondents were neutral while 23.1% disagreed or strongly disagreed. The results indicate that least in more than 20%, the BOM does not provide feedback to all stakeholders about undertakings of the school. This implies a lack of transparency and may mean that loss of assets, fraudulent activities, and inaccuracy of records and financial statements will not be detected and root causes established.

Regarding the question of whether the BOM is committed to their oversight role, Majority (38.5%) of the respondents agreed, 72.2% of the respondents agreed or strongly agreed that BOM are committed to their oversight role, 6.7% of the respondents were neutral while 21.2% disagreed or strongly disagreed.

On the question on whether policies and procedures for authorizations established are adhered to in all BOM undertakings, Majority (46.2%) of the respondents agreed that policies and procedures for authorizations established are adhered to in all BOM undertakings while 10.6% of the respondents were neutral, while 9.7% of the respondents disagreed or strongly disagreed. The overall finding reveals that in many schools more than (68%) policies and procedures for authorizations established are adhered to in all BOM undertakings this is clear indication that no expenditure can be incurred without authorization and thus will curb any fraudulent activities, however in more than 9% of the schools there is still compromise on authorization and this gives leeway to the principal and bursar to incur expenditures and justify them later.

The results also determined the distribution of the indicator that there are formalized policies and procedures for major operations in the school, Majority (40.4%) of the respondents strongly agreed, 68.3% of the respondents agreed or strongly agreed that there are formalized policies and procedures for major operations in the school, 7.7% of the respondents were neutral while 24% disagreed or strongly disagreed.

These results portray that in many schools, there are formalized policies and procedures for major operations in the school. Thus a framework exists that guides the undertakings of the school. However, in some schools such policies and procedures even if they exist are not followed which compromises financial accountability in such schools. Table 4. 8 shows the analysis of the indicators measuring control environment.

Table 4.8: Descriptive analysis of Control Environment

Indicator		1	2	3	4	5	Total
sb1	Freq.	29	60	33	60	22	204
	Percent	14.4	28.9	16.4	28.9	11.5	100
sb2	Freq.	10	23	18	67	86	204
	Percent	4.8	11.5	8.7	32.7	42.3	100
sb3	Freq.	20	35	35	82	32	204
	Percent	9.6	17.3	17.3	40.4	15.4	100
sb4	Freq.	16	33	28	76	51	204
	Percent	7.7	16.4	13.5	37.5	25.0	100
sb5	Freq.	12	31	22	53	86	204
	Percent	5.8	15.4	10.6	26.0	42.3	100
sb6	Freq.	23	41	39	47	51	201
	Percent	11.5	20.2	19.2	23.1	25.0	100
sb7	Freq.	10	28	45	63	58	204
	Percent	4.8	13.5	22.1	30.8	28.9	100
sb8	Freq.	22	26	31	74	51	204
	Percent	10.6	12.5	15.4	36.5	25.0	100
sb9	Freq.	16	28	14	78	68	204
	Percent	7.7	13.5	6.7	38.5	33.7	100
sb9	Freq.	12	8	22	93	69	204
	Percent	5.8	3.9	10.6	46.2	33.7	100

4.6 Control activities Descriptive analysis

The first indicator of the control activities sought to find out the perception of the respondents that there is segregation of duties such that authorizing, processing, recording and reviewing are done by different people. The majority (38.5%) of the respondents agreed, 75% of the respondents agreed or strongly agreed that there is segregation of duties such that authorizing, processing, recording and reviewing are

done by different people while 11.6% of the respondents disagreed or strongly disagreed.

The overall results show that at least in some (5.3%) of the schools, segregation of duties such that authorizing, processing, recording and reviewing is lacking. This implies that the same individual who authorizes an expenditure may be the same person going to execute the expenditure. Review and follow up is not done to establish the authenticity of the documents and expenditure. Fraudulent activities can, therefore, be intelligently covered up without notice by other BOM members.

Another indicator of the variable sought to find out the perception of the respondents that the segregation of duties has a role in enhancing financial accountability. The majority (25%) of the respondents agreed, 38.5% of the respondents agreed or strongly agreed that segregation of duties has a role in enhancing financial accountability while 41.4% of the respondents disagreed or strongly disagreed.

These results, therefore, imply that if there is an improvement in the segregation of duties such that authorizing, processing, recording and reviewing is done by different individuals, then fraudulent activities would be minimal if any. Fraudulent activities, therefore, cannot be intelligently covered up without notice by other individuals and financial accountability will be greatly improved.

Another question sought to establish whether the school has clear authorization and approval procedures. The majority (42.3%) of the respondents agreed that the school has clear authorization and approval procedures while 8.7% of the respondents were neutral. Some 68.3% of the respondents agreed or strongly agreed that the school has clear authorization and approval procedures while 23.1% of the respondents disagreed or strongly disagreed.

The results indicate that in many schools, there exist clear authorization and approval procedures. This is a financial management strength and will ensure that no activity is carried out without proper authorization and approval thus fraudulent activities can be curbed before occurrence. However, in some schools (23.1%) to be precise,

proper authorization and approval are not adhered to. This implies that individuals may carry out activities that may not be of the common good or fictitious activities and authorization or approval done later which may lead to loss of funds.

The respondents were also asked about whether it is possible for one staff to have access to all valuable information without the consent of the BOM. The majority (37.5%) of the respondents strongly agreed, 66.4% of the respondents agreed or strongly agreed that it is possible for one staff to have access to all valuable information without the consent of the BOM, 10.6% of the respondents were neutral while 23.1% disagreed or strongly disagreed.

These results indicate that in the majority of the schools, it is not possible for one staff to have access to all valuable information without the consent of the BOM. This, therefore, eliminates the manipulation of information for personal interests/gains without the knowledge of all stakeholders. However, in a few schools (18.4%), results indicate that it is possible for one staff to have access to all valuable information without the consent of the BOM. This means that vital information can be manipulated /doctored for personal gain and provides a loophole and motivation to commit financial fraud.

The study also sought how the respondents perceived the question that authorization assists in promoting financial accountability. The majority (33.7%) of the respondents agreed, 60.6% of the respondents agreed or strongly agreed that authorization assists in promoting financial accountability, 16.4% of the respondents were neutral while 23% disagreed or strongly disagreed. The results indicate that in many schools, respondents believe that that segregation of duties has a role in enhancing financial accountability thus schools should strive to enhance segregation of duties such that authorization and actual execution of expenditures are done by different people if they are to improve on financial accountability.

The respondents were also asked about whether proper verification before and after incurring any expenditure is strictly adhered to. The majority (34.6%) of the respondents agreed, 64.4% of the respondents agreed or strongly agreed that proper

verification before and after incurring any expenditure is strictly adhered to, 11.5% of the respondents were neutral while 24.1% disagreed or strongly disagreed.

The findings imply that in many schools proper verification before and after incurring any expenditure is strictly adhered to. This enhances this ensures that accuracy and close monitoring of such transactions if done. However in some schools,(21.1%) proper verification before and after incurring any expenditure is not strictly adhered to thus fictitious expenditures may go unnoticed and inaccuracies in financial statements may not be detected.

The respondents were also asked about whether there is a reconciliation of records on a regular basis. The majority (30.8%) of the respondents agreed, 49.1% of the respondents agreed or strongly agreed that there is a reconciliation of records on a regular basis, 14.4% of the respondents were neutral while 36.6% disagreed or strongly disagreed.

These results indicate that many schools adhere to regular reconciliation of records which is a clear indication that all transactions can be tracked and errors minimized. However, in some schools regular reconciliation of records is not done implying that the school may lose track of some transactions or some transactions may be accumulated over time and this may lead to many errors thus compromising financial accountability.

The results also determined the distribution of the indicator that verification and reconciliation of records play a role in financial accountability. The majority (41.4%) of the respondents agreed, 82.8% of the respondents agreed or strongly agreed that verification and reconciliation of records play a role in financial accountability, 5.8% of the respondents were neutral while 11.6% disagreed or strongly disagreed.

From the results, more than 80% of the respondents agree or strongly agree that the verification and reconciliation of records play a role in enhancing financial accountability. Thus if schools enhanced regular verification and reconciliation of

records, the error would be minimized, fraudulent activities will be identified early and financial accountability will be greatly enhanced.

The respondents were also asked about whether controls are in place to curb incurring expenditure in excess allocated funds. The majority (39.4%) of the respondents agreed, 67.3% of the respondents agreed or strongly agreed that controls are in place to curb incurring expenditure in excess allocated funds, 15.4% of the respondents were neutral while 17.3% disagreed or strongly disagreed.

From the results, more than 60% of the schools have controls in place to curb incurring expenditure in excess allocated funds. Thus the BOM will work with the stipulated budget and avoid unnecessary budget variances. This encourages prudent expenditure. However, in more than 30% of the schools, budget variances exist. This may lead to wastage of resources and misappropriation of funds may be covered up in these variances.

Regarding the question of whether budget reviews assist in enhancing financial accountability, the Majority (33.7%) of the respondents agreed, 64.5% of the respondents agreed or strongly agreed that budget reviews assist in enhancing financial accountability. 10.6% of the respondents were neutral while 25% disagreed or strongly disagreed.

From the results, it is depicted that more than 60% of the respondents believe that budget reviews assist in enhancing financial accountability. Thus many schools school strive to reduce unnecessary budget variances as much as possible for prudent expenditure and if any variances exist then they should be beyond control and must be explained, approved and authorized. Table 4. 9 shows the analysis of the 10 indicators measuring control activities.

Table 4.9: Descriptive analysis of control activities

Indicator		1	2	3	4	5	Total
sc1	Freq.	6	18	28	78	74	204
	Percent	2.9	8.7	13.5	38.5	36.5	100.0
sc2	Freq.	33	51	41	51	28	204
	Percent	16.4	25.0	20.2	25.0	13.5	100.0
sc3	Freq.	12	35	18	86	53	204
	Percent	5.8	17.3	8.7	42.3	26.0	100.0
sc4	Freq.	22	26	22	58	76	204
	Percent	10.6	12.5	10.6	28.9	37.5	100.0
sc5	Freq.	23	23	33	69	56	204
	Percent	11.5	11.5	16.4	33.7	26.9	100.0
sc6	Freq.	22	28	23	71	60	204
	Percent	10.6	13.5	11.5	34.6	29.8	100.0
sc7	Freq.	37	37	29	64	37	204
	Percent	18.3	18.3	14.4	30.8	18.3	100.
sc8	Freq.	6	18	12	84	84	204
	Percent	2.9	8.7	5.8	41.4	41.4	100.
sc9 Overall	Freq.	10	26	31	80	57	204
	Percent	4.8	12.5	15.4	39.4	27.9	100.
Sc10	Freq.	23	28	22	68	63	204
	Percent	11.5	13.5	10.6	33.7	30.8	100.

4.7 Risk assessment Descriptive analysis

The first indicator of the variable sought to find out the perception of the respondents that the BOM identifies risks that affect the achievement of the set objectives. The majority (31.7%) of the respondents agreed, 47.1% of the respondents agreed or strongly agreed that the BOM identifies risks that affect the achievement of the set objectives while 24.1% of the respondents disagreed or strongly disagreed.

These results attest to the fact that in many national public secondary schools the BOM identifies risks that affect the achievement of the set objectives. This will assist in the prevention and mitigation of such risks thus less financial loss. Objectives will be easily achieved and any obstacles to the achievement of the objectives will be identified early enough and remedial action is undertaken. However, in some national public secondary schools, the BOM does not regularly identify risks that affect the achievement of the set objectives. This means that such risks cannot be prevented and remedial action may be undertaken when it's already too late.

Regarding the question of whether the BOM has criteria for the ascertainment of which fraud-related risks to the School are most critical. The majority (37.5%) of the respondents agreed, 62.5% of the respondents agreed or strongly agreed that the BOM has criteria for the ascertainment of which fraud-related risks to the School are most critical, 12.5% of the respondents were neutral while 25% disagreed or strongly disagreed.

These results indicate that in many schools, the BOM has criteria for the ascertainment of which fraud-related risks to the School are most critical. Such risks can, therefore, be prevented and mitigated. However, in some national public secondary schools, the BOM lacks criteria for the ascertainment of which fraud-related risks to the School are most critical. This means that such risks cannot be prevented and remedial action may be undertaken when it's already too late and risks that may have been curbed early enough become too difficult to remedy.

The study also sought how the respondents perceived the question that identification of risk plays a role in enhancing accountability. The majority (34.6%) of the respondents agreed, 52.9% of the respondents agreed or strongly agreed that identification of risk plays a role in enhancing accountability, 15.4% of the respondents were neutral while 31.8% disagreed or strongly disagreed.

From the foregoing results, the majority of the respondents agree/ strongly agree that identification of risk plays a role in enhancing accountability. Thus if public schools were to identify risks before the implementation of any activity, then such

risks/loopholes will be sealed. Proper risk management/mitigation techniques will be established and thus improve transparency and financial accountability.

Regarding the question of whether the BOM has put in place mechanisms for mitigation of critical risks that may result from fraud. The majority (33.7%) of the respondents agreed, 53.9% of the respondents agreed or strongly agreed that the BOM has put in place mechanisms for mitigation of critical risks that may result from fraud, 14.4% of the respondents were neutral while 31.7% disagreed or strongly disagreed.

From the results more in more than 60% of the schools, the BOM has put in place mechanisms for mitigation of critical risks that may result from fraud, such schools, therefore, have effective measures of dealing with any risks that may occur and corrective measures/action is promptly taken to prevent reoccurrence of such risks. However, in more than 20% of the schools, the BOM has not put in place mechanisms for mitigation of critical risks that may result from fraud. Such schools, therefore, may be caught unawares of heavy losses as a result of risk and reactive rather than a proactive approach is adopted yet losses due to the stipulated risks may never be recovered.

The results also determined the distribution of the indicator that all risk prone activities such as handling cash are closely monitored to minimize risk. The majority (26%) of the respondents agreed, 45.2% of the respondents agreed or strongly agreed that all risk prone activities such as handling cash are closely monitored to minimize risk, 16.4% of the respondents were neutral while 38.5% disagreed or strongly disagreed.

The results depict that in many schools (above 50%), all risk prone activities such as handling cash are closely monitored to minimize risk. Thus handling of cash is minimal in such schools and thus loss of cash through theft, misappropriation and unauthorized expenditure is minimal. However, in more than 30% of the schools, risk-prone activities such as handling cash are not closely monitored and thus large amounts of cash may be kept in the office. This may, therefore, create opportunities

for committing fraud and rationalization can easily be done by the offenders, such frauds may also be covers in the pretext of emergency expenditures.

The respondents were also asked whether persons performing stock taking do not have custody of items. The majority (32.7%) of the respondents agreed, 57.7% of the respondents agreed or strongly agreed that Persons performing stock taking do not have custody of items, 14.4% of the respondents were neutral while 27.9% disagreed or strongly disagreed.

These results indicate that in the majority of the schools (above 50%), persons performing stock taking do not have custody of items. This segregation of duties, therefore, leads to transparency and can unearth any anomalies that may occur. Any loses of stock can be easily identified and collusions will be avoided. However, in more than 20% of the schools, persons performing stock taking have custody of items. This creates a big opportunity to commit fraud as the stock balances can easily be doctored by the same individual. Stock balances may be ‘cooked' to suit the true stock balance available without being detected.

Another indicator of the variable sought to find out the perception of the respondents that the school security system identifies and safeguards institutional assets. The majority (30.8%) of the respondents agreed, 61.6% of the respondents agreed or strongly agreed that the school security system identifies and safeguards institutional assets while 31.7% of the respondents disagreed or strongly disagreed.

The results depict that in many schools, the school security system identifies and safeguards institutional assets. It is, therefore, possible to monitor and track all school assets and any losses will be easily identified. This, therefore, will reduce the opportunity to commit fraud due to fear of the fraudulent activity being exposed. However, in more than 20% of the schools, the school security system is unable to identify and safeguards institutional assets. In such schools, valuable assets can easily be lost without the BOM noticing.

The results also determined the distribution of the indicator that risk mitigation techniques are assessed and modified regularly. The majority (29.8%) of the respondents agreed, 43.3% of the respondents agreed or strongly agreed that risk mitigation techniques are assessed and modified regularly, 24% of the respondents were neutral while 32.7% disagreed or strongly disagreed.

This is an indication that risk mitigation techniques are assessed and modified regularly in the majority of the schools. Thus any new ways developed by fraudsters will be easily identified. Better risk prevention and mitigation techniques can also be developed over time. Such schools, therefore, have limited risk occurrence thus improved financial accountability. However in some few schools, risk mitigation techniques are not assessed and modified regularly thus if fraudsters developed new ways of leakages and misappropriations, it will go unnoticed/undetected.

Regarding the question of whether prevention, control, and management of risk affect financial accountability. The majority (37.5%) of the respondents strongly agreed, 58.7% of the respondents agreed or strongly agreed that prevention, control, and management of risk affect financial accountability, 9.6% of the respondents were neutral while 31.8% disagreed or strongly disagreed.

The results imply that an improvement in prevention, control, and management of risk will lead to improved financial accountability, thus public school should device effective risk management techniques if they are to step up financial accountability. Such schools will be able to prevent and control risk rather than act on already suffered risks that may lead to heavy losses.

The study also sought what the respondents perceived of the question that sound and acceptable accounting procedures are adhered to, Majority (43.3%) of the respondents agreed, 70.2% of the respondents agreed or strongly agreed that the BOM identifies risks that affect achievement of the set objectives, 11.5% of the respondents were neutral while 18.2% disagreed or strongly disagreed.

These results depict that in the majority of the schools, sound and acceptable accounting procedures are adhered to, such schools, therefore, prepare their books of accounts according to the stipulated regulations and financial statements will be free from error and therefore reflect a true and fair view of the school. However in some schools, sound and acceptable accounting procedures are not adhered to, such schools, therefore, do not follow the stipulated regulations in preparing books of accounts. The financial statements may be prone to errors and thus may give misleading information about the state of affairs of the school. Table 4.10 shows the analysis of the 10 indicators measuring Risk assessment.

Table 4.10: Descriptive analysis of risk assessment

Indicator			1	2	3	4	5	Total
sd1	Overall	Freq.	18	31	59	65	31	204
		Percent	8.7	15.4	28.9	31.7	15.4	100.
sd2	Overall	Freq.	20	31	26	76	51	204
		Percent	9.6	15.4	12.5	37.5	25.0	100.0
sd3	Overall	Freq.	18	47	31	71	37	204
		Percent	8.7	23.1	15.4	34.6	18.3	100.0
sd4	Overall	Freq.	39	26	29	69	41	204
		Percent	19.2	12.5	14.4	33.7	20.2	100.0
sd5	Overall	Freq.	35	43	33	53	40	204
		Percent	17.3	21.2	16.4	26.0	19.2	100.
sd6	Overall	Freq.	28	29	29	67	51	204
		Percent	13.5	14.4	14.4	32.7	25.0	100.0
sd7	Overall	Freq.	23	41	14	63	63	204
		Percent	11.5	20.2	6.7	30.8	30.8	100.0
sd8	Overall	Freq.	22	45	49	60	28	204
		Percent	10.6	22.1	24.0	29.8	13.5	100.
sd9	Overall	Freq.	28	37	20	42	77	204
		Percent	13.5	18.3	9.6	21.2	37.5	100.0
Sd10	Overall	Freq.	14	23	23	88	56	204
		Percent	6.7	11.5	11.5	43.3	26.9	100.0

4.8 Information and communication Descriptive analysis

For this variable, the study sought to find out the perception of the respondents that all employees understand and are up to date on performance risks and the function of internal control. Majority (40.4%) of the respondents agreed, 75% of the respondents agreed or strongly agreed that all employees understand and are up to date on

performance risks and the function of internal control while 10.6% of the respondents disagreed or strongly disagreed.

The results imply that in majority of the schools, employees understand and are up to date on performance risks and the function of internal control. This means that there is adequate communication to all stakeholders on the tasks expected of them. They clearly understand their roles and any risks related to their duties. Such employees therefore will carry out their duties accurately and will be more accountable and transparent.

However in more than 7% of the schools, some employees do not understand and are not up to date on performance risks and the function of internal control. Such employees may lack the expertise to carry out their duties effectively. Conflicts may also arise due to clear line of duties.

The respondents were also asked the question whether communication enables and support understanding of internal control objectives. Majority (51.9%) of the respondents agreed that communication enables and support understanding of internal control objectives. while 12.5% of the respondents were neutral. Some 80.8% of the respondents agreed or strongly agreed that communication enables and support understanding of internal control objectives. While 6.8% of the respondents disagreed or strongly disagreed.

From the results, majority of the respondents agreed that communication enables and support understanding of internal control objectives. This imply that is public schools implement proper communication to all stake holders, all employees will understand their roles and the risks associated with such roles. Thus necessary action can be taken to ensure effectiveness and efficiency.

The respondents were also asked about whether matters affecting the achievement of financial objectives are communicated to all parties. Majority (45.2%) of the respondents agreed, 84.6% of the respondents agreed or strongly agreed that matters

affecting the achievement of financial objectives are communicated to all parties, 9.6% of the respondents were neutral while 5.8% disagreed or strongly disagreed.

The overall results indicate that in majority of the schools, matters affecting the achievement of financial objectives are communicated to all parties. An evaluation and analysis of the variances can therefore be identified early enough and any barriers to achievement of objectives can be minimised. However in some few schools, matters affecting the achievement of financial objectives are not communicated to all parties this may result to lack of transparency and barriers affecting achievement of objectives may not be removed.

The results also determined the distribution of the indicator that the BOM ensures that reliable and relevant information is communicated all stakeholders in the school. Majority (50%) of the respondents agreed, 80.8% of the respondents agreed or strongly agreed that the BOM ensures that reliable and relevant information is communicated all stakeholders in the school, 5.8% of the respondents were neutral while 13.5% disagreed or strongly disagreed.

The results depict that in majority of the schools, BOM ensures that reliable and relevant information is communicated all stakeholders in the school. This means that information communicated is essential to achievement of objectives and reflect a true and fair view of the financial status of the school. All stake holders are therefore aware of the undertaking of the school and their input can be sought for improvement. However in some few schools BOM does not ensure that reliable and relevant information is communicated all stakeholders in the school. There exist lack of transparency and information about undertaking of the school are an asset of a few. In such schools fraudulent cases may be covered up without knowledge of other stake holders.

The study also sought what the respondents perceived of the question that budgets and financial reports give true and fair view of the organization. Majority (42.3%) of the respondents agreed, 81.7% of the respondents agreed or strongly agreed that

budgets and financial reports give true and fair view of the organization. 9.6% of the respondents were neutral while 8.7% disagreed or strongly disagreed.

From these results it's clear that in majority of the schools, budgets and financial reports give true and fair view of the organization. Financial statements are therefore prepared according to stipulated rues and do not have errors and omissions. Budgets are adhered to and in case of nay variances such variances are clearly explained and justified. However in a few schools, budgets and financial reports do not give true and fair view of the organization. The budgets may contain unexplained variances and the financial statements may contain error or may be doctored for reporting purposes.

Regarding the question of whether budgets are given adequate time for scrutiny and verification. Majority (31.7%) of the respondents agreed, 62.5% of the respondents agreed or strongly agreed that budgets are given adequate time for scrutiny and verification, 26% of the respondents were neutral while 11.6% disagreed or strongly disagreed.

The results indicate that in many national public secondary schools, budgets are given adequate time for scrutiny and verification. Each item of budget revenue and expenditure are scrutinised to understand the relevance and justification. Any fictitious expenditures or unjustified, unexplained expenditure can therefore be easily identified and thus fraud will be minimal. However in about 10% of the national public secondary schools, budgets are not given adequate time for scrutiny and verification. This may be due to lack of expertise by BOM members or limited time. This poses dangerous phenomenon where fictitious expenditure my go unnoticed and fraudulent activities may not be unearthed.

The respondents were also asked the question whether pertinent information is identified, captured and distributed in a form and timeframe that supports the achievement of financial reporting objectives. Majority (44.2%) of the respondents agreed that pertinent information is identified, captured and distributed in a form and

timeframe that supports the achievement of financial reporting objectives. while 6.7% of the respondents were neutral.

Some 78.8% of the respondents agreed or strongly agreed that pertinent information is identified, captured and distributed in a form and timeframe that supports the achievement of financial reporting objectives while 14.5% of the respondents disagreed or strongly disagreed.

From the results it can clearly be concluded that in majority of the schools, pertinent information is identified, captured and distributed in a form and timeframe that supports the achievement of financial reporting objectives. Thus any relevant information is passed in good time so as to enable employees overcome any obstacles in achievement of the objectives. However in some schools, pertinent information is not identified, captured and distributed in a form and timeframe that supports the achievement of financial reporting objectives. Vital information may therefore be communicate very late after failure to achieve objective is realized.

The results also determined the distribution of the indicator that all relevant departments are involved and consulted in the budget making process. Majority (37.5%) of the respondents agreed, 75% of the respondents agreed or strongly agreed that all relevant departments are involved and consulted in the budget making process, 11.5% of the respondents were neutral while 13.4% disagreed or strongly disagreed.

The above results clearly depict that all in many national public secondary schools, all the relevant departments are involved and consulted in the budget making process. This allows for the input of all stake holders and therefore unnecessary expenditures are avoided. However in some few schools all relevant departments are involved and consulted in the budget making process. The budgeting process is therefore not transparent and ghost expenditure or even unnecessary expenditure not approved by stakeholders may exist leading to wastage and leakage of funds.

On the question whether financial statements are reported and discussed by the BOM, majority (35.6%) of the respondents agreed that financial statements are reported and discussed by the BOM while 7.7% of the respondents were neutral. Some 70.2% of the respondents agreed or strongly agreed that financial statements are reported and discussed by the BOM while 22.1% of the respondents disagreed or strongly disagreed.

The foregoing results indicate that in majority of the schools, financial statements are reported and discussed by the BOM. The accountants will therefore strive to prepare financial statement according to legal requirements and these statements are likely to reflect a true and fair view of the school. However in some schools, financial statements are not properly reported and discussed by the BOM. The BOM may therefore just 'rubberstamp' the financial statements prepared by the principal and the bursar. There lacks scrutiny and verification of whether the expenditures were authorised and justified.

Regarding the question of whether budget implementation reports are given back to the relevant departments in good time, Majority (38.5%) of the respondents agreed, 77% of the respondents agreed or strongly agreed that all employees understand and are up to date on performance risks and the function of internal control, 14.4% of the respondents were neutral while 8.7% disagreed or strongly disagreed.

From the results in majority of the schools, budget implementation reports are given back to the relevant departments in good time, the relevant stakeholders can therefore pan in advance and necessary adjustments made to suit the budget. However in some few schools, budget implementation reports are not given back to the relevant departments in good time. Key areas of expenditure may therefore be omitted and this can lead to crisis. Table 4. 11 shows the analysis of the 10 indicators measuring information and communication between the various respondents within the school, between schools and overall.

Table 4.11: Descriptive analysis of information and control

Indicator			1	2	3	4	5	Total
se1	Overall	Freq.	16	6	29	82	71	204
		Percent	7.7	2.9	14.4	40.4	34.6	100.0
se2	Overall	Freq.	2	12	26	106	59	205
		Percent	1.0	5.8	12.5	51.9	28.9	100.0
se3	Overall	Freq.	6	6	20	92	80	204
		Percent	2.9	2.9	9.6	45.2	39.4	100.
se4	Overall	Freq.	12	16	12	102	62	204
		Percent	5.8	7.7	5.8	50.0	30.8	100.0
se5	Overall	Freq.	8	10	20	86	80	204
		Percent	3.9	4.8	9.6	42.3	39.4	100.0
se6	Overall	Freq.	6	18	53	65	62	204
		Percent	2.9	8.7	26.0	31.7	30.8	100.0
se7	Overall	Freq.	22	8	14	90	70	204
		Percent	10.6	3.9	6.7	44.2	34.6	100.0
se8	Overall	Freq.	14	14	23	77	76	204
		Percent	6.7	6.7	11.5	37.5	37.5	100.0
se9	Overall	Freq.	20	25	16	73	70	204
		Percent	9.6	12.5	7.7	35.6	34.6	100.
Se10	Overall	Freq.	10	8	28	79	79	204
		Percent	4.8	3.9	14.4	38.5	38.5	100.

4.9 Monitoring Descriptive analysis

This variable sought to find out among other indicators the perception of the respondents that there are independent process checks of controls activities on ongoing basis. Majority (50%) of the respondents strongly agreed, 84.6% of the respondents agreed or strongly agreed that there are independent process checks of

controls activities on ongoing basis while 7.7% of the respondents disagreed or strongly disagreed.

The results imply that in majority national public secondary schools, there are independent process checks of controls activities on ongoing basis, monitoring is therefore done consistently and thus risk prone areas can be easily identified and preventive measures undertaken. Loopholes and opportunity to commit fraud is therefore eliminated and new ways of mitigating risk can easily be established. However in some few schools, independent process checks of controls activities on ongoing basis is lacking. This may give an opportunity to commit fraud and due to the long span of time and lack of independent checks such fraud can easily be covered up.

Respondents were also asked the question whether internal reviews of implementation of internal controls are conducted periodically. Majority (36.5%) of the respondents agreed that internal reviews of implementation of internal controls are conducted periodically while 23.1% of the respondents were neutral. Some 65.4% of the respondents agreed or strongly agreed that internal reviews of implementation of internal controls are conducted periodically while 11.5% of the respondents disagreed or strongly disagreed.

From the results it can be concluded that in majority of the schools, internal reviews of implementation of internal controls are conducted periodically. This ensures that the internal control systems are modified regularly to suit the changing needs. New technological developments are embraced to strengthen the internal controls and hence improve financial accountability. However in about 10% of the national public secondary schools, internal reviews of implementation of internal controls are not conducted periodically ,this imply that weaknesses in the internal control systems may not be identified early enough.

Regarding the question of whether external auditors visit the school frequently. Majority (47.1%) of the respondents agreed, 67.3% of the respondents agreed or

strongly agreed that external auditors visit the school frequently, 18.3% of the respondents were neutral while 14.5% disagreed or strongly disagreed.

The overall results imply that in majority of the national public schools, the external auditors visit the school frequently. This therefore puts the BOM to task to ensure stipulated government regulations are followed. The frequency of these visit ill encourage transparency and accountability. Any anomalies in the financial statement can be identified early enough and opportunity to commit fraud will be minimised. However in some few schools, external auditors do not visit the school frequently. This will give a big room for laxity in updating financial statement regularly, opportunity to commit fraud and fraudulent activities may be easily accounted for irregularly.

The study also sought what the respondents perceived of the question that external auditors are committed and give objective reports. Majority (43.3%) of the respondents agreed, 76% of the respondents agreed or strongly agreed that external auditors are committed and give objective reports, 15.4% of the respondents were neutral while 8.7% disagreed or strongly disagreed.

From the overall results, many external auditors are committed and give objective reports. They therefore will not collude to serve their own self-interest or receive gains/bribes to cover up loses funds, irregular actives and fraudulent activities. Any case of fraud is therefore exposed and reported for necessary action to be taken. However there is a small percentage of external auditors who are not committed to their work and do not give objective reports. Such external auditors may ask for bribed to cover-up fraud. Such fraud is therefore not reported and the government and other stakeholders end up losing funds to pocket of a few people. They may even become petty and give punitive reports to get financial favours from the school managers.

Respondents were also asked their view on whether timely review of audit reports assist in improving financial accountability. Majority (46.2%) of the respondents agreed that timely review of audit reports assist in improving financial accountability

while 8.7% of the respondents were neutral. Some 80.8% of the respondents agreed or strongly agreed that timely review of audit reports assist in improving financial accountability while 10.6% of the respondents disagreed or strongly disagreed.

These results depict that many respondents support the fact that timely review of audit reports assist in improving financial accountability. The public schools BOM can identify their areas of financial management weakness and take necessary action to improve. The BOM should therefore regularly review audit report if they are to step a notch higher in financial accountability.

The results also determined the distribution of the indicator that the BOM monitor the actual uses of funds budgeted and approved. Majority (42.3%) of the respondents agreed, 79.8% of the respondents agreed or strongly agreed that the BOM monitor the actual uses of funds budgeted and approved, 8.7% of the respondents were neutral while 11.5% disagreed or strongly disagreed.

From the results it can be concluded that in majority of the schools, the BOM monitor the actual uses of funds budgeted and approved. They therefore ensure that the funds are used for the stipulated purposes and any misuse or misappropriations of funds can therefore be easily detected and acted upon. However in about 10% of the schools, BOM does not monitor the actual uses of funds budgeted and approved. The management of such finances are therefore left to the principal and the bursar and therefore high chances of fictitious expenditures and cover-up of fraud will be rampant.

Respondents were also asked their view on whether internal reviews of internal controls are conducted periodically. Majority (44.2%) of the respondents agreed that internal reviews of internal controls are conducted periodically while 19.2% of the respondents were neutral. Some 68.2% of the respondents agreed or strongly agreed that internal reviews of internal controls are conducted periodically while 12.5% of the respondents disagreed or strongly disagreed. These results indicate that in majority of the schools, internal reviews of internal controls are conducted periodically. New developments and technological changes can therefore be

embraced and implemented to improve internal control systems. However in some few schools, internal reviews of internal controls are not conducted periodically thus in such schools new technological development of improving internal controls will not be implemented and fraudsters may develop better ways of leakages that cannot be detected.

The respondents were also asked about whether the BOM undertake regular comparison of actual with budgeted expenditure. Majority (44.2%) of the respondents strongly agreed, 82.7% of the respondents agreed or strongly agreed that the BOM undertake regular comparison of actual with budgeted expenditure. 5.8% of the respondents were neutral while 11.6% disagreed or strongly disagreed.

From the foregoing results, in majority of the national public schools, the BOM regularly undertake regular comparison of actual with budgeted expenditure. This assists in identifying reasons for nay variances that were not approved. Such variances can therefore be curbed in future unless justified. However in about 10% of the schools, the BOM do not undertake regular comparison of actual with budgeted expenditure. This may result to wide variances that may have been in their control and thus prudent financial management is at stake.

The study also sought what the respondents perceived of the question that the BOM verify all financial approvals and monitors use of funds. Majority (47.1%) of the respondents agreed, 80.8% of the respondents agreed or strongly agreed that the BOM verify all financial approvals and monitors use of funds, 11.5% of the respondents were neutral while 7.7% disagreed or strongly disagreed.

The results confirm that in majority of the national public secondary schools, the BOM verify all financial approvals and monitors use of funds. This means that only justified and approved expenditures will be undertaken. The approved expenditures are also monitored to ensure no leakages of resources. However in some few schools, the BOM does not verify all financial approvals and do not monitor use of funds. This imply that unapproved expenditures may be incurred and funds may not be used for the intended purpose but may end up benefitting a few people.

The respondents were also asked their view on the fact that the frequency and objectivity of internal audits determines level of financial accountability. Majority (49%) of the respondents strongly agreed that the frequency and objectivity of internal audits determines level of financial accountability while 7.7% of the respondents were neutral. Some 76.9% of the respondents agreed or strongly agreed that there are independent process checks of controls activities on ongoing basis while 15.4% of the respondents disagreed or strongly disagreed.

From the results it can be concluded that majority of the respondents believe that the frequency and objectivity of internal audits determines level of financial accountability. Thus if national public secondary schools carried out internal audit more frequently, many anomalies may be identified and improvement if need be will be undertaken. Objective internal audits without collusions and cover ups will greatly improve transparency and there by improve financial accountability. Table 4. 12 shows the analysis of the 11 indicators measuring control environment.

Table 4.12: Descriptive analysis of monitoring

Indicator			1	2	3	4	5	Total
sf1	Overall	Freq.	6	10	16	71	101	204
		Percent	2.9	4.8	7.7	34.6	50.0	100.0
sf2	Overall	Freq.	10	14	47	74	59	204
		Percent	4.8	6.7	23.1	36.5	28.9	100.0
sf3	Overall	Freq.	12	18	37	96	41	204
		Percent	5.8	8.7	18.3	47.1	20.2	100.0
sf4	Overall	Freq.	8	10	31	88	67	204
		Percent	3.9	4.8	15.4	43.3	32.7	100.0
sf5	Overall	Freq.	14	8	18	94	70	204
		Percent	6.7	3.9	8.7	46.2	34.6	100.0
sf6	Overall	Freq.	10	14	18	86	76	204
		Percent	4.8	6.7	8.7	42.3	37.5	100.0
sf7	Overall	Freq.	6	20	39	90	49	204
		Percent	2.9	9.6	19.2	44.2	24.0	100.0
sf8	Overall	Freq.	12	12	12	78	90	204
		Percent	5.8	5.8	5.8	38.5	44.2	100.0
sf9	Overall	Freq.	4	12	23	96	69	204
		Percent	1.9	5.8	11.5	47.1	33.7	100.0
Sf10	Overall	Freq.	22	10	16	56	100	204
		Percent	10.6	4.8	7.7	27.9	49.0	100.0

4.10 Inferential Analysis

The general objective of this study was to evaluate the effect of internal control systems on financial accountability in national public secondary schools in Kenya. Inferential analysis was carried out using statistical tools to assess for relationship between study variables and the influences of the independent variables and the dependent variable (Financial accountability). For inferential analysis, dimension reduction was carried out on the observed indicators of each study construct to yield latent variables as uni-dimensional composite measurements for each construct. The results for confirmatory factor analysis yielded factor scores that were used as latent variables.

The secondary data collected was used for fitting models to assess the study objectives considering the schools as the unit of analysis. The data structures for the

2 datasets differed such that the secondary data for the dependent variable was collected longitudinally over a period of 4 years for each school while the primary data collected was cross-sectional with multiple levels of analyses and observation considering 3 respondents per school. Both datasets were therefore collapsed and aggregated to level-2 (school-level) for plausibility of analysis. The total units of analysis thus resulted to 68 schools after aggregation.

4.10.1 Correlations analysis

To assess the strength and direction of relationships between the study variables, pairwise Pearson product moment correlation coefficients were generated for each pair of variables. The correlation analysis results are presented in Table 4.1 which is a matrix showing Pearson correlation coefficients between 2 sets of variables with p-values of each correlation coefficient in brackets. X_1, X_2, X_3, X_4 and X_5 in the table represents the latent constructs of the independent variables Control environment, Control activities, Risk assessment, information & communication and Monitoring respectively.

Y was the overall composite measure of the latent dependent financial accountability generated from the secondary data observed variables current ratio, debt ratio, debt collection rate and change in public equity used in the study to measure financial accountability. $Y_{1,}$ Y_2, Y_3 and Y_4 are the individual variables current ratio, debt ratio and change in public equity respectively. Y^0 is the latent variable financial accountability generated from the primary data collection tool.

According to (Crossman, 2013), Correlation analysis results give a correlation coefficient which is a measure of the linear association between two variables. In this study, the correlation coefficients were tested for significance at the 5% level of significance based on a 2-tailed test. The rejection criterion was thus based on a p-value of 0.025 above which the association is deemed to be insignificant and vice versa. The strength of the correlation was measured based on the Pearson correlation scale.

The correlation coefficient ranges from -1.0 to +1.0 and the closer the coefficient is to +1 or -1, the more closely the two variables are related. A correlation of +1 implies that there is perfect positive linear relationship between variables (Sekran U., Bougie & Roger, 2010). All the independent variables showed no significant correlation with other independent variable. All the p-values of the correlation coefficients between any 2 independent variables were found to be above 0.025 implying insignificant correlations.

The insignificant correlations between independent variables were an indication of non-multicollinearity amongst the study exogenous variables. Both the latent variables from the primary data collection questionnaire and the composite latent variable generated from the secondary dataset showed significant correlation with all the independent variables with p-values all less than 0.025. Table 4.16 shows the correlation Matrix.

Table 4.13: Correlations matrix

	x_1	x_2	x_3	x_4	x_5	Y^0	Y_1	Y_2	Y_3	Y_4	Y
x_1	1										
x_2	0.269	1									
	(0.108)										
x_3	0.180	0.084	1								
	(0.288)	(0.622)									
x_4	0.208	0.210	0.349	1							
	(0.217)	(0.211)	(0.034)								
x_5	0.270	0.299	0.252	0.417	1						
	(0.106)	(0.073)	(0.133)	(0.01)							
Y^0	0.511*	0.514*	0.381	0.555*	0.516*	1					
	(0.001)	(0.001)	(0.02)	(0.000)	(0.001)						
Y_1	0.470*	0.472*	0.088	0.158	0.377	0.512*	1				
	(0.003)	(0.003)	(0.605)	(0.349)	(0.022)	(0.001)					
Y_2	-0.081	-0.210	0.070	-0.237	0.216	0.002	-0.225	1			
	(0.632)	(0.213)	(0.682)	(0.158)	(0.199)	(0.99)	(0.18)				
Y_3	0.488*	0.350	-0.077	0.066	0.222	0.394*	0.892*	-0.244	1		
	(0.002)	(0.034)	(0.649)	(0.698)	(0.186)	(0.016)	(0.000)	(0.146)			
Y_4	0.514*	0.430*	0.060	0.139	0.264	0.479*	0.912*	-0.280	0.948*	1	
	(0.001)	(0.008)	(0.724)	(0.411)	(0.114)	(0.003)	(0.000)	(0.093)	(0.000)		
Y	0.587*	0.610*	0.470*	0.515*	0.603*	0.819*	0.680*	-0.088	0.544*	0.613*	1
	(0.000)	(0.000)	(0.003)	(0.001)	(0.000)	(0.000)	(0.000)	(0.606)	(0.001)	(0.000)	

4.10.2 Models and diagnostics tests

Further to correlation analysis, regression models were fitted to assess the causal relationships (influences) of each independent variable on financial accountability. In this section only the latent variable generated from the secondary data was used as the measure of financial accountability. The regression models fitted were theoretically based on econometric assumptions of normality of the model residuals, homoscedasticity of the residuals, non-autocorrelation of the residuals and non-multicollinearity of the independent variables. Each model fitted was thus tested for the assumptions.

4.10.2.1 Tests of Normality

A fitted histogram for the residuals of the overall multivariate regression model is shown in figure 4. 1. As virtually seen from the histogram, the residuals formed a

bell shaped histogram density plot as expected which indicated possibility of normally distributed model residuals

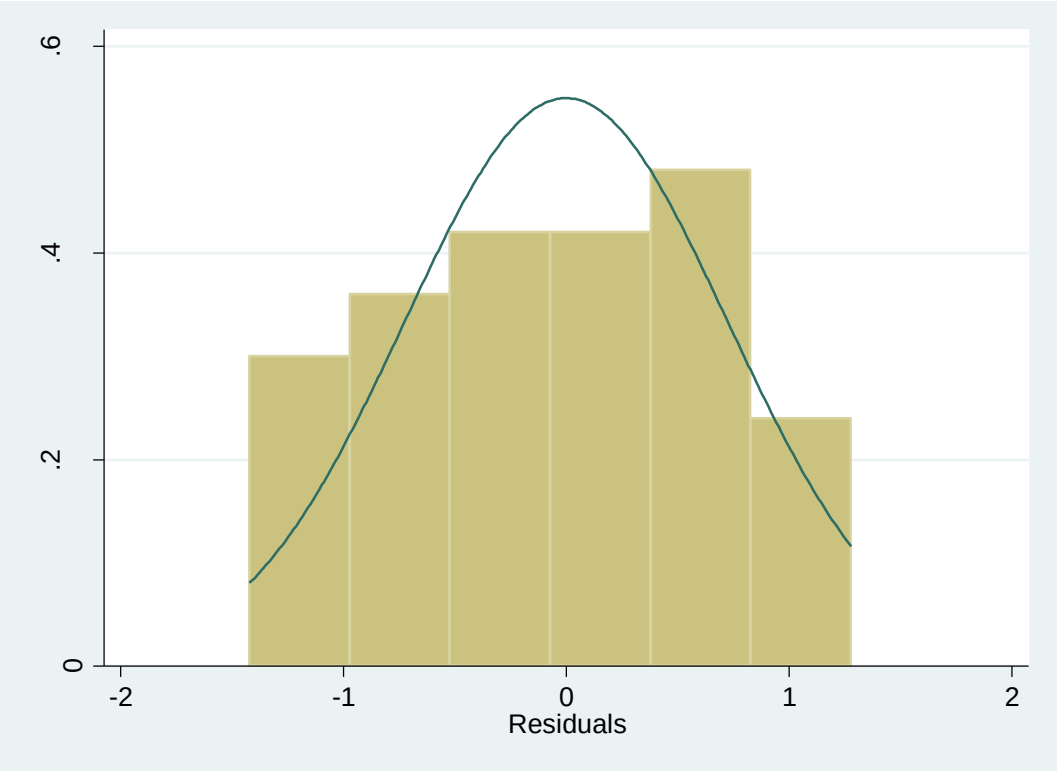


Figure 4.1: Model residuals Histogram

Further to the histogram plot, the study also tested for normality of the residuals using Jacque-Bera test which is based on the levels of skewness and the kurtosis. Theoretically, normality is associated with a skewness of 0 and a kurtosis of 3. The Jaque-Bera test as used assessed whether the residuals significantly deviated from normality by deviation from skewness of 0 and Kurtosis of 3. The results of the Jaque Bera test show that the residuals did not deviate from the skewness of 0 and Kurtosis of 3 as indicated by the probabilities of skewness and kurtosis 0.167 and 0.119 respectively which are both greater than 0.05. The joint test showed that the Jaque-Bera chi-square statistic of deviation from normality also had a p-value greater than 0.05 implying normality of the residuals. Table 4.14 show the results of the Jaque Bera test.

Table 4.14: JB Tests of Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	Joint adj chi2(2)	Joint Prob>chi2
Financial Accountability (Y)	68	0.858	0.421	0.700	0.706
Model residuals	68	0.530	0.910	0.410	0.814

4.10.2.2 Test for Auto-Correlation

Independence of error terms was assessed through the Durbin-Watson (DW) which checked that the residuals of the models were not auto-correlated since independence of the residuals is one of the basic hypotheses of regression analysis. Its statistic ranges from zero to four. The Durbin-Watson value should be around 2, if the value of Durbin-Watson is below 1 then there is serial correlation (Garson, 2012). The calculated Durbin-Watson statistic was compared to the tabulated Durbin-Watson statistics for a model with 5 predictors excluding the intercept and sample size of 37. The tabulated Durbin-Watson table is shown in appendix 8. In this model, calculated Durbin Watson statistic was higher than the upper limit of the tabulated value. Table 4. 15 shows non-autocorrelation of the model residuals thus implying independence.

Table 4.15: Model Summary

Durbin-Watson statistic	Tabulated lower limit	Tabulated Upper limit
1.952	1.464	1.768

4.10.2.3 Test for Multicollinearity

Linear regression models are also based on the assumption of non-multicollinearity of independent variable. This assumption implies that no independent variable should be expressible as a linear function of other independent variable. To assess multicollinearity, the Variance inflation factors (VIFs) were calculated for each independent variable and the reciprocals (tolerances). The rule of thumb is that the VIFs should not be more than 10. All the VIFs are less than 2 implying none of the

independent variables being studied violates the assumption. Table 4. 16 sows results of test for multicollinearity.

Table 4.16: Multicollinearity

Variable	VIF	Tolerance
Control environment(x_1)	1.410	0.710
Control activities(x_2)	1.300	0.767
Risk assessment(x_3)	1.270	0.786
Info. & communication(x_4)	1.190	0.839
Monitoring(x_5)	1.140	0.876
Mean VIF	1.260	

4.10.2.4 Test for Heteroscedasticity

A classical assumption in linear model estimation is that the residual term is homoscedastic. A test for Heteroscedasticity was thus performed to confirm that the residuals of the model fitted do not exhibit Heteroscedasticity. A scatter plot showing the residuals against the predicted values was plotted for a virtual indication on the presence or absence of Heteroscedasticity. The scatter plot in figure 4.2 does not show any signs of an increasing or decreasing pattern of the residuals against the predicted values. The plots are however randomly distributed about zero which is a sign of homoscedasticity.

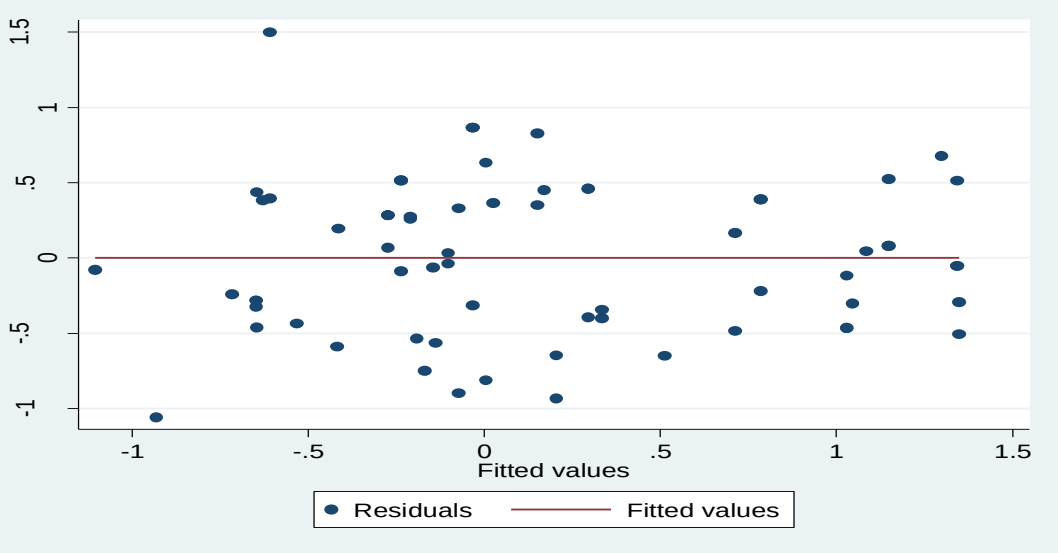


Figure 4.2: Residual plot against predicted values

Further, a statistical test of Heteroscedasticity was carried out to confirm homoscedasticity with statistical significance. The Breach-Pagan test was carried out where the BP statistic was computed for the residuals. The BP tests the hypothesis that H0: residuals do not exhibit Heteroscedasticity (residuals are homoscedastic). The P-value of the BP chi-square was found to be greater than 0.05 represented in table 4.17 implying that the residuals do not exhibit Heteroscedasticity thus meeting the homoscedasticity assumption.

Table 4.17: Heteroscedasticity Results

	chi2(1)	**Prob > chi2**	**Conclusions**
BP test	2.26	0.1331	Fail to reject H_0

4.10.3 Effect of Control Environment on Financial accountability

Factor analysis was used to generate factor scores that were used as latent variables to assess the influence of Control Environment on financial accountability using simple linear regression. A scatter plot of financial accountability against Control Environment in figure 4. 8 shows an increasing pattern which is also shown by an

increasing linear function of the line of best fit. This is an indication of a positive linear relationship between control environment and financial accountability.

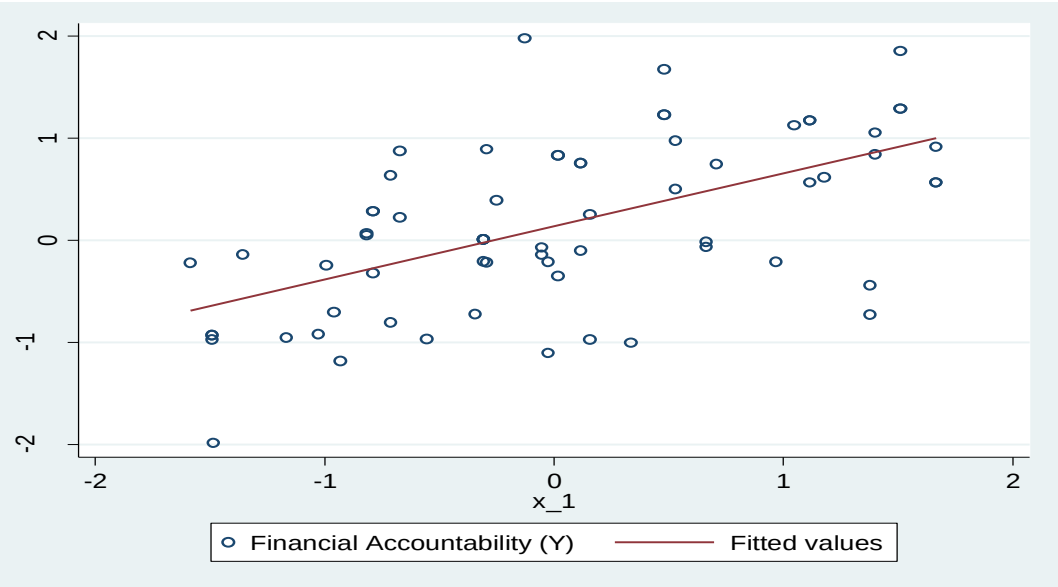


Figure 4.3: Control environment and financial accountability

A bivariate simple linear regression was fitted to assess the influence of Control Environment on financial accountability. The results for the regression model in table 4. 18 Show an R-square of 0.344 implying that 34.4% of the variation in financial accountability is explained by the one predictor model. This further implies that 65.6% of the variation in growth is not explained in this model but by other factors not included in the model.

The Analysis of Variance (ANOVA) had an F-statistic of 33.14 which had a p-value of 0.000. The p-value of the F-statistic is less than 0.05 showing that the model on the influence of control environment on financial accountability is generally significant. This is means that the coefficient of control environment in the model is at least not equal to zero. Diagnosis of this bivariate model showed that the classical assumptions are also not violated in the simple regression model. The normality assumption was met as shown by the JB statistic which has a p-value of 0.822 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.618 which is greater than 0.05 implying that the residuals to this model also exhibit

homoscedasticity. The DW statistic generated for this model is also greater than the relative upper limit of the tabulated DW value at 0.05 implying independence of the residuals.

The regression estimates of the regression model show that Control environment has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of control environment (β =0.519, t=5.760, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of control environment in the national school set-up would increase the levels of the financial accountability index by 0.519 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 4.18: Control environment & financial accountability

ANOVA	**Source**	**SS**	**df**	**MS**	**Number of obs**	=	**68.000**
	Model	15.510	1	15.510	F(1, 66)	=	33.140
	Residual	30.888	66	0.468	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.334
Model	BP chi2(1)	= 0.25	JB chi2(2)	= 0.39	Adj R-squared	=	0.324
	Prob > chi2	= 0.618	Prob > chi2	= 0.822	Root MSE	=	0.684
diagnostics	D W values	1.901	LL =1.583	UL= 1.641			

FA (Y)	**Coef.**	**Std. Err.**	**t**	**P>t**	[95% Conf.	Interval]
Control Environment (X_1)	0.519	0.090	5.760	0.000	0.339	0.700
_cons	0.135	0.083	1.630	0.108	-0.031	0.301

H_{O1}: There no significant effect of Control Environment on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Control Environment was 0.000 which is less than 0.05 implying a significant effect of Control Environment on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Control Environment has a significant effect on financial

accountability in national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was however found to be insignificant with a p-value of 0.108 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.519X_1 + \varepsilon$$ **……Equation 4.1**

The results are in line with other research findings that include (Widyaningsih, 2015) who carried out a study entitled "The Influence of Internal Control System on the Financial Accountability of Elementary Schools in Bandung, Indonesia". F test was used to establish if control environment influences financial accountability. F results shows 3. 356 which is bigger than table value of 1.974716 thus concludes that control environment significantly influences financial accountability.

(Ndembu, 2015)Results in a study titled "The effect of internal controls on the financial performance of manufacturing firms in Kenya" also indicate the same trend. The Pearson's correlation coefficient between return on asset and control environment was 0.683 which implies that an increase in control environment increases the returns on asset of manufacturing firms.

(Nyakarimi & Karwirwa, 2015) Found similar results on a study "Internal Control System as Means of Fraud Control in Deposit Taking Financial Institutions in Imenti North Sub-County". Observed ANOVA test value above (20.935) is greater than Critical value F (4, 79) = 2.49 at 95 percent confidence level and falls in the rejection region. Therefore the conclusion was that there is significant relationship between control environment and fraud control in financial institutions.

(Mawanda, 2008) Found similar results in a study on effects of internal control systems on financial performance in an institution of higher learning in Uganda: a case of Uganda Marytrs University. The results indicate that control environment is positively related with accountability with r = 0.338 and standard error, $p < 0.01$.

(Zauwiyah & Mariati, 2008) in a study on the Control Environment, Employee Fraud and Counterproductive Workplace Behaviour: An Empirical Analysis established through regressing control environment items against fraudulent behavior a strong correlation of all items at 99% confidence level.

4.10.4 Effect of Control Activities on Financial Accountability

The study also sought to assess the effect of control activities on financial accountability. Factor analysis was used to generate factor scores that were used as latent variables to assess the influence of Control Activities on financial accountability using simple linear regression. A scatter plot of financial accountability against Control Activities in figure 4.4 shows an increasing pattern which is also shown by an increasing linear function of the line of best fit. This is an indication of a positive linear relationship between Control Activities and financial accountability.

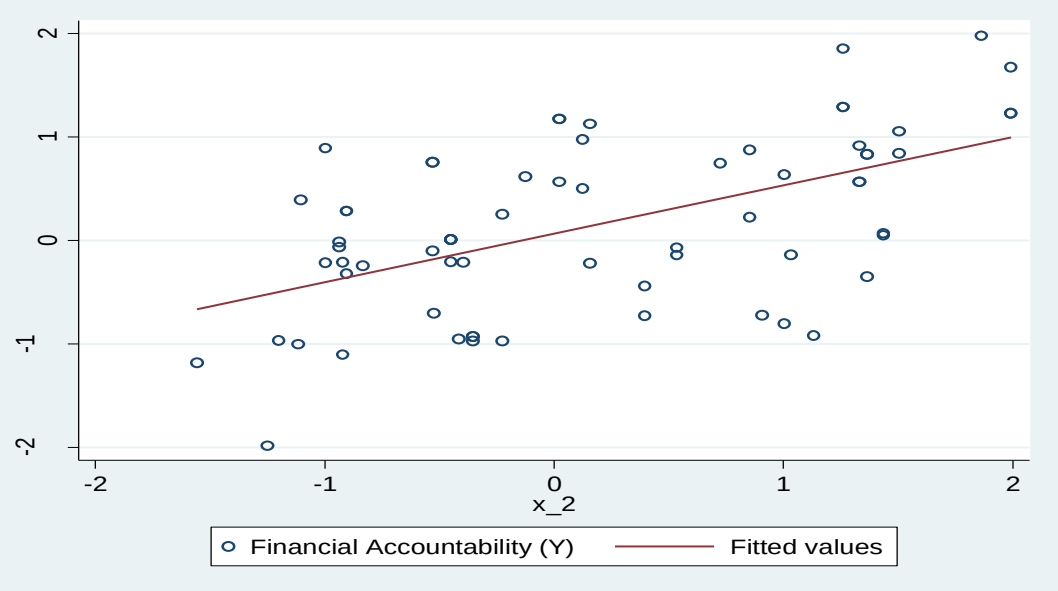


Figure 4.4: Control Activities and financial accountability

A bivariate simple linear regression was also fitted to assess the influence of Control Activities on financial accountability. As presented in table 4.19, the regression model results show an R-square of 0.306 implying that 30.6% of the variation in

financial accountability is explained by the one predictor model. This further implies that 69.4% of the variation in growth is not explained in this model but by other factors not included in the model.

The Analysis of Variance (ANOVA) has an F-statistic of 29.05 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.05 showing that the model on the influence of Control Activities on financial accountability is generally significant. This is means that the coefficient of Control Activities in the model is at least not equal to zero. Diagnosis of this bivariate model showed that the classical assumptions are also not violated in the simple regression model. The normality assumption was met as shown by the JB statistic which has a p-value of 0.256 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.956 which is greater than 0.05 implying that the residuals to this model also exhibit homoscedasticity. The DW statistic generated for this model is also greater than the relative upper limit of the tabulated DW value at 0.05 implying independence of the residuals.

The regression estimates of the regression model show that Control Activities has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Control Activities (β =0.468, t=5.390, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of Control Activities in the national school set-up would increase the levels of the financial accountability index by 0.468 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 4.19: Control activities and financial accountability

ANOVA	Source	SS	df	MS	Number of obs	=	68
	Model	14.182	1	14.182	F(1, 66)	=	29.050
	Residual	32.216	66	0.488	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.306
Model	BP chi2(1)	= 0.000	JB chi2(2)	= 2.72	Adj R-squared	=	0.295
	Prob > chi2	= 0.956	Prob > chi2	= 0.256	Root MSE	=	0.699
diagnostics	D W values	1.879	LL =1.583	UL= 1.641			

FA (Y)	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Control Activities X_2	0.468	0.087	5.390	0.000	0.295	0.642
_cons	0.066	0.086	0.760	0.449	-0.107	0.238

HO_2: There no significant effect of Control Activities on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Control Activities was 0.000 which is less than 0.05 implying a significant effect of Control Activities on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Control Activities has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was however found to be insignificant with a p-value of 0.449 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.468X_2 + \varepsilon$$ **……Equation 4.2**

These results are consistent with other researches that found out similar results. Ndungu (2013) in a study on the "Effect of internal controls on revenue generation: a case study of the university of Nairobi enterprise and services limited" found out that control activities had appositive relationship with revenue generation.

Similar results were obtained by Wachira, Ngahu S. and Wagoki (2014), in a study "Effects of Financial Controls on Financial Management in Kenya's Public Sector: A Case of National Government Departments in Mirangine Sub-County, Nyandarua County" whose results indicate that the control activities relates positively with prudence and accountability with $r= 0.394$, $p < 0.01$.

(Ndembu, 2015)Results in a study titled "The effect of internal controls on the financial performance of manufacturing firms in Kenya" also indicate the same trend. The Pearson's correlation coefficient between return on asset and control environment was 0.683 which implies that an increase in control environment increases the returns on asset of manufacturing firms.

A study with similar results was carried out by; (Mwakimasinde, Odhiambo & Byaruhanga, 2014) on "Effects of Internal Control Systems on Financial Performance of Sugarcane out grower companies in Kenya" The study found a positive significant effect of control activities on the financial performance.

4.10.5 Effect of Risk Assessment on Financial Accountability

Factor analysis was used to generate factor scores that were used as latent variables to assess the influence of Risk Assessment on financial accountability using simple linear regression. A scatter plot of financial accountability against Risk Assessment in figure 4. 5 shows an increasing pattern which is also shown by an increasing linear function of the line of best fit. This is an indication of a positive linear relationship between Risk Assessment and financial accountability.

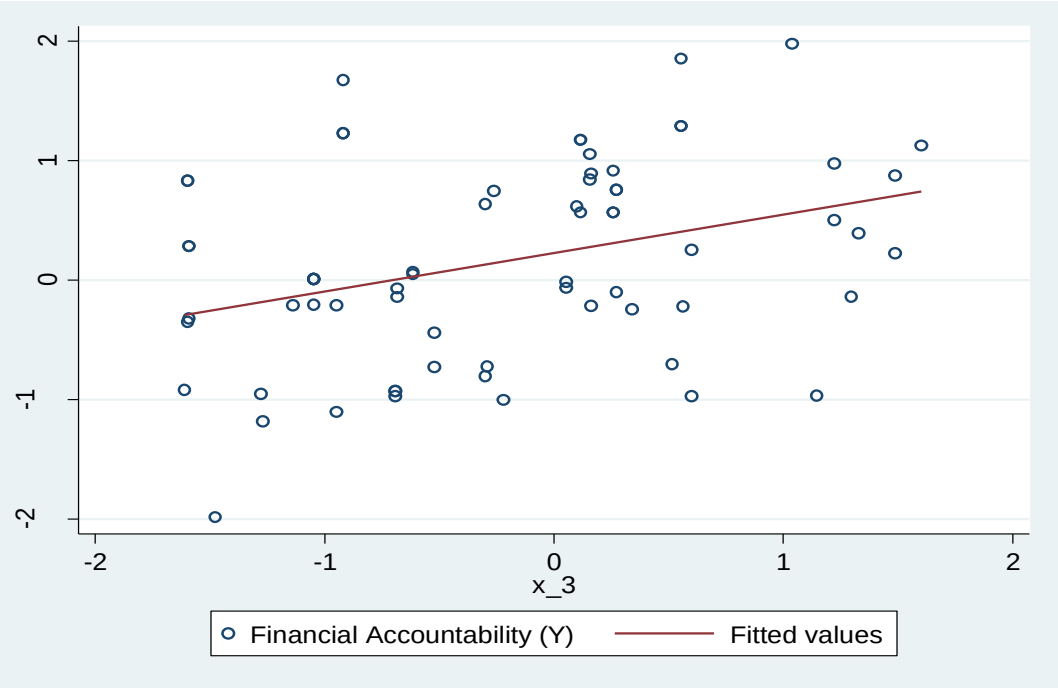


Figure 4.5: Risk Assessment and financial accountability

A bivariate simple linear regression was fitted to assess the influence of Risk Assessment on financial accountability. The results for the regression model in table 4.20 Show an R-square of 0.121 implying that 12.1% of the variation in financial accountability is explained by the one predictor model. This further implies that 87.9% of the variation in growth is not explained in this model but by other factors not included in the model.

The Analysis of Variance (ANOVA) has an F-statistic of 9.11 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.05 showing that the model on the influence of Risk Assessment on financial accountability is generally significant. This is means that the coefficient of Risk Assessment in the model is at least not equal to zero. Diagnosis of this bivariate model showed that the classical assumptions are also not violated in the simple regression model. The normality assumption was met as shown by the JB statistic which has a p-value of 0.650 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.713 which is greater than 0.05 implying that the residuals to this model also exhibit

homoscedasticity. The DW statistic generated for this model is also greater than the relative upper limit of the tabulated DW value at 0.05 implying independence of the residuals.

The regression estimates of the regression model show that Risk Assessment has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Risk Assessment (β =0.322, t=3.020, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of Risk Assessment in the national school set-up would increase the levels of the financial accountability index by 0.322 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 4.20: Risk assessment and financial accountability

ANOVA	**Source**	**SS**	**df**	**MS**	**Number of obs**	=	**68**
	Model	5.626	1	5.626	F(1, 66)	=	9.110
	Residual	40.772	66	0.618	Prob > F	=	0.004
	Total	46.398	67	0.693	R-squared	=	0.121
Model	BP chi2(1)	= 0.13	JB chi2(2)	= 0.86	Adj R-squared	=	0.108
	Prob > chi2	= 0.713	Prob > chi2	= 0.650	Root MSE	=	0.786
diagnostics	D W values	2.036	LL =1.583	UL= 1.641			
	FA (Y)	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval**
Risk Assessment X_3		0.322	0.107	3.020	0.004	0.109	0.536
	_cons	0.226	0.098	2.300	0.024	0.030	0.421

HO_3: There no significant effect of risk assessment on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Risk Assessment was 0.000 which is less than 0.05 implying a significant effect of Risk Assessment on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that risk assessment has a significant effect on financial accountability in

national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was found to be significant with a p-value of 0.02 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$Y = 0.226 + 0.322X_3 + \varepsilon$**……....Equation 4.3**

The results are in line with a study by (Mwachiro, 2013) on the effects of internal controls on revenue collection: a case of Kenya revenue authority (KRA) who found similar results. They established that there is a positive relationship between the risk assessment and revenue collection in KRA with ($r = 0.447$, $P<0.05$)

(Mugenda, Momanyi & Naibei, 2012) In a study on the implications of risk management practices on financial performance of sugar firms in Kenya found similar results. Pearson correlation coefficients (r) was used to determine the interplay of risk management practices and performance of Sugar manufacturing firms. The study indicates a more than average positive relationship between risk management practices and performance ($r =0.67$).

4.10.6 Effect of Information and communication on Financial Accountability

Factor analysis was used to generate factor scores that were used as latent variables to assess the influence of Information and Communication on financial accountability using simple linear regression. A scatter plot of financial accountability against Information and Communication in figure 4. 6 shows an increasing pattern which is also shown by an increasing linear function of the line of best fit. This is an indication of a positive linear relationship between Information and Communication and financial accountability.

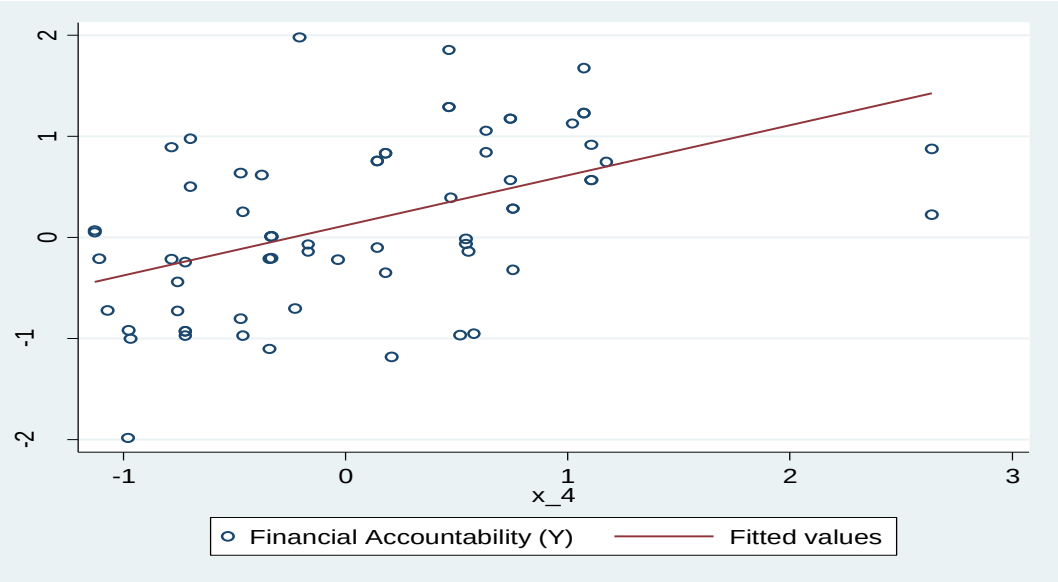


Figure 4.6: Information and Communication and financial accountability.

A bivariate simple linear regression was fitted to assess the influence of Information and Communication on financial accountability. The results for the regression model in table 4. 21 Show an R-square of 0.239 implying that 23.9% of the variation in financial accountability is explained by the one predictor model. This further implies that 73.4% of the variation in growth is not explained in this model but by other factors not included in the model.

The Analysis of Variance (ANOVA) has an F-statistic of 20.72 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.5 showing that the model on the influence of Information and Communication on financial accountability is generally significant. This is means that the coefficient of Information and Communication in the model is at least not equal to zero. Diagnosis of this bivariate model showed that the classical assumptions are also not violated in the simple regression model. The normality assumption was met as shown by the JB statistic which has a p-value of 0.962 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.928 which is greater than 0.05 implying that the residuals to this model also exhibit homoscedasticity. The DW statistic generated for this model is also greater than the relative upper limit of the tabulated DW value at 0.05 implying independence of the residuals.

The regression estimates of the regression model show that Information and Communication has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Information and Communication (β =0.497, t=4.550, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of Information and Communication in the national school set-up would increase the levels of the financial accountability index by 0.497 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 4.21: Information & communication and financial accountability

ANOVA	**Source**	**SS**	**df**	**MS**	**Number of obs**	=	**68**
	Model	11.088	1	11.088	F(1, 66)	=	20.720
	Residual	35.311	66	0.535	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.239
Model	BP chi2(1)	= 0.01	JB chi2(2)	= 0.08	Adj R-squared	=	0.227
	Prob > chi2	= 0.928	Prob > chi2	= 0.962	Root MSE	=	0.731
diagnostics							
	D W values	2.025	LL =1.583	UL= 1.641			
	FA (Y)		**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf. Interval**
Information & communication		X_4	0.497	0.109	4.550	0.000	0.279 0.715
_cons			0.118	0.089	1.320	0.191	-0.060 0.296

H_{O4}: There no significant effect of information and communication on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Information and Communication was 0.000 which is less than 0.05 implying a significant effect of Information and Communication on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Information and Communication has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was however found to be insignificant with a p-value of 0.191

which is greater than 0.05 implying that the equation represents a linear function through the origin.

$Y = 0.497X_4 + \varepsilon$**……..Equation 4.4**

The results are in line with the findings of Mwachiro B. Brian on the effects of internal controls on revenue collection: a case of Kenya revenue authority (KRA) whose results reveal that there is a direct correlation between Information and Communication and Revenue Collection in KRA ($r = 0.317$, $P<0.01$).

Another study on Internal Control System as Means of Fraud Control in Deposit Taking Financial Institutions in Imenti North Sub-County by (Ngigi & Kawira, 2015) had observed ANOVA test value above (96.809) is greater than Critical value F (3,80) = 2.72 at 95 percent confidence level, showing that information and communication plays an important role in fraud control.

Another study with similar results was carried out by (Mwakimasinde, Odhiambo & Byaruhanga, 2014).The regression results also shows that 42.8 percent of performance of Sugarcane out grower companies can be explained by information and communication with (Rsquared = 0.428). This means that information and communication helps increase performance of Sugarcane out grower companies by 42.8 percent.

4.10.7 Effect of Monitoring on Financial accountability

Factor analysis was used to generate factor scores that were used as latent variables to assess the influence of Monitoring on financial accountability using simple linear regression. A scatter plot of financial accountability against Monitoring in figure 4. 7 shows an increasing pattern which is also shown by an increasing linear function of the line of best fit. This is an indication of a positive linear relationship between Monitoring and financial accountability.

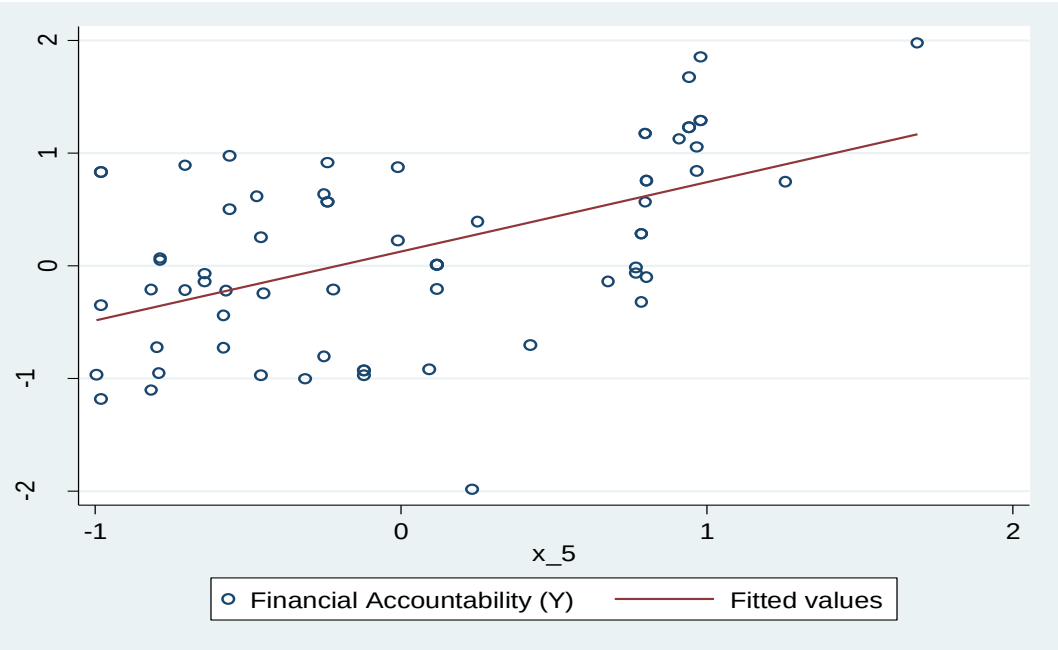


Figure 4.7: Monitoring and financial accountability

A bivariate simple linear regression was fitted to assess the influence of Monitoring on financial accountability. The results for the regression model in table 4. 22 Show an R-square of 0.276 implying that 27.6% of the variation in financial accountability is explained by the one predictor model. This further implies that 63.7% of the variation in growth is not explained in this model but by other factors not included in the model.

The Analysis of Variance (ANOVA) has an F-statistic of 25.16 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.5 showing that the model on the influence of Monitoring on financial accountability is generally significant. This is means that the coefficient of Monitoring in the model is at least not equal to zero. Diagnosis of this bivariate model showed that the classical assumptions are also not violated in the simple regression model. The normality assumption was met as shown by the JB statistic which has a p-value of 0.421 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.646 which is greater than 0.05 implying that the residuals to this model also exhibit homoscedasticity. The DW

statistic generated for this model is also greater than the relative upper limit of the tabulated DW value at 0.05 implying independence of the residuals.

The regression estimates of the regression model show that Monitoring has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Monitoring (β =0.616, t=5.020, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of Monitoring in the national school set-up would increase the levels of the financial accountability index by 0.616 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 4.22: Monitoring and financial accountability

ANOVA	**Source**	**SS**	**df**	**MS**	**Number of obs**	=	**68**
	Model	12.806	1	12.806	F(1, 66)	=	25.160
	Residual	33.592	66	0.509	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.276
Model	BP chi2(1)	= 0.21	JB chi2(2)	= 1.73	Adj R-squared	=	0.265
	Prob > chi2	= 0.646	Prob > chi2	= 0.421	Root MSE	=	0.713
diagnostics	D W values	1.813	LL =1.583	UL= 1.641			

FA (Y)	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf. Interval**	
Monitoring X_5	0.616	0.123	5.020	0.000	0.371	0.861
_cons	0.128	0.087	1.480	0.145	-0.045	0.301

HO_5: There no significant effect of Monitoring on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Monitoring was 0.000 which is less than 0.05 implying a significant effect of Monitoring on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Monitoring has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The

constant term of the model was however found to be insignificant with a p-value of 0.145 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.616X_5 + \varepsilon$$ .....**Equation 4.5**

A study by (Mwachiro, 2013) Brian on the effects of internal controls on revenue collection: a case of Kenya revenue authority (KRA) found similar results. The study demonstrated that there is a significant relationship between Monitoring and Revenue Collection in KRA ((r = 0.482, P<0.01).

Another study by (Ngigi S. & Kawira, 2015) on Internal Control System as Means of Fraud Control in Deposit Taking Financial Institutions in Imenti North Sub-County showed similar results. The test statistics computed for monitoring was (25.769) which is bigger than Critical value (F (4, 79) = 2.49) at 95 percent confidence level and therefore falls in rejection region. The null hypothesis that there is no significant relationship between monitoring and fraud control in financial institutions is therefore rejected and alternative hypothesis is accepted. This means that there is significant relationship between monitoring and fraud control in financial institutions.

4.10.8 Joint Effect of Control Systems on Financial Accountability

To explore the combined effect of the independent variables (control systems) on Financial Accountability, a multiple regression model was established as shown in Table 4. 23. The results for the regression model show an R-square of 0.634 implying that 63.4% of the variation in financial accountability is explained by the multiple regression model. This imply that only 20.6% of the variation in growth is not explained in this model but by other factors.

The dimensions of control systems were found to have a significant joint effect on financial accountability. The Analysis of Variance (ANOVA) has an F-statistic of 21.56 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.05

showing that the model on the influence of control systems on financial accountability is generally significant. This is means that at the coefficients of control systems are jointly not equal to zero and least one coefficient estimate of the model predictors not equal to zero.

The diagnosis of this model showed that the classical assumptions are also not violated in the simple regression model. The normality assumption was met as shown by the JB statistic which has a p-value of 0.813 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.133 which is greater than 0.05 implying that the residuals to this model also exhibit homoscedasticity. The DW statistic generated for this model is also greater than the relative upper limit of the tabulated DW value at 0.05 implying independence of the residuals. The mean VIF of was found to be 1.230 which is less than 2 implying that the independent predictors in the model do not exhibit multicollinearity.

Table 4.23: Joint effect model

ANOVA	**Source**	**SS**	**df**	**MS**	**Number of obs**	=	**68**
	Model	29.455	5	5.891	F(5, 62)	=	21.560
	Residual	16.944	62	0.273	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.635
Model	BP chi2(1)	= 2.26	JB chi2(2)	= 0.41	Adj R-squared	=	0.605
	Prob > chi2	= 0.133	Prob > chi2	= 0.813	Root MSE	=	0.523
diagnostics	D W values	1.953	LL = 1.464	UL= 1.768	Mean VIF	=	1.26

FA (Y)	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf. Interval**	
Control environment (x_1)	0.269	0.078	3.450	0.001	0.113	0.424
Control activities (x_2)	0.296	0.071	4.170	0.000	0.154	0.43o8
Risk assessment (x_3)	0.136	0.065	2.091	0.041	-0.016	0.288
Info. & communication (x_4)	0.133	0.093	1.440	0.155	-0.052	0.318
Monitoring(x_5)	0.343	0.103	3.340	0.001	0.138	0.548
_cons	0.090	0.067	1.340	0.186	-0.044	0.224

On assessing the coefficient estimates of each predictor, four variables were found to remain significantly influential to financial accountability except for information and communication (β =0.133, t=1.440, p-value = 0.155). The p-value of the coefficient

estimate for information and communication in this model more than 0.05 implying insignificance when jointly assessed with other variables. The constant term of the model was also found to be insignificant with a p-value of 0.186 which is greater than 0.05 implying that the equation represents a linear function through the origin. The equation below is generated from the multiple regression model.

$$Y = 0.269X_1 + 0.296X_2 + 0.136X_3 + 0.343\,X_5 + \varepsilon$$ ……**Equation 4.6**

These results are in line with the findings of (Njeri, 2014). The researcher sought to establish the extent to which internal control impact on financial performance of manufacturing firms‟. The results of the multiple regression model shows that there is a positive relationship between internal control and financial performance of manufacturing firms in Kenya. This implies that a single unit increase in any of the independent variables results into a corresponding increase in financial performance of manufacturing firms. The regression analysis was undertaken at 5% significance level. The results above show that the variables were significant since their corresponding predictor values were below 5% apart from information and communication which had 6% meaning when assessed with other variables it is insignificant.

4.10.11 Summary of Hypotheses tests

Table 4.24 shows a summary of hypothesis tests of the relationship of all the five independent variables (Control environment, control activities, risk assessment, information and communication and monitoring and the dependent variable (financial accountability).

Table 4.24: Summary of Hypotheses tests

Hypothesis	Estimate	P-value	Conclusion
H_{01}: There no significant effect of control environment on financial accountability in national public secondary schools in Kenya.	$\beta_1 = 0.570$	0.000	Reject H_{01}
H_{02}: There is no significant effect of control activities on financial accountability in national public secondary schools in Kenya.	$\beta_2 = 0.559$	0.000	Reject H_{02}
H_{03}: There is no significant effect of risk assessment on financial accountability in national public secondary schools in Kenya.	$\beta_3 = 0.453$	0.003	Reject H_{03}
H_{04}: There is no significant effect of information and communication on financial accountability in national public secondary schools in Kenya.	$\beta_4 = 0.565$	0.001	Reject H_{04}
H_{05}: There is no significant effect of monitoring on financial accountability in national public secondary schools in Kenya.	$\beta_5 = 0.747$	0.000	Reject H_{05}

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The main objective of this study was to evaluate the effect of internal control systems on financial accountability in national public secondary school in Kenya. The specific objectives were; to evaluate the effect of control environment, control activities, risk assessment, information/communication and monitoring on financial accountability in national public secondary schools in Kenya. This chapter presents the summary of major findings of the study, the conclusions of the effect of internal control systems on financial accountability in national public secondary school in Kenya and recommendations for further research.

5.2 Summary of Findings

This study was conducted on the foundation that internal control systems positively affects financial accountability in national public secondary school in Kenya. Both theoretical and empirical literature was reviewed. From this review a conceptualization of the relationship between internal control systems and financial accountability was done. The hypothesized relationship was then tested empirical with the guidance of the specific objectives.

The specific objectives were; to evaluate the effect of control environment on financial accountability in national public secondary schools in Kenya, to determine the effect of control activities on financial accountability in national public secondary schools in Kenya, to ascertain the effect of risk assessment on financial accountability in national public secondary schools in Kenya, to examine the effect of information and communication on financial accountability in national public secondary schools in Kenya and to assess the effect of monitoring on financial accountability in national public secondary schools in Kenya.

The study used both primary and secondary data to analyze this conceptualized relationship. Primary data was collected principals, bursars and BOM chairs by use of questionnaire. The questionnaire was tested both for reliability using Cronbach's alpha through a pilot study and validity using factor analysis for construct validity. Internal control systems constructs; control environment control activities, risk assessment information and communication and monitoring were measured qualitatively using a five point likert scale. Financial accountability was measured quantitatively qualitatively using financial ratios including, liquidity ratio, debt ratio, debt Collection rate and change in public equity and qualitatively using state of books of accounts, nature of audit reports, transparency and safety of assets

For inferential analysis, dimension reduction was carried out on the observed indicators of each study construct to yield latent variables as uni-dimensional composite measurements for each construct. The results for confirmatory factor analysis yielded factor scores that were used as latent variables. To assess the strength and direction of relationships between the study variables, pairwise Pearson product moment correlation coefficients were generated for each pair of variables.

Regression models were also fitted to assess the causal relationship of each independent variable on financial accountability. Each regression model fitted was tested for normality of the model residuals using Jacque-Bera test, homoscedasticity of the residuals using Breach-Pagan test, non-autocorrelation of the residuals using Durbin-Watson test and non-multicollinearity using Variance inflation factors of the independent variables. The Analysis of Variance (ANOVA) was used to show the significance of the regression models.

5.2.1 Control Environment and Financial Accountability

The first objective was to evaluate the effect of control environment on financial accountability in national public secondary schools in Kenya, the results indicate an R-square of 0.344 implying that 34.4% of the variation in financial accountability is explained by the one predictor model. The Analysis of Variance (ANOVA) has an F-statistic of 33.14 which has a p-value of 0.000. The p-value of the F-statistic is less

than 0.05 showing that the model on the influence of control environment on financial accountability is generally significant. The regression estimates of the regression model show that Control environment has a significant effect on financial accountability.

5.2.2 Control Activities and Financial Accountability

The second objective of this study was to determine the effect of control activities on financial accountability in national public secondary schools in Kenya, the results indicate an R-square of 0.306 implying that 30.6% of the variation in financial accountability is explained by the one predictor model. This further implies that 69.4% of the variation in growth is not explained in this model but by other factors not included in the model. The Analysis of Variance (ANOVA) has an F-statistic of 29.05 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.05 showing that the model on the influence of Control Activities on financial accountability is generally significant .The regression estimates of the regression model show that control activitieshas a significant effect on financial accountability.

5.2.3 Risk Assessment and Financial Accountability

The third objective was to ascertain the effect of risk assessment on financial accountability in national public secondary schools in Kenya. The results for the regression model show an R-square of 0.121 implying that 12.1% of the variation in financial accountability is explained by the one predictor model. This further implies that 87.9% of the variation in growth is not explained in this model but by other factors not included in the model. The Analysis of Variance (ANOVA) had an F-statistic of 9.11 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.05 showing that the model on the influence of Risk Assessment on financial accountability is generally significant. The regression estimates of the regression model show that risk assessment has a significant effect on financial accountability.

5.2.4 Information/Communication and Financial Accountability

The fourth objective of this study was to examine the effect of information and communication on financial accountability in national public secondary schools in Kenya. The results for the regression model in show an R-square of 0.239 implying that 23.9% of the variation in financial accountability is explained by the one predictor model. This further implies that 73.4% of the variation in growth is not explained in this model but by other factors not included in the model.

The Analysis of Variance (ANOVA) has an F-statistic of 20.72 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.5 showing that the model on the influence of Information and Communication on financial accountability is generally significant. The regression estimates of the regression model show that Information and Communication has a significant effect on financial accountability.

5.2.5 Monitoring and Financial Accountability

The fifth objective of the study was to assess the effect of monitoring on financial accountability in national public secondary schools in Kenya. The results for the regression model show an R-square of 0.276 implying that 27.6% of the variation in financial accountability is explained by the one predictor model. This further implies that 63.7% of the variation in growth is not explained in this model but by other factors not included in the model. The Analysis of Variance (ANOVA) has an F-statistic of 25.16 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.5 showing that the model on the influence of Monitoring on financial accountability is generally significant. The regression estimates of the regression model show that Monitoring has a significant effect on financial accountability.

5.3 Conclusion

This section contains conclusions based on the data analysis results, theoretical and empirical evidence.

5.3.1 Effect of Control Environment on Financial Accountability

A positive and significant relationship exists between control environment and financial accountability in national public secondary schools in Kenya. This implies that when control environment improves, financial accountability will improve. Control environment may be improved through, selecting BOM that are committed and have accounting knowledge, enforcing a positive management philosophy for efficiency, and improving integrity and ethical values of BOM.

The BOM therefore will not have self-vested interest in the national public secondary school finances. This also imply that BOM are knowledgeable of legal accounting procedures and clearly understand financial statements. Any anomalies in the financial statements will be easily identified and acted upon. The BOM will be committed to their oversight role of monitoring uses of funds in the schools and this will culminate into improved financial accountability evidenced through efficiency, transparency and accuracy of records.

5.3.2 Effect of Control Activities on Financial Accountability

A positive and significant relationship exists between control activities and financial accountability in national public secondary schools in Kenya. This implies that when control activities improve, financial accountability will improve. Control activities may be improved through; segregation of duties that will ensure those who authorize expenditure are not the ones that execute the expenditure, authorization of activities which will eliminate non-priority expenditures and authenticate all expenditures, and improving physical controls which ensures physical tracking of valuable assets and ensuring their safety. Financial accountability will improve through safety of assets, elimination of fictitious expenditure and reduced opportunity to commit fraud through collusions.

5.3.3 Effect of Risk Assessment on Financial Accountability

A positive and significant relationship exists between risk assessment and financial accountability in national public secondary schools in Kenya. This implies that when risk assessment improve, financial accountability will improve. Risk assessment may be improved through; identification of risk prone areas, risk prevention and management, frequent risk assessment and risk mitigation. This ensures that risks are preempted and mitigation techniques planned for in advance. Frequent assessment of the internal controls will also ensure that new technological developments for improved risk management are adopted. As such the risk management technique will be proactive and thus opportunity and justification to commit fraud will be reduced thus improved financial accountability.

5.3.4 Effect of information and Communication

A positive and significant relationship exists between information and Communication and financial accountability in national public secondary schools in Kenya. This implies that when information and Communication improve, financial accountability will improve. Information and Communication, may be improved through; provision of complete, reliability, correct and timely information. This will ensure that financial statements are prepared in time, are correctly prepared and reflect a true and fair view of the school. It also implies that budgets and audit reports are analyzed and acted upon. Financial accountability will therefore be evidenced through accurate financial statements, unqualified audit report and adherence to budgets.

5.3.5 Effect of Monitoring on Financial Accountability

A positive and significant relationship exists between Monitoring and financial accountability in national public secondary schools in Kenya. This implies that when monitoring improves, financial accountability will improve. Monitoring, may be improved through, frequent internal audit by BOM, objective external audits by school auditors and improved BOM oversight. Financial accountability will improve

through, internal audit trail of all revenues and expenditure, verification of actual and budgeted expenditure, finances will be used for the intended purpose and unauthorized expenditure and opportunity and rationalization of fraud will be eliminated thus there will be compliance to policy regulations.

5.4 Recommendations of the Study

Based on the study findings, the following recommendations have been made.

5.4.1 Control Environment and its effect on Financial Accountability

BOM members should have basic training in accounting, finance and procurement related courses. This will enhance understanding of financial activities and financial records. Such BOM members will therefore be able to identify any anomalies in the financial statements and take necessary action. They will also ensure that books of accounts are prepared according to policy regulations. In-service training on a regular basis should also be done to BOM members to equip them with new financial management techniques and changes in public management policies.

BOM should be appointed based on integrity and ethical values. Such BOM members therefore will not have self-vested interest in the finances of national public secondary schools managed by them. They will be committed to their oversight role and will thus reduce opportunity to commit fraud in the said national public secondary schools. Any individual who has had integrity issues should not be allowed candidate for being principal a school or BOM member. Any misconduct by BOM members should be acted upon swiftly by the government and the necessary legal action be taken on such members. Such BOM members should not be allowed to manage any other school in the country.

5.4.2 Control Activities and its effect on Financial Accountability

The government should ensure segregation of duties in the public schools, there should be clear roles of the principal, bursar, other BOM members, storekeeper and

other employees. Budgeting process and procurement should be done by different individuals.

Verification and reconciliation of valuable assets should be done by different independent individuals this will ensure those who authorize expenditure are not the ones that execute the expenditure, thus collusions and opportunity to commit fraud is minimized. The principal should not be left to be the sole manager with other BOM members and employees just being a rubber stamp.

The government should strengthen authorization of activities. No expenditure should be incurred in the pretext of being an emergency unless authorized, blank signing of cheques to be used in emergencies should be a no go zone as these may encourage fictitious expenditures and provide a big opportunity to commit fraud. This will also eliminate non-priority expenditures and authenticate all expenditures.

The BOM should improve physical controls. Impromptu checks of ongoing projects and approved expenditure should be frequently done. All budgeted expenditures must be compared with actual expenditures and any variances clearly explained. Authentic documentation for all expenditure must be demanded his which ensures physical tracking of valuable assets and ensuring their safety.

5.4.3 Risk Assessment and its effect on Financial Accountability

The government should strive to improve risk assessment to step up financial accountability. Key financial risks in national public secondary schools should be should be identified, risk prone areas and activities should be preempted so that preventive measures are put in place well in advance.

The government should interlink the schools bank accounts to a central accounting information system so that any payments and withdrawals can be tracked. The schools should also have interlinked computers so that those involved in management of finances can easily track expenditures and receipts. All major expenditures must be approved not only by BOM but also relevant government

authorities. This will eliminate collusion by BOM members to approve unjustified expenditures where thy have self-interest.

Every national public secondary school have a risk management program which must be presented annually for review by experts. Frequent risk assessment must be done by BOM. Ongoing training should be given priority to all BOM members so that new developments and technique of mitigating risk are made known to them. This ensures that risks are preempted and mitigation techniques planned for in advance. Frequent assessment of the internal controls will also ensure that new technological developments for improved risk management are adopted. As such the risk management technique will be proactive and thus opportunity and justification to commit fraud will be reduced thus improved financial accountability.

Every national public secondary school should have CCTV to monitor all activities in the school. This will reduce pilferage and loss of school property through students and employees. It will also assist in tracking strangers within the School. There should be an insurance policy for all valuable assets of the school so as to avoid heavy losses and enable continued operations due to loss of such items. Security checks should also be tightened in all these schools.

5.4.4 Information and Communication and its effect on financial accountability

The government should interlink all schools through a central financial information system to tack activities of every school. All budgets and financial statements of all national public secondary schools should be posted to this website online and subjected to public audit by auditor general. This will allow for public scrutiny of such budgets and financial statements.

The government should enforce early preparation of Budgets and ensure involvement of that all the relevant department/sections and such departments should be coopted in the acquisition of budgeted items. All budgets should be posted to the government central information website and must be approved by both BOM and relevant government authorities. This will minimize variances arising due to

unbudgeted and unauthorized expenditures. It will also allow for public scrutiny of such budgets.

5.4.5 Monitoring and its effect on Financial Accountability

The government should employ a permanent internal auditor in each national public secondary school. Such an auditor should be independent and report directly to the government on monthly basis Monitoring. The BOM should also carry out regular internal audits to monitor use of finances.

There should be frequent external audits by county auditors. Such audits should be objective and reflect the true financial status of the school. Auditors should be scrutinized frequently so that those with self-interest to benefit financially from the audit activities are rooted out. If any anomalies are established in the budgets or financial statements after clean bill of health is given to the financial statements or budgets of a school by the county auditor or any collusions by the auditor and the management of a national public secondary school is identified, the auditor must be held accountable.

The BOM should take their oversight role seriously. They should frequently visit the schools to monitor implementation of projects and verify budgeted and actual expenditures. BOM should not have vested interest in school finances as this will derail their oversight role. Financial accountability will improve through, internal audit trail of all revenues and expenditure, verification of actual and budgeted expenditure, finances will be used for the intended purpose and unauthorized expenditure and opportunity and rationalization of fraud will be eliminated thus there will be compliance to policy regulations.

5.5 Contribution of the Thesis

The government will find the results of this research essential in developing policies that will enhance financial management not only in public schools but also other public institutions. An improvement in the internal control systems will improve

financial accountability as depicted by the study results. Government, students, parents, donors and other stakeholders will there save on funds that may be misappropriated and benefit a few individuals.

Principals and other BOM members will be able to learn new techniques of effectively and efficiently managing the public school finances. They will be able to embrace new risk management techniques and frequently monitor uses of funds through comparison of budgeted and actual expenditure. Budget variances will be reduced and loopholes and opportunities that encourage fraud will be sealed they will also be able to strengthen/ improve on their oversight role to improve financial accountability in these public secondary schools. This will improve value for money invested by all stake holders in education and public institutions.

5.6 Areas for Further Research

Further research can be done to determine the influence of information and communication on financial accountability in other public institutions of higher learning since it was found to be insignificant when regressed with other factors of internal controls. This will assist in proving whether information and communication has an influence of financial accountability or not.

This study was limited to national public secondary schools in Kenya. A comparative study should be done to establish the effects of internal control systems on financial accountability technical/ TVET institutions in Kenya. This will assist in establishing whether the results of these study which show that improved internal controls leads to improved financial accountability can be reliably be applied to these technical institutions so as to enhance financial accountability in such schools for the benefit of all stakeholders.

Further research can be done on the role of external auditing on financial accountability in Public secondary or primary schools in Kenya. This will give light on whether external auditing has assisted in preventing and controlling fraud in public schools. Considering the fact that these auditors are employed by the

government to monitor and give an objective audit opinion on the financial statements of public schools. The existence of such auditors should therefore lead to improved financial accountability. Yet cases of misappropriations are still witnesses in some public schools.

REFERENCES

Abdooulaye G. S. , Rohaida B. & Mohammed J. (2018). Fraud prevention in Malaysian Small and Medium Enterprises(SMEs). *Journal of financial Crime, 25*(2), 499-517.

Andrew C. & Sayag G. (2010). The effectiveness of internal auditing in organizations. *Australian Accounting Review, 54*(20), 297-307.

Asher H. B. (2013). *Theory building and data analysis in social sciences. .* Stockholm: Copenhagen Business School Press.

Auditor General. (2016/2017). *Financial statements for Ministries, departments, Commissions, funds and other accounts of the National government.* Nairobi: Government of Kenya Printer.

Babbie, E. (1990). *Survey Research Methods.* Belmont Calif :Wadsworth Publishing Company.

Bailey, K. D. (1987). *Methods of Social Research* (3rd. ed.). New York: Free Press.

Carslaw C., Richard M. & Mills J. R. (2007). Audit timeliness of school district audits. *Journal of Public Budgeting, Accounting and Financial Management, 19*(3), 290-316.

Center for popular democracy and action now. (2015). *Risking Public Money. Illinois Charter School Fraud Best Practices to protect public Dollars and prevent financial Mismanagement.* Chicago: Center for popular democracy and action now.

Cohen J. ,Cohen P., West S. & Aiken L. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Erlbaum: Mahwah N.J.

Committee of Sponsoring Organization of the Treadway Commission(COSO). (2010). *Integrated Internal Control Framewok.* New York: AICPA.

Committee of Sponsoring Organizations of the Trade way Commission(COSO). (2013). *Internal control Integrated Framework:Internal control and fraud deterrence.* New York: AICPA.

Cooper D. & Schindler P. (2011). *Business Research Methods.* New Delhi-India: McGraw-Hill Publishing, Co. Ltd.

Cressey, D. R. (1953). *Other People's Money.* Montclair: NJpp: Patterson Smith.

Creswell, W. J. (2003). *Research Design: Qualitative,Quantitative and Mixed Methods Approaches* (2nd ed.). London: Sage Publications.

Crossman, A. (2013). Convergence theory. *About.com Sociology*.

Curwin J. & Slater R. (2008). *Quantitative Methods for Decisions.* South Western: South Western Cengage, Learning.

David G. (2012). *Testing statistical assumptions.* North Carolina University. North Carolina: School of public international affairs.

Davies, A. (2004). Moving base into high-value integrated solutions: A value stream approach. *Industrial and Corporate Change, 13*(5), 727-756.

Davis J. H., Allen, M. R. & Hayes H. D. (2014). Is blood thicker than Water? A study of stewardship perceptions in family business. *Entrepreneurship Theory and Practice,* 1093–1116.

Deis D.R. & Giroux G. A. (2009). Determinants of audit quality in the public sector. *The Accounting Review, 67*(3), 462-479.

Edwards P. ,Roberts I, Clarke M.,DiGuiseppi C., Pratap S., Wentz R. & Kwan I. (2002). Increasing Response Rates to Postal Questionnares: Systematic Review. *British Medicla Journal, 324*, 1183.

Einstnhardt K. (1989). Agency theory assessment and review. *The academy of management review, 4*(1), 57-74.

Ember C. R. & Ember M. (2001). *Cross-Cultural Rsearch Methods* (2ND ED. ed.). Lanham: AltaMira.

Ethics and Anti- Corruption Commission. (2015/2016). *Reports of activities and fianancial statements.* Nairobi: EACC.

Fornell C. & Larcker D.F. (1981). Evaluating Structural Models with Unorbservale Variables and Measurement Error. *Journal of marketing research*, 30-50.

Fraenkel J. R. & Norman E. W. (2014). *How to design and evaluate research in education* (4 ed.). San Francisco: McGraw-Hill.

Fraenkel R. J. & Wallen E. N. (2000). *How to design and evaluate research in education* (Fourth ed.). San Francisco: McGraw-Hill.

Fraenkel R. J. and Wallen E. N. (2000). *How to design and evaluate research in education* (Fourth ed.). San Francisco: McGraw-Hill.

Friedberg A. & Lutrin C. (2010). The internal audit in U.S. local governments in the 1990s: A status report and challenges. *Journal of Public Budgeting, Accounting and Financial Management,, 13*(3), 326-344.

Garcia, M. (2004). *Audit reports on financial statements of Accounting.* International Accounting Standards Board.

Garson, G. D. (2012). *Testing Statistical Assumptions.* Asheboro: Statistical Associates Publishing Blue Book Series.

Gbegi D.O, Adebisi J. F. & Makurdi J. (2015). Fraud and the Nigerian Public Sector Performance: The Need for Forensic Accounting. *International Journal of Business, Humanities and Technology, 5*(5), 53.

Glennerster R., Kremer M., Mbiti I. & Takavarasha K. (2011). *Access and Quality in the Kenyan Education System: A Review of the Progress, Challenges and Potential Solutions.* . Nairobi: The Abdul Latif Poverty Action Lab and Innovations for Poverty.

Goodwin, J. (2014). A comparison of internal audit in the private and public sectors. *Managerial Auditing Journal, 19*(5), 640-650.

Gujarati, D. N. (2003). *Basic Econometrics.* New York: McGraw -Hill Higher Education.

Hallak J. & Poisson M. (2015). Ethics and corruption in education. Results from the expert. *IIEP Observation Programme Policy. 1.* Paris: UNESCO.

Institute of Internal Auditors. (2009). *The role of auditing in public sector governance.* Altamonte Springs: Institute of Internal Auditors.

Institute of Policy Analysis and Research. (2014). *The sociology of Private Tuition.* Nairobi: The Kenya Government Printer.

Jabreen, Y. (2008). A new conceptual framework for sustainable development. *Environment, Development and Sustainability, 10*(2), 197-202.

Jensen M. C. & Meckling H. (1976). Theory of the firm: Managerial Behaviour, agency costs and ownership Structure. *Journal of Financial Economics, 8*(23), 167.

Kaguri, M. (2014). Financial management challenges facing implementation of freeday Secondary Education in Imenti North District, Kenya. *Journal of Business and Management, 16*(1), 55-78.

Kahavizakiriza R., Kisiangani B.W. & Wanyonyi D.K. (2015). Financial management in public secondary schools in Kenya: A Case Study of Lurambi Sub-County Kakamega County. *International Journal of Scientific and Technology research, 4*(9), 167.

Kamau P. M. & Rotich G. (2015). Effect of internal Control system on procurement procedures in constituency development funded projects a case of; Nyandarua County Kenya. *International Journal of Economics, Commerce and Management, 3*(6), 1173-1180.

Kaplan, D. (2009). *Structural Equation Modelling: Foundations and Extensions* (2nd ed.). Thousand Oaks: CA: SAGE.

Kenya Educational Management Institute (KEMI). (2013). Conference on education management capacity building of educational managers. Nairobi: Kenyan Government Printer.

Kenyon W. & Tilton P. D. (2006). *Potential red flags and fraud detection techniques: A Guide to Forensic accounting Investigation* (First ed.). New Jersey: John Wiley & Sons.

Kiragu D. N., Wanjau K. L., Gekara M. & Kanali C. (2013). Effects of bank growth on occupational fraud risks in commercial banks in Kenya. *International Journal of Social Sciences and Entrepreneurship, 1*(3), 469-480.

Kline, R. (2011). *Principles and practice of structural Equation modelling.* New York: The Guiford Press.

Kombo D.K. & Tromp D.L.A. (2009). *Proposal and Thesis Writing: An Introduction.* Nairobi Kenya: Don Bosco Printing Press.

Kothari C.R. & Gaurav G. (2014). *Research methodology* (Third ed.). New Delhi: New Age International Publishers.

Laaria, M. (2013). Leadership challenges in the implementation of ICT in public secondary schools in Kenya. *Journal of Educational learning, 2*(1), 52-69.

Laura J. Burton & Stephanie M. Mazerolle. (2011). Principles of survey instrument in athletic training education research. *Athletic Education Training Journal, 6*(1), 27-35.

Leitch C. , Hill F. M. & Harison H. (2010). *The Philosophy and practice of interpretivist research in Entrepreneurship: Quality, Validation and trust* (Vol. 13). Organizational Research Methods.

Levi, M. (2008). Organized frauds and organizing frauds: unpacking the research on networks and organization. *Journal of Criminology and Criminal Justice*, 389-419.

Lister, L. M. (2007). A Practical Approach to Fraud Risk: Internal Auditors. *International Journal of Social Sciences and Entrepreneurship, 6*(8), 48-60.

Makewa L. N., Meremo J.,Elizabeth R. & Jesse R. (2013). ICT in secondary school administration in rural southern Kenya: An Educator's eye on its importance. *International Journal of Education and Development using Information and Communication Technol, 9*(2), 48-63.

Mangoensetono, L. (2012). *An empirical analysis on the impact of the control environment in preventing fraud.* Netherlands.

Manurung D. T. H. & Hadian N. (2013). Detection Fraud of Financial Statement with Fraud Triangle. *Proceedings of the 23rd International Business Research Conference Marriott Hotel* (pp. 18-20). Melbourne Australia: International Business Research Conference.

Maronga E., Weda C.W. & Kengere D.O. (2013). An Investigation on the influence of government financial management on Kenyan Public Secondary Schools:

A Case of Sameta Division. *International Journal of Scientific and Technology Research, 2*(9), 34-50.

Marus E., Murezi C., Mwosi F. & Ogwel B. (2018, July). Internal control systems and financial accountability in Uganda: A case of selected districts in western Uganda. *International Journal of Commerce and Management Research, 4*(4), 106-111.

Mawanda, S. P. (2008). *Effects of Internal Control Systems in an Institution of Higher Learning in Uganda:A Case of Uganda Marytrs University.* Uganda Marytrs University.

Ministry of Education Science and Technology . (2010). *The Kenya education sector support programme.* Nairobi: The KenyanGovernment Printer.

Ministry of Education Science and Technology. (2012). *The development of Education in Kenya.* Nairobi: The Kenyan Government Printer.

Mohajan, H. (2017). *Two criteria for good measurements in Research: Validity and Reliability.* Chittagong: Premier University.

Moraa, E. O. (2015). *Factors affecting financial management of Public Secondary Schools in Marani Sub-County, Kenya.* Baraton: University of Eastern Africa.

Mugenda N. G.,Momanyi G. & Naibei K. I. (2012). Implications of Risk Management Practices on Financial Performance of Sugar Manufacturing Firms in Kenya. *International Journal of Arts and Humanities*, 14-29.

Munene, J. (2013). *Effects of internal controls on financial performance of Technical training institutions in Kenya.* Nairobi: Nairobi University.

Mwachiro, B. D. (2013). *Effects of Internal Controls on Revene Collection: A Case of Kenya Revenue Authority.* Nairobi: University of Nairobi.

Mwakimasinde M., Odhiambo A. & Byaruhanga J. (2014). Effects of Internal Control Systems on Financial Performance of Sugarcane outgrowercompanies inKenya. *Journal of Business and Management*, *6*(12), 62-73.

Natemeyer R.G. , Bearden W. O. & Sharma S. . (2003). Scaling procedures: Isues and Applications. *Thousand Oaks: Sage*.

Ndembu, Z. N. (2015). *THE Effect oF Intrenal Controls on the Financial Perfomance of Manufacturing Firms in Kenya.* University of Nairobi.

Ndungu, H. (2013). *The effect of internal controls on revenue generation: a case study of the University of Nairobi enterprise and Services Limited.* Nairobi: University of Nairobi).

Ngigi S. & Kawira M. (2015). Internal Control System as Means of Fraud Control in Deposit Taking Financial Institutions in Imenti North Sub-County. *Research Journal of Finance and Accounting*, *6*(16), 118.

Njeri, K. C. (2014). *Effect of Internal Controls on the Financial Perfomance of Manufacturing Firms in Kenya.* Nairobi: University of Nairobi.

Nyakarimi S. N. & Karwirwa M. (2015). Internal Control System as Means of Fraud Control in DepositTaking Financial Institutions in Imenti North Sub-County. *Research Journal of Finance and Accounting*, *6*(16), 118-128.

Nyakundi N. , Okioga C. , Ojera P. & Nyamao R. (2015). *An assessment of the effect of accounting practices on the management of funds in public secondary schools: a study of Kisii central district Kenya.* Nairobi University Printing Press.

Ochieng, M. E. (2013). *Challenges facing head teachers in financial management in public Secondary schools: a case of Kisumu east district Kenya.* Nairobi: University of Nairobi.

Oduol, T. (2011). Ethical issues: a cases study of secondary school leaders in Kenya. *The 34th AFSAAP Conference.* University of Wellington.

Ondieki, E. M. (2015). Factors affecting financial management of public secondary schools in Marani sub-county. *2*(1), 67-78.

Osiri, M. F. (2012). An assessment of the effect of accounting practices on the management of funds in public secondary schools: A study of Kisii central district, Kenya. *Asian Journal of Business and Management Sciences, 2*(8), 34-50.

Osiri, M. F. (2015). Perceptions of Educational Stakeholders Regarding the Effects of Financial Mismanagement on Physical Facilities in Secondary Schools in Gucha District, Kenya. *International Journal of Social Science and Economics Invention, 1*(3), 80-85.

Otieno O. H. , Atieno K. B. & Yambo Onyango J. (2014). *Effects of financial budgeting in the management of public Secondary schools in Uriri sub-county, Migori County, Kenya.* Rongo University.

Otieno S. & Nyagechi E. O. (2013). (Effectiveness of Internal Control Procedures on Management Efficiency of Free Primary Education Funds: a case of Public Primary schools in Kisii central District, Kenya. ,. *Journal of Sociology and Social Work, 1*(1), 22-41.

Polit D. & Beck L. (2003). *Nursing Research: Principles and Methods, L,*. ippincott, Williams and Wilkins.

Public Procurement Oversight Authority (PPOA). (2012). *Public Procurement Manual for Schools and colleges.* Nairobi: The Kenyan government Printer.

Ribstein, L. E. (2002, September). Market vs Regulatory responses to corporate fraud : A critique of Sarbanes-Oxley act 2002. *Journal of Corporation Law, 28*(1).

Roberts J.,Terry M. & Styles P. (2005). British Journal of Management. *Beyond agency conceptions of the work of the non-executive director: Creating accountability in the boardroom, 16*(1), 25-26.

Sabana, M. (2014). *Entrepreneur financial literacy, financial access, Transaction costs and performance of micro Enterprises in Nairobi city county; Kenya.* Nairobi: University of Nairobi.

Saunders M., Lewis P. & Adrian T. (2009). *Research Methods for Business Studies* (5 ed.). New York: Pearson Education.

Sekaran U. & Bougie R. (2011). *Research Methods for Business: A Skill Building Approach.* (5th ed. ed.). Delhi: New Delhi: Aggarwal printing press.

Sekran U., Bougie & Roger. (2010). *Research Methods for Business* (5th ed.). Wiley.

Simiyu, N. A. (2014). *Investigation of factors affecting cash management in Public Secondary Schools: a case of Mombasa County.* Nairobi: Kenyatta University.

Stout, L. (2003). Investors' choices: The shareholder as influence: Some empirical evidence on why investors in public corporations tolerate board governance. *University of Pennsylvania Law Review*, 667-712.

Tabachnick B. G. & Fidell L. S. (2007). *Using multivariate Statisitcs* (5th ed.). Boston inc: Pearson Education.

Tanner, J. J. (2006). *Financial Analysis and Fiscal Viability of Secondary Schools in Mukono District, Uganda.* Provo: Brigham Young University.

Tetlock P. E. & Lenner S. (1999). Accountability: A social check on the fundamental attribution error. *Social Psychology Quarterly, 48*(3), 227-236.

Transparency International Kenya. (2014). Corruption risk assessment of the education sector in Turkana county. *European Journal of Research and Reflection in Educational Sciences, 4*(2), 201-210.

Trevor W. , Anderson M. & Didier L. (2016). *Adjusting the Lens on Economic Crime.* Global Economic Crime Survey.

Victoria State Government . (2015). *Internal Controls for Victorian Government Schools.* East Melbourne: Communications DIvision for Financial Services Division epartment of Education and Training.

Wainaina, W. S. (2011). *An Evaluation of the Internal Control Function: The Case of Kenya Polytechnic University College.* Nairobi: University of Nairobi Kenya.

Wango G. & Gatere A. (2013). Leadership Professional Development Through Integrity and Financial Accountability: Curbing Fraudulent Practices in Schools. *Third Kenya education management institute conference on education management.* Nairobi: Kenya Education Management Institute.

Wichenje K. M. , Simatwa E. M.W., Okwom H. A. & Kegode E. A. . (2012). Challenges facing Head teachers in Public Secondary Schools in Kenya. *International Journal of Business and Management Invention, 21* (6), 76-87.

Widyaningsih, A. (2015). The Influence of Internal Control System on the Financial Accountability of Elementary Schools in Bandung, Indonesia. *Research Journal of Finance and Accounting, 6*(24), 89-96.

Wilfred, C. (2006). Philosophy, Methodology and Action Research. *Journal of Philosophy of Education, 40*(4), 421-436.

Yamane, T. (1967). *Statistics:An introductory Analysis* (2nd ed.). New York: Harper and Row.

Zauwiyah A. & Mariati N. (2008). *The Control environment employee fraud and counterproductive workplace behaviour: An empirical analysis.* Melaka, Malaysia: Multimedia University.

Zikmund G., Babin J., Carr J. & Griffin M. (2010). *Business Research Methods* (8th ed.). Natorp Boulevard mason: South-Western: Cengage Learning.

APENDICES

Appendix I: Questionnaire

Dear Sir/Madam, I humbly request you to participate in the above mentioned research. Confidentiality of all responses will be maintained due to the anonymity of the questionnaires. The information given in response to this survey will be purely used for academic purpose.

Section A. General Information

1. **Gender**

Gender	Female	Male
Tick where appropriate		

2. **Highest level of qualification**

Use the table below to indicate your highest level of qualification using a tick

Qualification	PhD	Masters	Bachelors	Diploma	Certificate
Highest level of qualification	5	4	3	2	1
Tick where appropriate					

3. **Number of years served in the school**

Use the table below to indicate the number of years you have served in the school

Number of years served	Below 1 year	1-2 years	2-3years	3-5 years	Above 5 years
Tick where appropriate					

4. **Use the table below to indicate the qualification in relation to accounting knowledge of BOM members**

BOM Academic Qualifications	Masters in accounting related course	Degree in accounting related course	Diploma in accounting related course	Certificate in accounting related course	No Accounting knowledge
Ranking	5	4	3	2	1
Tick where appropriate					

Section B: Control Environment and Financial Accountability

Using likert scale ranging from 5-1, please rate the extent to which you agree with the following statements.

No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
		5	4	3	2	1
1.	BOM is composed of individuals who have accounting knowledge.					
2.	The composition of the BOM has an effect on how funds are managed in your organization.					
3.	BOM has a working and documented philosophy which is adhered to.					
4.	BOM"s philosophy has a positive role in enhancing financial accountability					
4.	BOM are scrutinized for integrity and good conduct before engagement to a school					
5.	BOM have no vested interest in school expenditures and supplies					
6.	The ethical behaviors and					

	integrity of the BOM enhances financial accountability					
7.	The BOM provides feedback to all stakeholders about undertakings of the school					
8.	BOM are committed to their oversight role.					
9.	Policies and procedures for authorizations established are adhered to in all BOM undertakings.					
10.	There are formalized policies and procedures for major operations in the school.					

11. Briefly explain ways in which you think the BOM can be restructured or enhanced to improved financial accountability.

i. ……

ii. ……

iii. ……

iv. ……

v. ……..

..

Section C: Control Activities and Financial Accountability

Using a likert scale from 5-1, please rate the extent to which the following statements relate to control activities in your school.

No	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
		5	4	3	2	1
1.	There is segregation of duties such that authorizing, processing, recording and reviewing are done by different people					
2.	Segregation of duties has a					

	role in enhancing financial accountability					
3.	The School has clear authorization and approval procedures					
4.	It is possible for one staff to have access to all valuable information without the consent of the BOM.					
5.	Authorization assists in promoting financial accountability.					
6.	Proper verification before and after incurring any expenditure is strictly adhered to.					
7.	There is reconciliation of records on a regular basis					
8.	Verification and reconciliation of records play a role in financial accountability					
9.	Controls are in place to curb incurring expenditure in excess allocated funds					
10.	Budget reviews assist in enhancing financial accountability					

11 .Briefly highlight factors that you think may enhance control activities discussed above

i. ……

ii. ……

iii. ……

iv. ……

v. …….....

..**Section D: Risk Assessment and Financial Accountability**

Using a likert scale from 5-1, please rate the degree to which you agree with the following statements in relation to your school.

No	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
		5	4	3	2	1
1.	BOM identifies risks that affect achievement of the set objectives					
2.	BOM has a criteria for ascertainment of which fraud related risks to the School are most critical					
3.	Identification of risk plays a role in enhancing accountability					
4.	The BOM has put in place mechanisms for mitigation of critical risks that may result from fraud					
5.	All risk prone activities such as handling cash are closely monitored to minimize risk					
6.	Persons performing stock take do not have custody of items					
7.	The school security system identifies and safeguards institutional Assets.					
8.	Risk mitigation techniques are assessed and modified regularly					
9.	Prevention, control and management of risk affect financial accountability					
10.	Sound/acceptable accounting procedures are adhered to					

11. Briefly highlight factors that you think may hinder risk assessment in your school

i. ……

ii. ……

iii. ……

iv. ……

.

v. ……
..

Section E: Information/Communications System and Financial Accountability

Using a likert scale from 5-1 please rate the extent to which you agree with the following statements

No	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
		5	4	3	2	1
1.	All employees understand and are up to date on performance risks and the function of internal control					
2.	Communication enables and support understanding of internal control objectives.					
3.	Matters affecting the achievement of financial objectives are communicated to all parties					
4.	BOM ensures that reliable and relevant information is communicated all stakeholders in the school					
5.	Budgets and financial reports give true and fair view of the organization.					
6.	Budgets are given adequate time for scrutiny and verification					
7.	Pertinent information is identified, captured and distributed in a form and timeframe that supports the achievement of financial reporting objectives.					
8.	All relevant departments					

	are involved and consulted in the budget making process					
9.	Financial statements are reported and discussed by the BOM					
10.	Budget implementation reports are given back to the relevant departments in good time					

11. Briefly mention measures that government may put in place to enhance information and communication

i. ……..

ii. ……..

iii. ……..

iv. ……..

v. ……..

Section F: Monitoring and Financial Accountability

Using a likert scale from 5-1, please rate the extent to which you agree with the following statements.

	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
		5	4	3	2	1
1.	There are independent process checks of controls activities on ongoing basis					
2.	Internal reviews of implementation of internal controls are conducted periodically					
3.	External auditors visit the school frequently					
4.	External auditors are committed and give objective reports					
5.	Timely review of audit reports assist in improving financial accountability					
6.	BOM monitor the actual uses of funds budgeted and approved					
7.	Internal reviews of internal controls are conducted periodically					
8.	BOM undertake regular comparison of actual with budgeted expenditure.					
9.	BOM verify all financial approvals and monitors use of funds					
10.	The frequency and objectivity of internal audits determines level of financial accountability.					

11. Briefly explain the role of monitoring in enhancing financial accountability

i. ……

ii. ……

iii. ……

iv. ……

v. ……

.

Section G: Financial Accountability

Using a likert scale from 5-1, please rate the degree to which you agree with the following statements.

	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
		5	4	3	2	1
1.	Daily transactions are recorded when they occur and not accumulated					
2.	Financial records are accompanied with all relevant source documents for verification					
3.	Annual financial statements are prepared according to policy regulations					
4.	Financial reports reflect true and fair financial position of the school					
5.	Audit reports are unqualified i.e. the schools financial statements are fairly presented according to accepted accounting principles					
6.	Audit reports are communicated and acted upon					
7.	Budgets and financial statements have no misstatements or errors.					
8.	Financial statements are prepared in time					
9.	Safety measures are in place to safeguard all the school assets					
9.	Loss of assets investigated and acted upon					
10.	There is an insurance policy for sensitive and valuable assets					

11. Briefly explain how you think financial accountability can be improved.

i. ……..

ii. ……..…

…

iii. ……..

iv. ……..

v. ……..

Appendix II: Secondary Data Sheet

Financial Statement Item	**Operation Account**				**Tuition Account**				**School Fund Acc**			
Period	**2015**	**2016**	**2017**	**2018**	**2015**	**2016**	**2017**	**2018**	**2015**	**2016**	**2017**	**2018**
Current assets												
Cash in hand												
Cash at bank												
Fees arrears												
Investments												
Sundry debtors												
Other debtors												
Total												
Short term Liabilities												
Creditors												
Overdrawn account												
Caution Money												
Examination Money												
Other Creditors												
Total												
Long-term Liabilities												
PTA Developmen t fund												
Loans												
Bursary Fund												
Accumulate d fund												
Total												

Appendix III: List of National Public Schools

1	01100003	Kenyatta High Mwatate	Boys
2	01100004	Bura Girls	Girls
3	03100001	Mama Ngina Girls	Girls
4	04100002	Ribe Boys	Boys
5	07200009	Karima Girls	Girls
6	08200007	Kagumo High	Boys
7	10200008	Muranga High	Boys
8	12300001	Machakos Boys	Boys
9	13300005	Muthale Girls	Girls
10	14300006	Moi High Mbiruri	Boys
11	15300002	Meru School	Boys
12	18300003	Makueni Boys	Boys
13	19300004	Chogoria Girls	Girls
14	20400006	Pangani Girls	Girls
15	23500003	St Brigit's Kiminini	Girls
16	24500004	St.Theresa's Tartar Girls Secondary School	Girls
17	28500005	Kipsigis Girls' High School	Girls
18	29500006	Kapsabet Boys	Boys
19	31500011	Moi Girls Isinya	Girls
20	34500010	St Patrick Iten	Boys
21	36600002	Lugulu Girls	Girls
22	36600004	Friends Kamusinga	Boys
23	37600001	Kakamega School	Boys
24	38600003	Bunyore Girls	Girls
25	40700002	Kisii High	Boys
26	40700003	Nyabururu Girls	Girls
27	41700004	Asumbi Girls	Girls
28	42700005	Maranda High	Boys
29	44700006	Kanga High	Boys
31	04100008	Bahari Girls Secondary School	Girls
32	05100009	Hola Boys Secondary School	Boys
33	05100010	Ngao Girls Secondary School	Girls
34	06100011	Lamu Girls Secondary School	Girls
35	06100012	Mpeketoni Secondary School	Boys
36	07200014	Nyandarua High School	Mixed

37	12300013	Kathiani Girls School	Girls
38	16300014	Moyale Secondary School	Boys
39	17300015	Garbatula High School	Boys
40	18300016	Mbooni Girls	Girls
41	21500021	Turkana Girls' Secondary School	Girls
42	22500024	Kisima Girls High School	Girls
43	24500022	Chewoyet High School	Boys
44	25500023	Tenwek High School	Boys
45	28500006	Kabianga High School	Boys
46	29500025	St. Joseph's Girls-Chepterit	Girls
47	30500021	Nanyuki High School	Boys
48	31500026	Oloolaiser High School	Boys
49	35600008	S.A. Kolanya Girls Secondary School	Girls
50	43700012	Sironga Girls High School	Girls
51	44700011	Moi Nyabohanse Girls High School	Girls
52	46800003	Wajir High School	Boys
53	46800004	Wajir Girls Secondary School	Girls
54	47800005	Mandera Secondary School	Boys
55	47800006	Moi Girls Secondary School.	Girls
56	11200001	Alliance High School	Boys
57	11200002	Alliance Girls' High School	Girls
58	11200003	Mangu High School	Boys
59	11200004	Limuru Girls' School	Girls
60	11200005	Loreto High School Limuru	Girls
61	11200006	Mary hill Girls High School	Girls
62	20400001	Lenana School	Boys
63	20400002	Nairobi School	Boys
64	20400003	The Kenya High School	Girls
65	20400004	Starehe Boys' Centre & School	Boys
66	20400008	Moi Forces Academy – Nairobi	Boys
67	20400009	Starehe Girls' Centre	Girls
68	26500001	Moi Girls' High School- Eldoret	Girls
69	27500002	Nakuru High School	Boys
70	27500007	Moi Forces Academy Lanet	Girls
71	27500008	Utumishi Boys Academy	Boys
72	27500009	Nakuru Girls' High School	Girls
73	39700001	Maseno School	Boys

74	02100005	Kwale High School	Boys
75	02100006	Matuga Girls High School	Girls
76	03100007	Shimo-La-Tewa School	Boys
77	08200010	Bishop Gatimu Ngandu Girls High School	Girls
78	09200011	Kabare Girls' High School	Girls
79	09200012	Baricho High School	Boys
80	10200013	Mugoiri Girls High School	Girls
81	13300007	Kitui High	Boys
82	14300011	Siakago Girls High School	Girls
83	15300012	St. Mary's Girls High School Igoji	Girls
84	16300008	Moi Girls Secondary School-Marsabit	Girls
85	17300009	Isiolo Girls High School	Girls
86	19300010	Ikuu Boys High School	Boys
87	21500012	Lodwar Boys High School	Boys
88	22500013	Maralal High School	Boys
89	23500014	St. Joseph's Boys High School – Kitale	Boys
90	25500019	Kaplong Girls Secondary School	Girls
91	30500020	Njonjo Girls High School	Girls
92	32500015	Ole Tipis Girls Secondary School	Girls
93	32500016	Kilgoris Boys Secondary School	Boys
94	33500018	Baringo Boys High School	Boys
95	34500017	Moi Kapsowar Girls	Girls
96	35600007	Butula Boys High School	Boys
97	37600005	Butere Girls High School	Girls
98	38600006	Chavakali High School	Boys
99	39700009	Kisumu Girls High School	Girls
100	41700010	Mbita High School	Boys
101	42700007	Ngiya Girls High School	Girls
102	43700008	Nyambaria High School	Boys
103	45800002	Nep Girls High	Girls

Source: Ministry of education science and technology, 2018

Appendix IV: Rotated Factor Loadings Matrix Questionnaire

	Component					
	1	**2**	**3**	**4**	**5**	**6**
SB1	0.518	0.267	0.36	-0.233	0.211	0.188
SB2	0.446	0.358	0.082	0.183	-0.093	-0.279
SB3	0.559	0.438	0.104	0.288	0.36	0.055
SB4	-0.452	-0.382	-0.087	0.395	-0.222	0.042
SB5	-0.17	-0.305	0.175	0.212	0.075	-0.112
SB6	0.409	0.181	0.064	0.102	0.42	0.315
SB7	0.124	0.234	0.079	0.027	0.042	-0.018
SB8	0.231	0.032	0.155	0.126	0.004	-0.063
SB9	0.538	0.319	0.058	0.238	0.4	0.15
SB10	0.671	0.686	0.324	-0.13	-0.185	0.044
SB11	0.687	0.675	0.049	-0.031	0.206	-0.241
SC1	0.159	0.806	0.109	0.464	0.245	-0.048
SC2	0.095	-0.588	-0.121	-0.326	0.213	0.191
SC3	0.131	0.768	-0.152	0.59	0.026	-0.187
SC4	-0.383	-0.276	-0.069	-0.332	0.005	-0.155
SC5	0.443	0.638	0.269	0.297	-0.191	-0.03
SC6	-0.288	0.327	0.478	0.429	-0.095	-0.074
SC7	0.051	0.486	-0.087	0.264	-0.008	0.007
SC8	0.225	0.07	-0.097	-0.035	0.488	-0.093
SC9	-0.034	-0.431	0.038	0.474	0.18	-0.05
SC10	0.216	-0.024	0.079	-0.057	-0.562	0.317
SD1	0.091	0.088	-0.797	-0.027	-0.541	0.164
SD2	-0.053	-0.161	0.514	-0.069	0.05	-0.117
SD3	0.047	0.009	0.527	-0.095	0.261	0.402
SD4	-0.249	0.493	0.131	-0.062	-0.112	-0.329
SD5	-0.054	0.042	-0.214	0.333	-0.331	0.215
SD6	0.29	0.055	-0.45	-0.007	-0.571	0.188
SD7	-0.035	0.082	0.588	0.52	0.421	-0.131
SD8	-0.28	0.417	-0.121	0.001	0.083	0.312
SD9	-0.307	-0.335	-0.506	0.034	0.141	0.254
SD10	-0.431	0.264	0.076	0.151	0.155	0.163
SE1	0.027	0.049	0.056	0.744	-0.052	0.105
SE2	0.112	0.026	0.225	0.375	0.372	-0.172
SE3	0.044	0.12	-0.083	0.585	0.1	0.348
SE4	0.076	0.085	0.284	0.146	-0.02	0.171
SE5	0.045	0.098	-0.144	0.247	0.458	0.05
SE6	0.125	0.024	0.198	0.458	-0.049	0.105
SE7	0.154	0.099	-0.081	0.603	0.095	0.179
SE8	0.47	0.301	0.277	0.55	0.128	-0.258
SE9	-0.055	-0.116	0.51	0.473	-0.149	-0.532

SE10	0.24	0.005	0.18	0.586	-0.06	0.073
SF1	-0.057	0.273	0.23	-0.002	0.747	-0.305
SF2	-0.146	-0.212	0.336	0.101	0.533	-0.188
SF3	0.171	0.043	0.418	0.045	0.574	-0.115
SF4	-0.366	-0.042	0.17	-0.253	-0.18	-0.035
SF5	-0.328	0.041	-0.023	-0.109	0.554	0.214
SF6	0.145	-0.32	0.398	0.237	-0.045	0.195
SF7	-0.026	0.147	-0.009	-0.3	0.258	-0.281
SF8	-0.017	-0.155	-0.069	0.012	0.615	-0.383
SF9	-0.144	0.36	0.258	0.406	0.187	-0.031
SF10	0.241	0.565	-0.014	0.176	0.447	0.007
SG1	0.37	0.205	-0.09	0.117	0.198	0.507
SG2	0.154	-0.094	0.04	0.04	-0.019	0.463
SG3	0.353	-0.007	-0.037	-0.035	0.001	0.081
SG4	0.283	0.245	-0.129	0.165	0.203	0.515
SG5	0.224	0.44	0.056	0.205	-0.056	0.49
SG6	-0.445	-0.091	0.113	0.213	0.3	0.146
SG7	0.13	0.095	0.03	0.716	-0.044	0.62
SG8	-0.112	0.323	0.16	-0.003	0.247	0.281
SG9	0.062	0.209	-0.048	0.155	0.387	0.491
SG10	-0.207	0.089	0.36	0.023	0.062	-0.339
SG11	0.089	0.149	-0.023	0.192	0.286	0.509

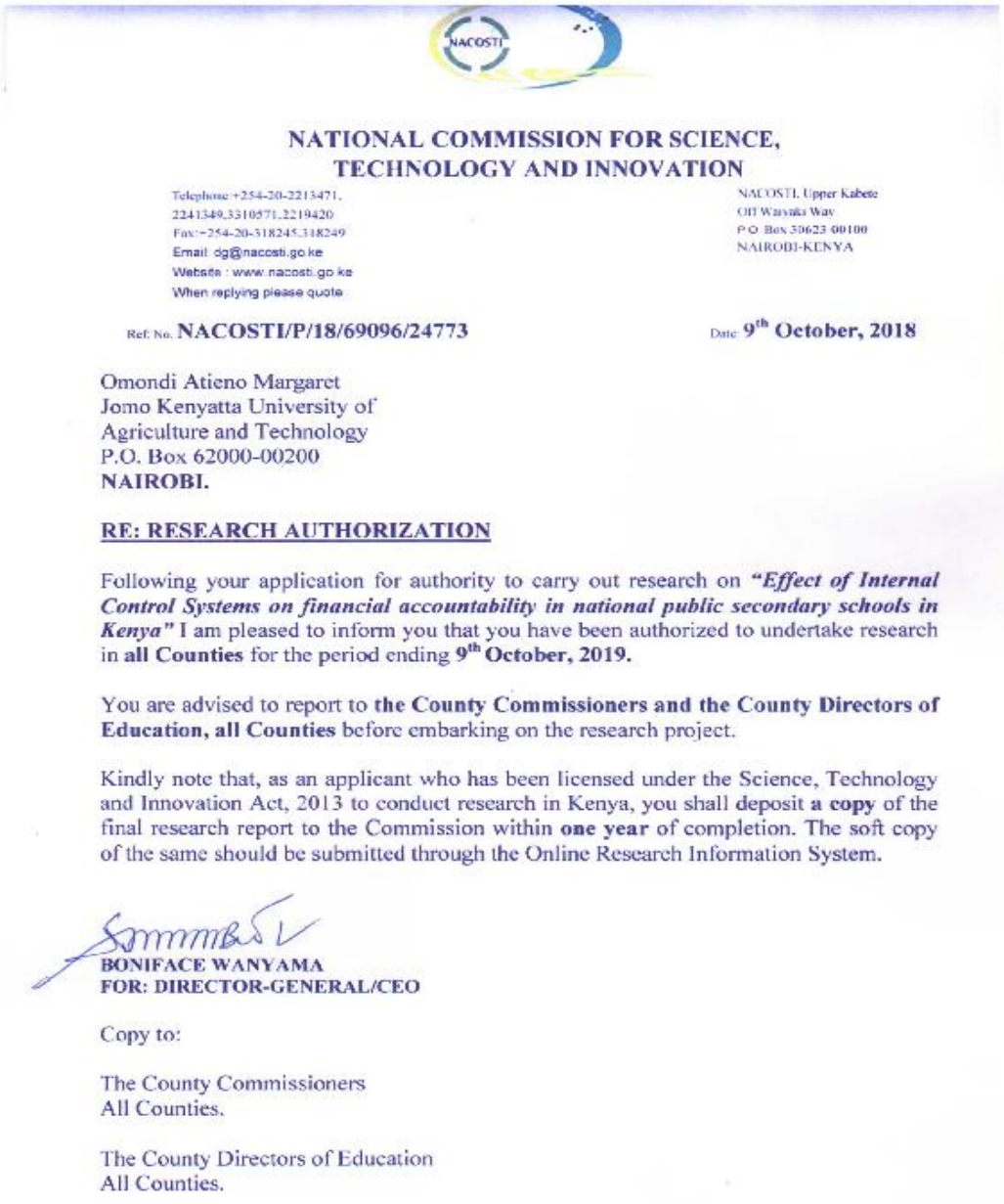
Appendix V: Durbin Watson Tables

Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU

	k'*=1		k'=2		k'=3		k'=4		k'=5		k'=6		k'=7		k'=8		k'=9		k'=10	
n	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU
6	0.610	1.400	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
7	0.700	1.356	0.467	1.896	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
8	0.763	1.332	0.559	1.777	0.367	2.287	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9	0.824	1.320	0.629	1.699	0.455	2.128	0.296	2.588	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
10	0.879	1.320	0.697	1.641	0.525	2.016	0.376	2.414	0.243	2.822	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
11	0.927	1.324	0.758	1.604	0.595	1.928	0.444	2.283	0.315	2.645	0.203	3.004	-----	-----	-----	-----	-----	-----	-----	-----
12	0.971	1.331	0.812	1.579	0.658	1.864	0.512	2.177	0.380	2.506	0.268	2.832	0.171	3.149	-----	-----	-----	-----	-----	-----
13	1.010	1.340	0.861	1.562	0.715	1.816	0.574	2.094	0.444	2.390	0.328	2.692	0.230	2.985	0.147	3.266	-----	-----	-----	-----
14	1.045	1.350	0.905	1.551	0.767	1.779	0.632	2.030	0.505	2.296	0.389	2.572	0.286	2.848	0.200	3.111	0.127	3.360	-----	-----
15	1.077	1.361	0.946	1.543	0.814	1.750	0.685	1.977	0.562	2.220	0.447	2.471	0.343	2.727	0.251	2.979	0.175	3.216	0.111	3.438
16	1.106	1.371	0.982	1.539	0.857	1.728	0.734	1.935	0.615	2.157	0.502	2.388	0.398	2.624	0.304	2.860	0.222	3.090	0.155	3.304
17	1.133	1.381	1.015	1.536	0.897	1.710	0.779	1.900	0.664	2.104	0.554	2.318	0.451	2.537	0.356	2.757	0.272	2.975	0.198	3.184
18	1.158	1.391	1.046	1.535	0.933	1.696	0.820	1.872	0.710	2.060	0.603	2.258	0.502	2.461	0.407	2.668	0.321	2.873	0.244	3.073
19	1.180	1.401	1.074	1.536	0.967	1.685	0.859	1.848	0.752	2.023	0.649	2.206	0.549	2.396	0.456	2.589	0.369	2.783	0.290	2.974
20	1.201	1.411	1.100	1.537	0.998	1.676	0.894	1.828	0.792	1.991	0.691	2.162	0.595	2.339	0.502	2.521	0.416	2.704	0.336	2.885
21	1.221	1.420	1.125	1.538	1.026	1.669	0.927	1.812	0.829	1.964	0.731	2.124	0.637	2.290	0.546	2.461	0.461	2.633	0.380	2.806
22	1.239	1.429	1.147	1.541	1.053	1.664	0.958	1.797	0.863	1.940	0.769	2.090	0.677	2.246	0.588	2.407	0.504	2.571	0.424	2.735
23	1.257	1.437	1.168	1.543	1.078	1.660	0.986	1.785	0.895	1.920	0.804	2.061	0.715	2.208	0.628	2.360	0.545	2.514	0.465	2.670
24	1.273	1.446	1.188	1.546	1.101	1.656	1.013	1.775	0.925	1.902	0.837	2.035	0.750	2.174	0.666	2.318	0.584	2.464	0.506	2.613
25	1.288	1.454	1.206	1.550	1.123	1.654	1.038	1.767	0.953	1.886	0.868	2.013	0.784	2.144	0.702	2.280	0.621	2.419	0.544	2.560
26	1.302	1.461	1.224	1.553	1.143	1.652	1.062	1.759	0.979	1.873	0.897	1.992	0.816	2.117	0.735	2.246	0.657	2.379	0.581	2.513
27	1.316	1.469	1.240	1.556	1.162	1.651	1.084	1.753	1.004	1.861	0.925	1.974	0.845	2.093	0.767	2.216	0.691	2.342	0.616	2.470
28	1.328	1.476	1.255	1.560	1.181	1.650	1.104	1.747	1.028	1.850	0.951	1.959	0.874	2.071	0.798	2.188	0.723	2.309	0.649	2.431
29	1.341	1.483	1.270	1.563	1.198	1.650	1.124	1.743	1.050	1.841	0.975	1.944	0.900	2.052	0.826	2.164	0.753	2.278	0.681	2.396
30	1.352	1.489	1.284	1.567	1.214	1.650	1.143	1.739	1.071	1.833	0.998	1.931	0.926	2.034	0.854	2.141	0.782	2.251	0.712	2.363
31	1.363	1.496	1.297	1.570	1.229	1.650	1.160	1.735	1.090	1.825	1.020	1.920	0.950	2.018	0.879	2.120	0.810	2.226	0.741	2.333
32	1.373	1.502	1.309	1.574	1.244	1.650	1.177	1.732	1.109	1.819	1.041	1.909	0.972	2.004	0.904	2.102	0.836	2.203	0.769	2.306
33	1.383	1.508	1.321	1.577	1.258	1.651	1.193	1.730	1.127	1.813	1.061	1.900	0.994	1.991	0.927	2.085	0.861	2.181	0.796	2.281
34	1.393	1.514	1.333	1.580	1.271	1.652	1.208	1.728	1.144	1.808	1.079	1.891	1.015	1.978	0.950	2.069	0.885	2.162	0.821	2.257
35	1.402	1.519	1.343	1.584	1.283	1.653	1.222	1.726	1.160	1.803	1.097	1.884	1.034	1.967	0.971	2.054	0.908	2.144	0.845	2.236
36	1.411	1.525	1.354	1.587	1.295	1.654	1.236	1.724	1.175	1.799	1.114	1.876	1.053	1.957	0.991	2.041	0.930	2.127	0.868	2.216
37	1.419	1.530	1.364	1.590	1.307	1.655	1.249	1.723	1.190	1.795	1.131	1.870	1.071	1.948	1.011	2.029	0.951	2.112	0.891	2.197
38	1.427	1.535	1.373	1.594	1.318	1.656	1.261	1.722	1.204	1.792	1.146	1.864	1.088	1.939	1.029	2.017	0.970	2.098	0.912	2.180
39	1.435	1.540	1.382	1.597	1.328	1.658	1.273	1.722	1.218	1.789	1.161	1.859	1.104	1.932	1.047	2.007	0.990	2.085	0.932	2.164
40	1.442	1.544	1.391	1.600	1.338	1.659	1.285	1.721	1.230	1.786	1.175	1.854	1.120	1.924	1.064	1.997	1.008	2.072	0.952	2.149
45	1.475	1.566	1.430	1.615	1.383	1.666	1.336	1.720	1.287	1.776	1.238	1.835	1.189	1.895	1.139	1.958	1.089	2.022	1.038	2.088
50	1.503	1.585	1.462	1.628	1.421	1.674	1.378	1.721	1.335	1.771	1.291	1.822	1.246	1.875	1.201	1.930	1.156	1.986	1.110	2.044
55	1.528	1.601	1.490	1.641	1.452	1.681	1.414	1.724	1.374	1.768	1.334	1.814	1.294	1.861	1.253	1.909	1.212	1.959	1.170	2.010
60	1.549	1.616	1.514	1.652	1.480	1.689	1.444	1.727	1.408	1.767	1.372	1.808	1.335	1.850	1.298	1.894	1.260	1.939	1.222	1.984
65	1.567	1.629	1.536	1.662	1.503	1.696	1.471	1.731	1.438	1.767	1.404	1.805	1.370	1.843	1.336	1.882	1.301	1.923	1.266	1.964
70	1.583	1.641	1.554	1.672	1.525	1.703	1.494	1.735	1.464	1.768	1.433	1.802	1.401	1.838	1.369	1.874	1.337	1.910	1.305	1.948
75	1.598	1.652	1.571	1.680	1.543	1.709	1.515	1.739	1.487	1.770	1.458	1.801	1.428	1.834	1.399	1.867	1.369	1.901	1.339	1.935
80	1.611	1.662	1.586	1.688	1.560	1.715	1.534	1.743	1.507	1.772	1.480	1.801	1.453	1.831	1.425	1.861	1.397	1.893	1.369	1.925
85	1.624	1.671	1.600	1.696	1.575	1.721	1.550	1.747	1.525	1.774	1.500	1.801	1.474	1.829	1.448	1.857	1.422	1.886	1.396	1.916
90	1.635	1.679	1.612	1.703	1.589	1.726	1.566	1.751	1.542	1.776	1.518	1.801	1.494	1.827	1.469	1.854	1.445	1.881	1.420	1.909
95	1.645	1.687	1.623	1.709	1.602	1.732	1.579	1.755	1.557	1.778	1.535	1.802	1.512	1.827	1.489	1.852	1.465	1.877	1.442	1.903
100	1.654	1.694	1.634	1.715	1.613	1.736	1.592	1.758	1.571	1.780	1.550	1.803	1.528	1.826	1.506	1.850	1.484	1.874	1.462	1.898
150	1.720	1.747	1.706	1.760	1.693	1.774	1.679	1.788	1.665	1.802	1.651	1.817	1.637	1.832	1.622	1.846	1.608	1.862	1.593	1.877
200	1.758	1.779	1.748	1.789	1.738	1.799	1.728	1.809	1.718	1.820	1.707	1.831	1.697	1.841	1.686	1.852	1.675	1.863	1.665	1.874

*k' is the number of regressors excluding the intercept

Appendix VI: NACOSTI Research Permit



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

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

Ref. No. **NACOSTI/P/18/69096/24773** Date **9th October, 2018**

Omondi Atieno Margaret
Jomo Kenyatta University of
Agriculture and Technology
P.O. Box 62000-00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Effect of Internal Control Systems on financial accountability in national public secondary schools in Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **all Counties** for the period ending **9th October, 2019.**

You are advised to report to **the County Commissioners and the County Directors of Education, all Counties** before embarking on the research project.

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

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioners
All Counties.

The County Directors of Education
All Counties.