

**EFFECT OF PROCUREMENT REFORMS ON EXPENDITURE
MANAGEMENT IN PUBLIC SECONDARY SCHOOLS OF
NAIROBI CITY COUNTY, KENYA**

ERIC KIBINU KINUTHIA

**A Thesis Submitted in Fulfilment of the Requirements for the Award of the
Degree of Doctor of Philosophy in Educational Administration of the
University of Nairobi**

2018

DECLARATION

This Thesis is my original work and has not been presented to any other university.

Kinuthia, Eric Kibinu
E80/80279/2010

This Thesis has been submitted for examination with our approval as University Supervisors

Prof. Grace Nyagah

Associate Professor
Department of Educational Administration and Planning
University of Nairobi

Prof. Paul A. Odundo

Associate Professor and Chairman
Department of Communication and Technology
University of Nairobi

DEDICATION

This Thesis is dedicated to my wife, Lucy Kibinu, and children John and Daisy Kibinu for moral and material support during doctorate studies at the University of Nairobi.

ACKNOWLEDGEMENTS

I wish to acknowledge with appreciation the help of those without whom the completion of this work would not have been possible. It may be practically impossible to mention all of them individually.

I wish to thank my supervisors: Prof. Grace Nyagah and Prof. Paul A. Odundo for their guidance through the conceptualisation, proposition, and implementation of this study. I am particularly grateful for support provided in the formulation and refinement of the research topic, background of the study, statement of the problem, objectives, as well as research methodology. Both have been a constant source of inspiration and information, which propelled me through the process of compiling this Thesis. Special thanks to the Dean, Faculty of Education University of Nairobi for ensuring that this work is completed.

The Principals, Deputy Principals, school bursars, PAs, BOMs deserve a special mention for their invaluable role as respondents. I appreciate the work of Tom who provided valuable research assistance throughout the study and Marvin Mugo for the support in typing the thesis.

Last but not least I wish to thank my wife Lucy Njoki who provided an enabling environment during my study. I am equally grateful to our children John Kinuthia and Daisy Gaciku for their patience and sacrifice exhibited during this study and to my mother Loise Gaciku for unwavering moral support through fervent prayers for successful completion of the study. Above all I thank the Almighty God for making all this possible.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS AND ACRONYMS	x
ABSTRACT	xii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background to the Study	1
1.2 Statement of the Problem.....	10
1.3 Purpose of the Study	15
1.4 Objectives of the Study.....	15
1.5 Research Hypotheses.....	16
1.6 Significance of the Study.....	16
1.7 Limitations of the Study	17
1.8 Delimitations of the Study.....	18
1.9 Definition of Terms Used in the Thesis	19
1.10 Assumptions of the Study	22
1.11 Organisation of the Thesis.....	22
CHAPTER TWO	23
LITERATURE REVIEW.....	23
2.1 Introduction	23
2.2 Effect of Procurement Reforms on Expenditure Management: Experiences from Various Countries	26
<i>2.2.1 Effect of tender committee meetings on expenditure management</i>	<i>27</i>
<i>2.2.2 Number of members trained and expenditure management</i>	<i>32</i>
<i>2.2.3 Effect tender advertising on expenditure management</i>	<i>37</i>
<i>2.2.4 Emergency procurement and expenditure management</i>	<i>45</i>
<i>2.2.5 Effect of open tendering on expenditure management</i>	<i>54</i>
<i>2.2.6 Effect of tender splitting on expenditure management</i>	<i>60</i>
2.3 Theoretical Framework.....	67
2.4 Conceptual Framework.....	69
CHAPTER THREE	71
RESEARCH METHODOLOGY	71
3.1 Introduction	71
3.2 Research Design	71
3.3 Target Population.....	73
3.4 Sampling Design and Procedures	74
3.5 Data Sources	76
3.6 Data Collection Instruments.....	76

3.6.1	<i>Self-reporting questionnaire</i>	77
3.6.2	<i>Key informant interview guide</i>	78
3.7	Pre-testing of Data Collection Instruments	79
3.7.1	<i>Validity of the data collection instruments</i>	79
3.7.2	<i>Reliability of the data collection instruments</i>	80
3.8	Data Collection Procedures	81
3.9	Data Processing and Analysis Techniques	83
3.10	Ethical Considerations and Research Authorisation	88
CHAPTER FOUR		90
DATA ANALYSIS, PRESENTATION AND INTERPRETATION		90
4.1	Introduction	90
4.2	Analysis of Questionnaire Return Rate	90
4.3	Expenditure Management	91
4.4	Background Profile and Expenditure Management: Bivariate Analysis	95
4.4.1	<i>Attributes of schools</i>	95
4.4.2	<i>Attributes of school tender committees</i>	98
4.5	Procurement Reforms and Expenditure Management: Bivariate Analysis	104
4.5.1	<i>Tender committee meetings and expenditure management</i>	105
4.5.2	<i>Capacity of committee members and expenditure management</i>	108
4.5.3	<i>Tender advertising and expenditure management</i>	116
4.5.4	<i>Frequency of emergency procurement and expenditure management</i>	138
4.5.5	<i>Tendering Methods and Expenditure Management</i>	143
4.5.6	<i>Relationship between Tender Splitting & Expenditure Management</i>	148
4.6	Procurement Reforms & Expenditure Management: Multivariate Analysis	153
4.6.1	<i>Standardised regression coefficients (beta weights)</i>	154
4.6.2	<i>Relative importance of procurement reform aspects</i>	162
4.6.3	<i>Models' goodness-of-fit</i>	163
4.6.4	<i>Challenges to procurement reforms & suggestions for improvement</i>	164
CHAPTER FIVE		170
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS		170
5.1	Introduction	170
5.2	Summary of the Findings	170
5.2.1	<i>Tender committee meetings and expenditure management</i>	171
5.2.2	<i>No. of trained committee members & expenditure management</i>	172
5.2.3	<i>Tender advertising and expenditure management</i>	173
5.2.4	<i>Emergency procurement and expenditure management</i>	175
5.2.5	<i>Effect of open tendering method on expenditure management</i>	176
5.2.6	<i>Effect of tender splitting on expenditure management</i>	177
5.2.7	<i>Relative importance of reform aspects & models' goodness-of-fit</i>	179
5.3	Conclusions	180
5.3.1	<i>Tender committee meetings and expenditure management</i>	180
5.3.2	<i>No. of trained committee members & expenditure management</i>	181
5.3.3	<i>Tender advertising and expenditure management</i>	182
5.3.4	<i>Emergency procurement and expenditure management</i>	183
5.3.5	<i>Effect of open tendering method on expenditure management</i>	184
5.3.6	<i>Effect of tender splitting on expenditure management</i>	185

5.4 Recommendations	186
5.4.1 <i>Tender committee meetings and expenditure management</i>	186
5.4.2 <i>No. of trained committee members & expenditure management</i>	186
5.4.3 <i>Tender advertising and expenditure management</i>	187
5.4.4 <i>Emergency procurement and expenditure management</i>	188
5.4.5 <i>Effect of open tendering method on expenditure management</i>	188
5.4.6 <i>Effect of tender splitting on expenditure management</i>	188
5.5 Contributions of the Study to Knowledge	189
5.6 Recommendations for Further Research	191
REFERENCES	193
APPENDICES	203
Appendix I: Transmittal Letter	203
Appendix II: Authorisation Letter from NACOSTI	204
Appendix III: Research Permit	205
Appendix IV: Questionnaire for Deputy Principals	206
Appendix V: Interview Guide for BoM and PA Members	213
Appendix VI: Multiple Linear Regression Output	214

LIST OF TABLES

3.1: Distribution of public secondary schools in Nairobi City County	73
3.2: Distribution of the sample size, based on school category and gender	75
4.1: Mean annual per capita expenditure on procurement for each school	93
4.2: Variation in the annual procurement expenditure - before, during and after reforms	94
4.3: Background attributes of the schools.....	96
4.4: Membership of school tender committees	99
4.5: Source departments and institutions	101
4.6: Factors guiding the appointment of tender committee members	102
4.7: Correlation between tenure of office and variation in procurement expenditure	104
4.8: Variation in procurement expenditure & number of tender committee meetings	106
4.9: Number of trained committee members and variation in procurement expenditure	110
4.10: Additional necessary skills for members of school tender committees.....	114
4.11: Types of advertising media commonly used by school tender committees	120
4.12: Average period given to bidders to submit their applications (in days)	122
4.13: Documents commonly used by school tender committees	123
4.14: Reasons for non-use of standard guidelines to prepare tender documents	127
4.15: Measures considered to enhance transparency	129
4.16: Tender evaluation factors and confidentiality of outcomes	131
4.17: Duration of tender evaluation process	134
4.18: Reasons for notifying unsuccessful bidders.....	137
4.19: Types of goods, services and works procured over the preceding one year period.....	145
4.20: Tender methods commonly applied by schools & procurement-related expenditure .	146
4.21: Measures to curb inflation and ensure quality standards	152
4.22: Effect of procurement reforms on expenditure management	155
4.23: Strength and significance of the model	163
4.24: Challenges and suggestions for improvement	166

LIST OF FIGURES

2.1: Conceptual framework showing hypothesised relationship between procurement reforms and procurement expenditure.....	70
4.1: Quorum consistency.....	108
4.2: Perceived adequacy of skills among tender committee members.....	112
4.3: Communication from the Directorate of Public Procurement.	115
4.4: Frequency of tender advertising by school tender committees.	117
4.6: Methods used to notify bidders about outcome of tender evaluation process.	136
4.8: Frequency of emergency procurement against expenditure variance.	142

LIST OF ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
ANOVA	Analysis of Variance
APS	Accounts Payable Section
BoM	Boards of Management
BPP	Bureau of Public Procurement
CDF	Constituency Development Funds
CI	Confidence Interval
COMPRASNET	Purchase Net (Spanish-English)
CPAR	Country Procurement Assessment Report
CTB	Central Tender Board
DEC	Department of Education and Communities
DPP	Directorate of Public Procurement
DSM	Devolved School Management
DTF	Department of Treasury and Finance
EU	European Union
FDI	Foreign Direct Investment
FDSE	Free Day Secondary Education
FReBS	Fingerprint Recognition e-Bidding System
GDPs	Gross Domestic Products
GEPS	Government e-Procurement System
GNPA	Ghana National Procurement Agency
GPU	Government Procurement Unit
GSCL	Ghana Supply Company Limited
HM	Her Majesty
ICT	Information and Communication Technology
IMF	International Monetary Fund
IPAR	Institute of Policy Analysis and Research
ITC	International Trade Centre
KES	Kenya Shillings
KESSHA	Kenya Secondary School Heads Association
KIPPRA	Kenya Institute of Public Policy and Research
MoE	Ministry of Education
MTEF	Medium Term Expenditure Framework
NACOSTI	National Commission for Science, Technology, and Innovation
NPC	National Procurement Council
NPPO	National Public Procurement Office
NSW	New South Wales
OECD	Organisation for Economic Cooperation and Development
PFM	Public Finance Management
PPDA	Public Procurement and Disposal of Assets Act
PPDPA	Public Procurement and Disposal of Public Assets Authority
PPDR	Public Procurement and Disposal Regulations
PPOA	Public Procurement Oversight Authority

PPP	Public-Private Partnership
PPRA	Public Procurement Regulatory Authority
PPS	Public Procurement Service
PA	Parents' Association
SD	Standard Deviation
SE	Standard Error
SECO	Schools Electronic Catalogue Ordering
SPSS	Statistical Package for Social Sciences
TI	Transparency International
UK	United Kingdom
UNCITRAL	United Nations Commission for International Trade Law
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
USD	United States Dollar
UTIC	Communications and Information Technology Unit

ABSTRACT

Public procurement is central to expenditure management and good governance. Prior to the formulation of necessary laws and policies, public procurement was conducted under unclear legal frameworks, which failed to control irregularities and regulate expenditure. The aim of procurement reforms was to enhance operational efficiency and financial discipline; thereby, curb wastage of public resources. The purpose of this study was to establish the extent to which procurement reforms had been implemented in public secondary schools of Nairobi City County and its effect on expenditure management. The evaluation research model three, with both quantitative and qualitative approaches, was applied to guide the research process. Primary data were sourced in May 2015 from deputy principals, as well as members of Parents' Association (PA) and Boards of Management (BoM). Data analysis techniques included one-way analysis of variance, Chi-square statistic, Pearson's correlation coefficient, and multiple regression analysis. The study found that the frequency of meetings, the number of trained members of tender committees, and the frequency of tender advertising caused a significant reduction of procurement-related expenditure, which signified improvement (positive effect) in expenditure management. Contrastingly, the frequency of emergency procurement and that of tender splitting caused a significant increment of procurement-related expenditure, which signifies weakness (negative effect) in expenditure management. The study concluded that improving the quality of meetings held by school tender committees should be prioritised to make them more productive; building the capacity of school tender committees is a crucial pillar for the implementation of procurement reforms and management of expenditure. Developing and disseminating tender design guidelines is likely to make advertisements more attractive to bidders and thus, self-financing. Limiting the frequency of emergency procurement is important for effective management of procurement-related expenditure in public secondary schools. Lastly, tender splitting remains both a strategic measure against risks of supplier default, as well as a critical aspect that will negatively affect the management of procurement-related expenditure in public secondary schools, if wrongly applied. The study recommends the need for stakeholders to: train school tender committees on how to plan, organise, and execute productive meetings; develop guidelines for designing tender advertising, thereby, make them self-financing; train school tender committees on procurement planning to enable members develop, execute, and manage procurement plans. Lastly, stakeholders should develop and disseminate appropriate policies to guide the application of tender splitting; thereby, make it a strategy for boosting, rather than stifling procurement reforms in public secondary schools.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Public procurement is the process of acquiring goods, services, and works by public sector institutions using resources from national and county government budgets. It also entails the disposal of public assets. Procurement is central to expenditure management and is an essential element of good governance. Through public procurement, up to 60% of government revenue is injected into the economy, which in turn, creates employment and improves per capita income (Organisation for Economic Cooperation and Development [OECD], 2001).

Public procurement plays a greater role in developing countries than it does in developed nations. This is because in developing countries, governments are the main buyers of goods, services and works (Kenya Institute of Public Policy and Research [KIPPRA], 2006). Trionfetti (2000) shows that the volume of public procurement varies between 5% and 8% of the national Gross Domestic Products (GDPs) in developed and newly industrialised countries, while in parts of the Middle East, Western Asia, Southern Asia and the whole of Africa, the volume of public procurement ranges between 9% and 13% of national GDPs.

Public procurement falls into two distinct categories of contestable and non-contestable. A procurement process is contestable if contractors or suppliers are selected through a competitive and transparent process, but non-contestable where

the selection process is devoid of competition. In Kenya, about 35% of the public expenditure consists of contestable government procurement, which makes it the primary item of public expenditure, followed by salaries and wages (KIPPRA, 2006).

Prior to the 1970s, public procurement in Kenya was undertaken by external agencies based in Britain, primarily because most needs of the then colonial government and the incoming new government could only be met from external sources, as local supplies were still inadequate (Odhiambo & Kamau, 2003). With increasing procurement needs due to the expanding economy, the government found it necessary to pass over the responsibilities of procurement to ministries.

This move prompted the institutionalisation of supplies offices within ministries and recruitment of procurement officers in 1974. The Ministry of Finance (MoF) was then mandated to oversee public procurement activities. In 1978, a manual on supplies and guidelines were developed to manage the procurement process (Aketch, 2005). Although an elaborate procurement system was established, one of the inherent weaknesses was that it was highly centralised and was not guided by any particular legislation. Instead, the process was managed based on various pieces of law containing aspects of procurement. Some of the piecemeal statutes to this effect included the Sale of Goods Act – Cap 31, Law of Contracts – Cap 23, Government Contracts Act - Cap 25, and laws governing state corporations, labour, tax, customs, as well as banking, among others (KIPPRA, 2006).

The procurement system was managed through the Central Tender Board (CTB), before being decentralised to various departments and public institutions in the succeeding years. This saw the CTB retain the authority to manage procurement of goods and services valued at KES 2 million and above; while Ministerial Tender Boards (MTBs) handled procurements valued below KES 2 million. Furthermore, the Department of Defence (DoD) was allowed to have its own tender board, which operated on ceilings and powers of the MTBs. At the district level, the then District Tender Boards (DTBs) were established to manage the procurement process for all government ministries (Aketch, 2005). In addition, tender boards were established within local authorities, public enterprises, educational institutions, and cooperative societies. Also created were channels for appeal against unsatisfactory decisions. In this regard, appeals against the decisions of DTBs were lodged with the CTB for redress; those against decisions of MTBs were forwarded to the relevant permanent secretaries; while appeals against decisions of the CTB and the DoD tender board were addressed by the treasury's permanent secretary (Aketch, 2005).

In spite of the measures to improve the efficiency and effectiveness of public procurement, the system was diagnosed with several deficiencies including selective invitation of preferred firms to bid, delayed tender advertising, designing tender documents to favour particular entities and releasing confidential information to particular interested parties; as well as collusion to fix prices, increase value of contracts and access confidential information. The system was shrouded in secrecy, inefficiency, malpractices and undercutting, which led to loss

of public funds (Basheka, 2006; Aketch, 2005; Odhiambo & Kamau, 2003). In 2005, a report by Transparency International (TI) estimated that Kenya lost about KES 475 billion to shoddy procurement deals within a period of seven years (TI, 2005).

Worse still, the procurement system was not equipped with measures that would bar public officials from participating in private enterprise, while still holding office. As a result, senior public officials and politicians had unrestricted access to lucrative public procurement contracts. In most cases they used their positions to influence tender awards in favour of firms with which they were associated (Basheka, 2006; Aketch, 2005). The procurement system was also characterised by limited participation of Small and Medium Enterprises (SMEs) due to lack of a coherent, transparent, and accountable procurement policy (Aketch, 2005; Odhiambo & Kamau, 2003).

The introduction of procurement reforms in Kenya's public sector was motivated by the need to address issues raised by stakeholders, including international development partners such as the International Monetary Fund (IMF) and the World Bank. In 1986, the government in collaboration with the World Bank initiated a study to evaluate the national procurement system. The exercise brought to the fore various issues pertaining to inefficiency of the system, which facilitated loss of public funds in the range of KES 30 billion annually through shoddy procurement deals. One of the recommendations emphasised the need to overhaul the procurement system (Aketch, 2005; Odhiambo & Kamau, 2003).

In 1997, the Government and World Bank commissioned another study, which revealed that the system continued to lack transparency and accountability. Further, most procurement staff were inadequately trained, while the country lacked a professional body to regulate activities of procurement officers, suppliers and service providers. The study emphasised the need for a comprehensive review and implementation of a reform process to minimise loss of public resources (Aketch, 2005; Odhiambo & Kamau, 2003).

Following recommendations of the two studies, the reform process was initiated in 1999 with support from the World Bank, African Development Bank (ADB) and the International Trade Centre (ITC). The reforms focused on delegation of authority, procurement thresholds, planning, and development of procurement manuals. Also targeted were procurement legal and institutional frameworks (Aketch, 2005; Odhiambo & Kamau, 2003).

As a first step, the Exchequer and Audit Regulations, also known as the Procurement Regulations, was formulated to provide a legal basis for the reforms. The Procurement Regulations, which was communicated through the Legal Notice No. 51 of 2001, outline a number of reforms, including collective decision-making in public institutions, encouraging open tendering method, planning procurement activities and specifying timelines for national and international tendering processes. In addition, the Procurement Regulations promote the application of standard tender documents, adherence to procurement thresholds, as well as

alignment of technical specifications with international standards. The Regulations further demand that all bidders be treated equally regardless of their racial, religious or national affiliation (Ondore, Odoyo, Obura, Kobiero, Odondo & Okello, 2015; Embeli, Iravo, Biraori & Wamalwa, 2014; Kavula, Kalai & Migosi, 2014; KIPPRA, 2006; Aketch, 2005).

The reforms also required public institutions to advertise tenders widely in the print media of national circulation, evaluate bidders based on their technical capacity, Procurement Regulations, 2006, as well as maintain proper records of procurement processes. Public institutions are also required to uphold transparency during tender opening, and observe confidentiality during tender evaluation. As a result, the Directorate of Public Procurement (DPP) was established at the National Treasury to coordinate and support the development of public procurement in Kenya by formulating appropriate policies, developing human resource capacity, enforcing compliance, and overseeing procurement activities. The Regulations also created the Public Procurement Complaints Review and Appeals Board (PPCRAB) to address complaints arising from procurement processes. In addition, tender committees were established in public institutions to manage procurement activities (KIPPRA, 2006; Aketch, 2005).

Furthermore, the Public Procurement and Disposal of Assets Act (PPDA) became law in 2005 and its purpose was to provide the legal backing to procurement reforms aimed at making procurement processes more efficient, competitive, and transparent. The Procurement Act, 2005 also focused on

strengthening the organisational framework with an effective oversight mechanism. Nevertheless, there are indications that the reforms have not been fully adopted in all public institutions, including public secondary schools. Hence, issues such as lack of capacity, non-advertisement of tenders, lack of procurement planning, non-adherence to procurement plans, tender splitting, inadequate monitoring and delayed sanctions remain signs of weaknesses in the procurement system (Ondore et al., 2015; Embeli et al., 2014; Basheka, 2006; KIPPRA, 2005).

In 2005, a report by compiled by Transparency International (TI) estimated that about KES 475 billion was lost by the Kenyan Government within a period of seven years due to procurement malpractices. Worse still, the procurement system was not equipped with measures that would bar public officials from participating in private enterprise, while still holding office. As a result, senior public officials and politicians had unrestricted access to lucrative public procurement contracts, which they influenced to favour firms with which they were associated (TI, 2005).

Implementation of the Procurement Regulations began in 2002. In the education sector, circulars stipulating measures to be taken by public schools to enhance accountability and transparency in procurement processes were issued out. The circulars further provided guidance on the formation of tender committees and the training of selected members on procurement management within public schools. Such training activities were initiated and facilitated by the National Treasury through the DPP (Kavula et al., 2014). Besides, selected teachers were

mandated to steer procurement activities at the school level. These measures were implemented in all public schools (Embeli et al., 2014; Mutahi, 2003).

Nevertheless, as highlighted during the 2003 annual conference organised by the Kenya Secondary School Heads Association (KESSHA), the implementation of new measures was slow in transforming procurement practice in secondary schools. Transparency and accountability remained elusive because of inadequate enforcement (Mutahi, 2003). Inadequate adherence to the procurement Regulations was also earmarked by a-2006-study conducted by the Institute of Policy Analysis and Research (IPAR), which indicated that more than half of public secondary schools were not complying with provisions of the Procurement Act and Regulations. As a result, the procurement of school equipment, consumables, learning materials and hiring of both teaching and non-teaching staff was marred with malpractices (IPAR, 2007). In view of the cited issues, this study sought to establish the extent to which the new Procurement Regulations had been implemented in public secondary schools of Nairobi City County, and how such action affected the level of procurement-related expenditure.

Nairobi City County is the most cosmopolitan administrative unit that hosts the capital city of the Republic of Kenya. The County is surrounded by three other counties, including Kiambu County along the northern and western borders, Kajiado County covers the Southern border, while Machakos County is found along the Eastern border. The County consists of 17 administrative sub-counties and 85 wards (County Government of Nairobi City, 2017). The County has a population

of about 4.9 million people, which is projected to reach 6 million by the year 2022 (County Government of Nairobi City, 2017). The population growth is primarily linked to rural-urban migration with the prospect of accessing better economic opportunities. However, unplanned rural-urban migration without a proportionate expansion of the industrial sector has contributed to multiple and complex socio-economic challenges, whose effects transcend to all sectors in the County.

In the secondary education subsector, the County has a population of 283,805 youths of secondary school age bracket (14-17 years), which is projected to increase to 361,044 persons by the year 2022. Notably though, the County has 95 public secondary schools only, 57 private secondary schools and 2,028 teachers (County Government of Nairobi City, 2014). The unprecedented increase in the population of secondary school age youths brings to the fore the need for more educational resources, including schools, learning materials, and human resource. Nonetheless, extant statistical literature suggest that of the 283,805 youths of secondary school age, only 48,669 (17.1%) are enrolled for secondary education, which implies that more than 80% of youths aged 14 to 17 years are not in school. On the same note, statistical literature shows that the County has a gross enrolment rate of 28.6 percent while the net enrolment stands at 25.3 percent.

Notably, the County has registered one of the lowest school participation rates, which is lower than that recorded by the North Eastern region (Muchiri, 2017; Government of Kenya, 2013). Low participation rates in secondary schools signify high levels of education wastage and many inefficiencies in the education system,

which according to UNESCO (2014), has a regressive effect on equality in education and the future distribution of wealth in the society. Additional statistical information show that Nairobi City County reports a dropout rate of 5.5 percent, a completion rate is 91.8 percent, while the retention rate is 94.6 percent (County Government of Nairobi City, 2017).

In relation to expenditure management, extant literature suggests that public secondary schools in Nairobi City County encounter numerous challenges, including inadequate training of principals; as well as lack of clear policies on the identification, selection, appointment and training of principals and their deputies. The management of secondary schools in the County is also influenced by weak internal audit systems within schools and inconsistency of external auditing services, which create room for misappropriation of financial resources. Effective management of public secondary schools in Nairobi City County is also undermined by poor budgeting, as well as lack of skills in financial management and accounting, which occasionally lead to budget overruns on certain expenditure items and under-expenditure on other items. Notably, misappropriation of school financial resources is an offence, which is punishable by interdiction, in accordance with Teachers Service Commission's (TSC) Code of Regulations (Muchiri, 2017; County Government of Nairobi City, 2017; Government of Kenya, 2013).

1.2 Statement of the Problem

Prior to 2001 when the Procurement Regulations were formulated in Kenya, public procurement activities were not guided by any clear law or regulation. The

legal void aided the proliferation of multiple and complicated irregularities, which in turn, led to massive loss of public financial resources. In a span of ten years, two successive studies were commissioned in 1986 and 1997 by the Government of Kenya in collaboration with the World Bank to assess efficiency of the public procurement system. Among other findings, the studies revealed various malpractices that constrained the procurement system, leading to loss of public funds. This included issues such as partisan invitation of bidders, delayed advertising or non-advertising of tenders, tailoring tender documents to favour particular bidders; as well as inflation of prices, among others. In view of this, public procurement reforms was intended to boost operational efficiency, improve financial discipline, as well as enhance transparency, and accountability; thereby, curb wastage and loss of public resources (Ondore et al., 2015; Embeli et al., 2014; Kavula et al., 2014; KIPPRA, 2006; Aketch, 2005).

Even though the Procurement Regulations were formulated to improve efficiency of public procurement, compliance by public secondary schools was slow. This was first hinted by the then Permanent Secretary of Education, while addressing the annual secondary school heads conference in 2003 (Mutahi, 2003). Four years later, the study conducted by IPAR in 2006 indicated that more than half of secondary schools were not adhering to provisions of the procurement law, leading to proliferation of various malpractices in the procurement of teaching and learning materials, as well as services and works (IPAR, 2007).

Whereas, Mutahi (2003) acknowledged the inadequacy of information regarding the extent to procurement reforms had taken root in public secondary schools, IPAR (2007) highlighted the dearth of academic literature regarding governance and management of expenditure in public secondary schools. The latter also singles out the shortage of information on successes and challenges inherent in the implementation of procurement reforms in public secondary schools. The information gaps identified by Mutahi (2003) and IPAR (2007) have motivated further research focusing on the implementation of procurement reforms and the management of procurement-related expenditure in public secondary schools in various parts of Kenya.

Studies that responded to the information gap cited by IPAR (2007) and Mutahi (2003) reveal that procurement reforms in public secondary schools were constrained by various factors, including capacity challenges among tender committees, which in turn, affected the ability of such committees to take charge of procurement activities. More specifically, Kavula et al. (2014) noted that procurement reforms in public secondary schools of Kitui County were undermined by lack of tender committees. Where such committees existed, their members had not accessed necessary training on procurement reforms, which perpetuated confusion of roles between the committees and school principals. Lack of training also affected members' commitment to committee activities, including the frequency of meetings, as well as attendance and level of participation during such meetings (Kavula et al., 2014).

In Trans-Nzoia County, Embeli et al. (2014) found that procurement reforms were constrained by lack of knowledge and skills in financial management, budgeting, tendering procedures, and Procurement Regulations, 2006 among principals, deputy principals, and tender committee members. This propagated negative procurement practices such as emergency purchases and splitting of tenders to facilitate approval without following due procedures as required by the law. An emergency purchase is an indication of lack of, or poor planning of procurement activities, particularly due to lack of necessary skills. However, some cases of emergency purchases were manifestations of deliberate effort by some principals to create opportunities for personal gain (Embeli et al., 2014). Procurement planning is known to provide a good foundation for expenditure management, particularly by minimising emergency purchases, which prevent procuring entities from obtaining value for money (Odhiambo, 2012). On its part, tender splitting heightens the risk of oversupply of particular goods and overpricing of goods and services, leading to wastage of funds (Odhiambo, 2012).

In Kisii County, compliance to Procurement Regulations by public secondary schools was constrained by lack of training for school tender committees, making them unable to take charge of procurement activities. Lack of essential knowledge and skills among school tender committees creates room for principals to take the centre stage in most procurement activities, albeit with a high risk of manipulation for personal benefits. As noted by Onyinkwa (2012), manipulations by school principals manifested through practices such as tailoring bid conditions to suit particular tenderers, dividing tenders to smaller units for

unilateral approval without involving tender committees, limited advertisement of tenders and emergency purchases of foodstuff. Whereas some principals cited late payment of school fees by parents as the primary justification for tender splitting and emergency purchases, others attributed the practices to delayed disbursement of funds for the Free Day Secondary Education.

In Vihiga County, Angokho, Juma and Musienga (2014) found that procurement reforms in public schools was affected by inadequacy of knowledge on procurement laws and tendering procedures, among members of school tender committees; leading to inefficiency and lack of transparency in tendering processes. Inefficiency manifested through prolonged procurement process, over-pricing of goods and services, and budget overruns, leading to wastage of school resources (Angokho et al., 2014). On the same note, Ramadhani and Kibet (2015) observe that prolonged procurement process is not only wasteful but also costly in terms of time that would be utilised to address competing priorities. Lack of transparency manifested through inadequate or non-advertisement of tenders, either due to lack of knowledge about the importance of doing so or purposefully to safeguard personal interests (Angokho et al., 2014). Nonetheless, lack of transparency affected expenditure management by denying schools the opportunity to access competitive prices, skills, and value for money, while opening avenues for over-expenditure and conflict of interests. In Nairobi City County, information on how procurement reforms influence the management of expenditure in public secondary schools remains scanty; thereby, necessitated such academic investigations.

1.3 Purpose of the Study

The study was intended to determine effect of procurement reforms on the management of procurement-related expenditure in public secondary schools of the Nairobi City County. Its purpose was to generate information that would contribute to policy discourses, influence change in expenditure management practices adopted by public secondary schools, as well as motivate further research to deepen and broaden knowledge on the management of procurement-related expenditure in public secondary schools in Kenya, as well as in other developing countries.

1.4 Objectives of the Study

The study sought to address the following objectives: -

- i. Establish the effect of tender committee meetings on the management of procurement-related expenditure in public secondary schools;
- ii. Determine how the number of members trained in procurement management affects the management of procurement-related expenditure in public secondary schools;
- iii. Examine how tender advertising affects the management of procurement-related expenditure in public secondary schools;
- iv. Assess how emergency procurement affects the management of procurement-related expenditure in public secondary schools;
- v. Establish how open tendering affects the management of procurement-related expenditure in public secondary schools; and
- vi. Determine the effect of tender splitting on the management of procurement-related expenditure in public secondary schools.

1.5 Research Hypotheses

The study determined the statistical significance of the following null hypotheses.

H₀₁: Tender committee meetings have a negative effect on the management of procurement-related expenditure in public secondary schools.

H₀₂: The number of members trained in procurement management negatively affects the management of procurement-related expenditure in public secondary schools.

H₀₃: Tender advertising has a negative effect on the management of procurement-related expenditure in public secondary schools.

H₀₄: Emergency procurement negatively effects the management of procurement-related expenditure in public secondary schools.

H₀₅: Open tendering has a negative effect on expenditure management in public secondary schools.

H₀₆: Tender splitting has a negative effect on the management of procurement-related expenditure in public secondary schools.

1.6 Significance of the Study

The efficiency of procurement process is paramount to effective governance of public institutions (Aketch, 2005). While good practices can increase benefits, save public resources and ensure self-reliance; poor practices lead to waste, malpractices, and financial instability, which in turn, affects operations and development of public institutions (Basheka, 2006; Aketch, 2005; Odhiambo & Kamau, 2003). How well procurement is managed depends on nature of the rules

and regulations governing the process, institutional set-up, competence and integrity of the staff in charge, as well as measures put in place to ensure transparency, integrity, fairness and accountability (Ogachi, 2006). In this regard, effective interventions to enhance the efficiency of school-based procurement systems may only be developed with a clear understanding of issues hindering the reform process. In view of this premise, the study provided a basis upon which stakeholders, including the Ministry of Finance, Ministry of Education, Public Procurement Oversight Authority, and Boards of Management, can gauge the success of procurement reforms; formulate appropriate policies on capacity development to address areas of weaknesses, which in turn, would fast track the reforms process in the secondary schools. Moreover, the information generated by this study enriches extant literature, which makes it a vital resource material for school managers, educational administration scholars, and learners.

1.7 Limitations of the Study

When the study was conducted, the County had 76 public secondary schools (Ministry of Education, 2015), which has since increased to 95 (County Government of Nairobi City, 2017). This study covered 35 schools, which is about 46.1% representation of the schools in the County at the time of the study. Again, at the time of the study, there were 3,868 public secondary schools across the country. In view of this, the sample size used by this study is a very small proportion of all public secondary schools in the entire country, which then limits the extent to which the findings and conclusions of the study can be generalised. Based on this, it is important to note that the findings and conclusions of this study are specific to

the Nairobi City County only, and cannot be assumed to hold true for public schools in other parts of the country. Another limitation of the study is the low response rate among key informants, which included BoM members. In this regard, only 16 of the 30 targeted key informant interviews were successful. This is attributable to factors such as official travel, official leave of absence, and fear of sharing sensitive information regarding school financial performance.

1.8 Delimitations of the Study

The study examined the effect of procurement reforms on the management of procurement-related expenditure in public secondary schools and was conducted in the Nairobi City County. The study was delimited to public schools that were at least ten years old because it was assumed that such schools were likely to provide complete data on annual learner enrolment and expenditure on the procurement of goods, services, and works. The investigator recognises that not all goods and services in public secondary schools are purchased through the tendering process; some purchases are done directly without tendering. However, this study focused on documented purchases that involved tendering only. In addition, the extent of procurement reforms in schools can be measured in terms of numerous indicators; however, this study focused on five of such indicators, which were identified from the literature, including: tender committee meetings, and training of tender committee members on procurement management; as well as tender advertising , emergency procurement, and tender splitting.

1.9 Definition of Terms Used in the Thesis

Board of Management:	The entity that oversees the functions of public secondary schools, including procurement of goods, services and works, as well as management of expenditure.
Expenditure management:	Ensuring optimal utilisation of school funds in the procurement of goods, services, and works. This was operationalised in terms of variation in per capita procurement-related expenditure between the periods before reforms (1999-2002) and after reforms (2007-2010).
Frequency of advertisements:	How often school tenders were advertised in the print media, school notice boards, public notice boards, and during public and religious functions, among others. This was measured as “never”, “occasionally,” or “always”.
Frequency of emergency procurement:	How often school management or tender committees resorted to impromptu sourcing of goods, services, and works, without following the due process. This was measured as “never”, “occasionally,” or “always”.

Frequency of meetings:	The number of meetings held by school tender committees in one quarter. The variable was measured in discrete numbers.
Frequency of open tendering:	How often school tender committees applied open tendering methods to source goods, services, and works. The variable was measured in ordinal scale as “never”, “occasionally,” or “always”.
Frequency of tender splitting:	How often the school management or tender committees split tenders to values within thresholds for unilateral approval to avoid going through the due tendering process. The variable was measured as “never”, “occasionally” or “always”.
No. of trained committee members:	The number of school tender committee members that had accessed training on procurement management. The variable was measured in discrete numbers.
School category:	Whether a school was graded as “national”, “county”, or “sub-county”, according to the Ministry of Education’s grading system.

School location: Classification of a school based on the area in which it's located. The variable was measured as "high-income zone" or "low-income zone". Procurement-related expenditure in public secondary schools is likely to vary between the two areas because of variation in prices of goods and services.

School type: Classification of a school based on the gender of learners that it serves. The variable was measured as "boys", "girls", or "mixed". Procurement-related expenditure in public schools is likely to vary based on the gender of learners. The needs of girls are not the same as the needs of boys.

Learner population: The number of learners enrolled in a school before (1999-2002) and after the reforms (2007-2010). The amount of money spent to procure goods, services or works depend on the level of enrolment, as schools only purchase what is needed by learners.

Procurement plan: A documented schedule that specifies goods, services or works to be procured during a financial year.

Threshold: Maximum amount that can be spent by the school principals without going through the due tendering procedure.

1.10 Assumptions of the Study

The study assumed that all public secondary schools operate in accordance with provisions of the procurement law. The study further assumed that the DPP provides necessary support to enable public secondary schools comply with the new procurement laws and regulations. In addition, the analysis and interpretation of results anchored on the assumption that the amount of procurement-related expenditure depends on population of learners. This implies that schools only spend to acquire goods, services, or works in accordance with learner population. In this regard, an increase in expenditure should correspond with an increase in learner population. Where expenditure increases beyond a 10% margin for inflation and change in learner population, this was interpreted as a sign of inefficiency in procurement-related expenditure.

1.11 Organisation of the Thesis

The Thesis is organised into five chapters. The first chapter describes background of the study, statement of the problem, objectives, hypotheses, significance, limitations, delimitations, and definition of significant terms as applied in the study. The second chapter consists of a review of relevant literature. Chapter three covers the research design and methodology applied to accomplish

objectives of the study. Chapter four presents findings of the study, which are interpreted and discussed accordingly, while chapter five summarises findings of the study, draws conclusions, and recommends corrective policy and programmatic interventions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explores relevant policy, empirical and theoretical literature on procurement reforms in public secondary schools, with a view to locating the study within the context of existing body of relevant literature. Notably, public procurement has attracted colossal interest in the academic, policy and governance platforms (Mugo, 2013).

As stated in the first chapter, public procurement involves acquisition of goods, services, and works by a procuring entity using public funds (KIPPRA, 2006; World Bank, 1995). At the turn of the 21st Century, the value of contestable public procurement was estimated at US \$2,000 billion, which was then equivalent to 7% of the global GDP (OECD, 2001). A decade later, the value of contestable public procurement more than doubled to 18.4% of the global GDP (Mugo, 2013; Mahmood, 2010). Whereas in industrialised countries, the value of contestable public procurement ranges between 5% and 8% of the national GDP, in developing countries it varies between 9% and 13% (Mahmood, 2010; Trionfetti, 2000). This

suggests that public procurement serves a greater economic role in developing countries than it does in developed nations, particularly because in the former, governments are the main buyers of goods, services, and works offered by the private sector (KIPPRA, 2006; Aketch, 2005).

In relation to national expenditure, Basheka and Bisangabasaija (2010) note that public procurement constitutes the highest proportion. For instance, in Kenya, the value of contestable procurement projects has since increased from 35% of the total public expenditure in 2005 to about 60% in 2011 (Mugo, 2013; KIPPRA, 2006). In Angola, the volume of contestable public procurement forms 58% of public expenditure, while in Malawi and Uganda, the proportion is 40% and 70%, respectively (Basheka & Bisangabasaija, 2010). This information suggests that public procurement is the largest item of public spending, which in turn, precipitates the need for a strong institutional framework that would propagate sound procurement practices.

As noted by KIPPRA (2006), sound public procurement practices are essential elements of good governance because they enhance efficiency and reduce expenditure; contrastingly, unsound procurement practices lead to wastage of public resources. Otieno (2004) notes that irregular procurement activities in public institutions provide the biggest loophole through which public resources are misappropriated. As noted by Thai (2001), the basic principles of good procurement practice include accountability, which requires public institutions spend their resources carefully, with a clear knowledge that they are accountable to the public.

A good procurement practice should also be competitive, meaning that contractors should be selected through competition unless single sourcing is fully justified with convincing reasons. A good procurement practice should embrace consistency by ensuring equal treatment of all bidders regardless of racial, citizenship or political inclinations. A sound procurement practice should focus on effectiveness by aligning and contributing to achievement of the government's commercial, regulatory, and socio-economic goals.

Furthermore, a sound procurement practice embraces efficiency by ensuring that procurement activities are carried out cost effectively. As regards fair dealing, procuring entities should treat all suppliers fairly without prejudice, and this includes protection of commercial confidentiality. A good procurement practice should also be devoid of malpractices, and be based on informed decisions. The procurement practice should conform to aspirations, expectations, and needs of target societies. Lastly, a sound procurement practice is one that upholds transparency at all steps of the procurement process and commands the confidence of development partners (World Bank, 2002; Thai, 2001).

Even though many countries, including Kenya, have instituted procurement reforms involving formulation of regulations and enactment of fundamental laws, with a view to improving competition, transparency, efficiency and accountability, compliance to such legal frameworks remains a key challenge, in both developed and developing countries (Gelderman, Ghijsen & Brugman, 2006). In Kenya, various procurement audits performed by Public Procurement Oversight Authority

(PPOA) have revealed that compliance to public procurement laws and regulations remains low (PPOA, 2009a). This study examined the extent to which public secondary schools in Nairobi City County had complied with various provisions of the procurement law, regulations, and policies in relation to variation in the level of procurement-related expenditure. The study focused on six key aspects of procurement reforms, including tender committee meetings, number of tender committee members with relevant training, tender advertising, emergency procurement, open tendering, and tender splitting.

2.2 Effect of Procurement Reforms on the Management of Procurement-related expenditure: Experiences from Various Countries

Many studies have investigated public procurement reforms across developed and developing countries; however, there is shortage of literature that explicitly provides details on how such reforms have been implemented in public secondary schools. The bulk of extant literature is general and covers procurement reforms in the entire public sector. Nonetheless, the challenge of procurement malpractices affects all countries; albeit with varying levels of manifestation and magnitude. Variations also exist in terms of the effectiveness of structures and systems for checking such malpractices, which is indicated by the level of compliance to provisions of procurement laws and regulations. For instance, the prevalence of open tendering is as high as 90% in New Zealand, but as low as 27% in Vietnam. Furthermore, variations exist in between developed and developing countries in terms of the maturity of legal frameworks, institutional structures, and technological facilities. In this regard, developed countries are relatively more

advanced than developing nations, most of which are at fundamental stages of establishment.

In advanced procurement markets, the ongoing reforms activities revolve around strengthening electronic procurement (e-procurement) systems, which is fast gaining reputation due to greater efficiency and transparency. The following sub-sections provide details of country experiences with procurement reforms in the general public sector and more specifically in public secondary schools. The outcome of the review has been organised according to objectives of the study.

2.2.1 Effect of tender committee meetings on the management of procurement-related expenditure in public secondary schools

The devolution of procurement authority, resources, and responsibility to individual public institutions, is one of the hallmarks of procurement reforms in most developed and developing countries; and its purpose is to improve efficiency and sustainable use of public resources. Nonetheless, decentralising such functions to individual institutions brings in new challenges, which necessitate the establishment of new structures such as tender committees to manage procurement activities. In some settings tender committees are named as *procurement committees*; while in others, the structures are known as *tender boards* (OECD, 2016b; 2008). In this study, the term school tender committee was adopted and used to represent all structures created within public secondary schools to run procurement activities.

In England, for instance, the devolution of expenditure management to public schools led to the creation of school tender boards, whose primary mandate is to enhance autonomy of schools in the management of procurement-related expenditure (Perry, 2011a; OECD, 2008). In Scotland, public procurement reforms led to a significant re-organisation, as well as creation of new procurement structures in public institutions. In the education sector, such new structures included school tender committees, which were granted authority to control about 80% of school budget, and the ability to procure goods and services directly from suppliers (Scottish Parent-Teacher Council, 2011). Similarly, the Canadian public procurement reforms devolved procurement functions to public institutions to reduce bureaucracy and enhance efficiency, in line with the Financial Administration Act, 1985 and Government Contracting Regulations (SOR/87-402) (Swick & Tétrault, 2014; Strobo & Leschinsky, 2009).

In Australia, devolution of procurement activities to public institutions is one of the key features of the procurement reforms as guided by the Financial Management and Accountability Act, 1997; and its purpose was to grant autonomy to institutions to procure goods and services directly from suppliers (Department of Treasury and Finance [DTF], 2012; 2006). In Indonesia, public secondary schools established tender committees under guidelines provided by the National Public Procurement Office and guided by the Presidential Decree No. 80/2003 on public procurement (Buehler, 2012; Wescott, 2008).

In Philippines, a key aspect of procurement reforms was the devolution of procurement activities to individual public institutions, as provided for by the Government Procurement Reform Act (RA9184) of 2003. Passing down to public institutions responsibilities such as management of procurement-related expenditure necessitated the establishment of institutional tender committees to ensure accountability in procurement processes and to improve cost efficiency. Devolution of procurement-related expenditure management to public institutions and the establishment of tender committees in public schools were also reported in Brazil, Ghana, Nigeria, and Uganda (Komakech & Machyo, 2015; World Bank, 2013; Kucharsky, 2009; Anvuur, Kumaraswamy & Male, 2006; World Bank, 2003).

School tender committees are at the heart of procurement activities. School tender committees become effective when they meet regularly to address procurement issues at hand, including planning, tendering, tender evaluation, tender award, contract management, or reviewing of procurement activities over a period, among others. In most jurisdictions, the laws and regulations guiding procurement reforms provide guidelines on how institutional tender committees should conduct their business. In England for instance, Section 44(7) of the Utilities Contracts Regulations 2006 specifies that school tender committees should conduct at least two meetings in a term to plan for procurement activities and to review performance of the same during, respectively.

In Scotland, Section 47C (2) of the Scottish Public Contracts Regulations 2006 provide for tender committees to hold regular meetings to conduct their business. In Australia, the Financial Management and Accountability Act, 1997 is explicit regarding the need for school tender committees to hold regular meetings to discuss and review procurement matters in detail and recommendations arising from such meetings are often presented before school boards for guidance, as necessary (DTF, 2012). In Brazil, the need for school tender committees to hold regular meetings to discharge their mandate is clearly provided for by the Federal Law 8,666/93, and the Public Procurement Law, 1993. The need for institutional tender committees to hold regular meetings in order to discharge their mandate is further provided for by the Public Procurement Act, 2003 (Act 663) of Ghana; and the Public Procurement Act 2001 of Tanzania (Maliganya, 2015; Frizzo & Oliveira, 2014).

The importance of tender committee meetings manifests through improved efficiency in the management of procurement-related expenditure. This has been confirmed by studies, as well as audit and management reports. In Scotland, for instance, an audit report associated the frequency of school tender committee meetings with greater efficiency, transparency and significant savings of public resources (Audit Scotland, 2009). In Canada, a study conducted by Brammer and Walker (2007) also linked school tender committee meetings with improvement in the efficiency of procurement-related expenditure by ensuring objectivity of tendering processes, preventing malpractices, such as tender rigging, that were previously cited by audit reports.

In Australia, Jones (2014) observes that tender committee meetings generate practical solutions to address issues that may compromise efficient utilisation of public resources. During such meetings, specialised skills and interests of members are often deployed and used optimally, as responsibilities are shared according to skills and interests (Jones, 2014).

Extant literature further reveals that school tender committees contributed to the improvement of efficiency and management of procurement-related expenditure; however, there is little mention of how the frequency of tender committees influenced such outcomes. A case in point is the study conducted by Byatt (2011), which linked school tender committees with improved efficiency in the procurement-related expenditure, but it failed to determine the statistical linkage between the frequency of meetings held by school tender committees and variation in expenditure management. More still, in Indonesia, a progress report compiled in 2003 noted that devolving procurement activities to school tender committees was crucial for improving efficiency by public schools to save up to Rupees 5 billion annually (World Bank, 2003). However, the study failed to determine the statistical relationship between such savings and the frequency of meetings held by school tender committees. Addressing such gaps forms the purpose of this study.

2.2.2 Number of members trained and the management of procurement-related expenditure in public secondary schools

Decentralisation of procurement activities from government ministries to individual institutions has been a primary focus of procurement reforms in various countries. However, the reforms have also introduced new methods of conducting business. Establishing new entities called tender committees in schools and bringing on board people with no professional training in public procurement precipitated the need for training; but introducing new procurement practices such as e-procurement, doubled up such need. This assertion has been supported by studies, as well as audit and management reports documented in various jurisdictions.

In England for example, the Public Contracts Regulations, 2006 advocates for the training of tender committee members to orient them on their roles, relations, reporting systems, and to improve their performance (Perry, 2011a). In Wales, the reforms introduced e trading in schools in 2008, allowing them to procure goods and services online. In this regard, the orientation of tender committees involved training on e trading in order to improve knowledge and skills on how to tackle challenges brought forth by the new method (Perry, 2011a; Body, 2010).

In Canada, the reforms have changed procurement practices in public schools, particularly by introducing e-procurement, which entails purchase of goods and services through an internet-based platform that is integrated with existing systems such as finance and procurement, among others (Queen's

University, 2016; Swick & Tétrault, 2014; Fagan, 2005). This necessitated the introduction of a capacity-building programme, which targeted all public officers obligated to manage procurement activities in public institutions, in order to improve efficiency by shortening procurement processes; as well as improving the connection between planning, budgeting, and execution of procurement plans. Capacity building was also intended to improve skills that are pertinent to procurement practice, including market survey, negotiation, documentation, and record keeping, among others (Fagan, 2005).

In Australia, Jones (2014) found that procurement reforms led to the formulation of a detailed blue print for rolling out a training programme aimed at enhancing the capacity of officers in all public institutions, including schools. Capacity-building programmes were particularly necessitated by the introduction of e-procurement system in schools in 2002; and its purpose was to enable school tender management committees know how to run procurement activities using the new system. Capacity building also aimed at improving the conduct of business by tender committees by equipping them with skills on how to identify and deliberate on issues pertinent to enhancing efficiency of procurement-related expenditure in the devolved system (Jones, 2014).

In public schools, achievements of the reforms process included improved savings, skilled staff, functional procurement committees and enhanced accountability (Jones, 2014; DTF, 2006). Besides, by developing such institutional capacity on procurement activities, the training programme established an internal

system of accountability, which according to Jones (2014), contributed to the reduction of malpractices including tender splitting, emergency purchases, and bribery, among others; while improving expenditure efficiency. In the state of New South Wales, for example, the training of tender committees led to huge savings for public schools, which Jones (2014) estimated at AU\$218 million in two years.

In Philippines, the Procurement Reforms Act, 2003 provides guidance on the decentralisation of procurement activities to individual institutions, as well as membership composition of tender committees in such institutions. Even though the decentralisation promoted autonomy, innovation, and efficiency, it bestowed a huge responsibility on public institutions (World Bank, 2005). In public schools, annual audit reports revealed that members of tender committees were deficient in terms of skills and experience to deal with procurement challenges; thus, prompting them to rely on own interpretations and perceptions to administer procurement regulations. This precipitated the need for a nationwide training programme that was rolled out in 2004, targeting tender committees of all public institutions (World Bank, 2005). The training programme was designed to improve knowledge on the procurement law, regulations, and policies; thereby, improve adoption of best procurement practices, while discouraging malpractices.

While evaluating the effectiveness of procurement law in the administration of public finance in Ghana, Senzu and Ndebugri (2017) found that procurement reforms entailed building the capacity of tender committees and staff involved in procurement activities at the institutional level, including public schools. Capacity

building was particularly necessitated by the realisation that most tender committees in public institutions lacked members with professional competence and experience, as revealed by 41% of the participants. Capacity building was also motivated by the need to enhance knowledge on procurement law with the hope of improving compliance in all public institutions, as a critical prerequisite for the management of procurement-related expenditure. The importance of awareness and knowledge of procurement law in the management of procurement-related expenditure has also been documented by Musa, Success, and Nwaorgu (2014) in Nigeria as well as Komakech and Machyo (2015) in Uganda.

In Kenya, improving the competency of tender committees was prioritised in the plan that operationalised procurement reforms in public institutions. Improving competency entailed building the capacity of tender committee members alongside staff involved in various procurement activities on the procurement regulations, laws, and policies. The trainings were initiated in 2002 by the Directorate of Public Procurement within the Ministry of Finance (Kavula et al., 2014). The training programme was intended to improve knowledge of procurement laws, regulations and policies, as an important foundation for compliance and efficient expenditure of public resources (Aketch & Karanja, 2013).

The effectiveness of training programmes in institutional settings depends on the coverage or the proportion of workers trained. Jones (2007) notes that training all members of a team is critical for improving productivity of an

organisation and for preventing loss of skills over time. This suggests that training a few members of a team bears certain risks, including the dissipation of skills in the event of immediate and unprecedented exit of trained members. Besides, cascading the skills to other team members may not be as effective, particularly in contexts that lack funds to facilitate skill transfer from trained members to their colleagues, which is reminiscent of school tender committee contexts. In view of this, one can validly assert that a tender committee in which all members have accessed necessary training are likely to perform better in managing procurement-related expenditure than one in which only a few or none have accessed such training. This assertion is based on the realisation that in most developing countries, there is little or no budgetary allocation for building the capacity of school tender committees.

Notably though, very few authors have documented information regarding the proportion of school tender committees accessing training in relation to the effectiveness of school tender committees in managing procurement-related expenditure. In Canada, the capacity building of tender committees targeted all members (Queen's University, 2016); in Uganda, regular programme assessment reports once recommended the need for all tender committee members to access training in order to improve efficiency of the procurement system (Public Procurement Oversight Authority, 2007).

In Nigeria, Musa et al. (2014) found that training enabled school tender committees to address huge a backlog of cases on financial mismanagement in

public schools because members acquired skills on how to read financial records and detect irregularities, as well as sustain compliance with procurement regulations. However, the study did not evaluate changes in the procurement-related expenditure in relation to the proportion of trained tender committee members.

In Kenya, members of school tender committees were selected and trained, with the hope that they would share the knowledge and skills with their colleagues (Aketch & Karanja, 2013). In their study, Kavula et al. (2014) noted that the implementation of procurement regulations in public secondary schools of Kitui County was influenced by various factors, including lack of tender committees in some schools; lack of induction courses to enhance awareness and knowledge of procurement regulations; as well as lack of in-service training opportunities. However, the study did not go to the extent of establishing the relationship between the proportion of trained committee members and variation in the level of procurement-related expenditure.

2.2.3 Effect tender advertising on the management of procurement-related expenditure in public secondary schools

Enhancing transparency of the procurement process is one of the key objectives of procurement reforms in both developed and developing countries. Tender advertising is one strategy that enhances transparency at the very beginning of procurement processes, with remarkable contribution to the management of procurement-related expenditure. Extant literature reveals that in many countries,

procurement reforms advocated for tender advertising as a way of enabling public institutions to obtain the most qualified tenderers and the most competitive price quotations.

In Canada for example, procurement laws and regulations, including the Financial Administration Act, 1985; Government Contracting Regulations (SOR/87-402); Treasury Board Contracting Manual, 2010; among others, emphasise the advertisement of that all public tenders in the print and electronic media of national circulation (Swick & Tétrault, 2014; Fagan, 2005). The Government Contracting Regulations (SOR/87-402) further specify the contents of tender advertisements, including information on the type of procurement to be undertaken, qualification criteria, as well as details of tender procedures and specification requirements.

According to Strobo and Leschinsky (2009), among other aspects, public procurement reforms aimed at promoting openness, fairness, and transparency when calling for quotations in order to prevent fraudulent practices that would lead to loss of public funds. In this regard, Fagan (2005) noted that compliance with tender advertising regulations contributed to efficiency of procurement-related expenditure, enabling public schools to prevent loss of their budgetary resources. However, no study in Canada had ever gone to the extent of determining how the frequency of tender advertising affects variation of procurement-related expenditure.

Public procurement reforms have been ongoing in Australia since 1997 following enactment of the Financial Management and Accountability Act (DTF, 2012; 2006). The most commonly cited reforms were those initiated between 2000 and 2005, in line with recommendations of a study that was conducted in 2003. The study highlighted various issues that impeded efficiency of the public procurement system. Enhancing transparency of public procurement through tender advertising is a key aspect of the reforms that has attracted the attention of many researchers.

For instance, Vaidya, Yu, and Soar (2002) noted that tender advertising contributed to a significant reduction of procurement-related expenditure by enabling public institutions to engage qualified service providers at the most appropriate cost. This prevented loss of public funds through poor quality goods, services and substandard works; thereby, enabling public institutions to obtain value for money. By getting the most competitive offers, advertising enabled public institutions to avoid payment of inflated prices and contractor fees. As noted by Jones (2014), tender advertising contributed to efficiency of procurement-related expenditure, which according to Jones (2014), enabled public schools to save up to AU\$110 million annually.

In Philippines, the Procurement Regulations, 2003 specified the strategies and procedures for enhancing transparency of procurement processes. More specifically, procurement regulations amplified the need to advertise public tenders in a variety of newspapers and other accessible media as one of the measures for enhancing transparency and improving efficiency of procurement-related

expenditure (Jones, 2007). Notably, the introduction of e-procurement in 2006 was vital for introducing electronic tender advertising, in addition to promoting electronic registration of suppliers, bidding, and payment (Jones, 2007). The regulations require all public entities, including public secondary schools to advertise their tenders to enhance transparency and discourage corrupt practices. Despite such measures, Jones (2007) observes that the persistence of corruption in the public procurement suggests that certain aspects of the procurement process remain covert, and corruption thrives in an environment of secrecy. However, the author did not establish how the frequency of tender advertising causes variation in the level of procurement-related expenditure.

In Indonesia, the need and importance of transparency in public procurement was accorded prominence in the procurement laws and regulations (Nurmandi, 2013; Buehler, 2012; World Bank, 2003). In this regard, procurement reforms emphasised the aspect of tender advertising as one of the best practices to be adopted by procuring entities, including public schools. More specifically, Section 72 (a) of the Presidential Decree No. 80/2003 require all procuring entities to advertise invitations in at least one newspaper of national circulation, two weeks in advance (Buehler, 2012). Besides, sub-section (b) requires that copies of such invitations to be posted in at least three publicly accessible and conspicuous places (Buehler, 2012).

About a decade down the line, Nurmandi (2013) found that most public secondary schools were struggling to comply with the regulation, with some

advertising tenders for only a limited time, and others failing to advertise or post invitations in publicly accessible places, as required by the Presidential Decree. The study noted that inadequate or non-advertisement of tenders limited the competitiveness of procurement processes; thereby, heightening the risk of spending too much for lesser value. Earlier in 2007, another study found that the Indonesian procurement system was still nascent, as indicated by the non-advertisement of most public tenders, leading to loss of public funds to due to less value (Jones, 2007).

The Brazilian Public Procurement Law (Federal Law 8,666/93), stipulates the need for transparency in the public procurement system, by requiring all public institutions at the Federal, State and Municipal administrative levels, including secondary schools, to advertise tender opportunities (Kucharsky, 2009; Ozorio de Almeida, 2005). Arguably, advertising tenders was necessitated by the need to optimise the cost-value combination for procuring entities, as well as ensure efficient utilisation of public funds. The need for tender advertising was amplified by introduction of the e-procurement system, whose purpose was to improve efficiency in public procurement by making tender processes more transparent, competitive, cost-effective and less bureaucratic (Kucharsky, 2009; Ozorio de Almeida, 2005).

A study conducted by Frizzo and Oliveira (2014) found that tender advertising contributed significantly to the management of procurement-related expenditure in many public institutions, particularly by enabling such institutions

to obtain the best value for money. Even though the e-procurement system widened the spectrum of suppliers for most public institutions, the use of e-procurement to advertise tenders in public secondary schools was constrained factors such as limited access to functional computers, weak internet connectivity, and shortage of essential skills (Frizzo & Oliveira, 2014). Notably though, there is hardly any literature that demonstrates how the frequency of tender advertising affects variation in the level of procurement-related expenditure within public secondary schools. Nonetheless, the study acknowledges the importance of tender advertising towards improving transparency in public procurement.

Another study, which was conducted in several Latin American countries by the Inter-American Development Bank (IDB), noted that even though the pace and progress of procurement reforms varied from country to country, all of them had improved in terms of transparency and efficiency of public procurement (IDB, 2014). In this regard, about 70% of public tenders were published on the internet, which then allowed interest bidders to participate in business opportunities. Such reforms led to considerable savings in public spending in the region. A case in points is Nicaragua, where public institutions realised savings of up to US\$30 billion in 2012 alone, due to consistency in tender advertising and its subsequent benefits regarding quality and price competitiveness (IDB, 2014).

Enhancing transparency in the procurement process also featured prominently in the procurement reforms of many African countries. For instance, in Nigeria, procurement reforms aimed at increasing the frequency of tender

advertising in the entire public sector in order to prevent loss of public resources through expenditure on substandard goods, services, and works. In their study, Musa et al. (2014) revealed that public institutions were increasingly advertising tenders and so were public secondary schools. In the latter, tender advertising enhanced efficiency in procurement-related expenditure; which in turn, enabled the institutions to save millions of Naira that could have been lost through inflated prices (Musa et al., 2014).

Inflation of prices is a primary avenue through which public institutions lose resources by paying for goods, services, and works, at prices that are above market rates. The risk of price inflation is relatively higher in institutions where tenders are not advertised widely or not advertised at all than in contexts where tender advertising is a norm. Where a wider spectrum of suppliers is invited to participate in tender, procuring entities gets the opportunity to evaluate offers and to settle on the most competitive in terms of qualifications and prices.

In Uganda, the reforms focused on improving transparency and accountability of the procurement process through various ways, including encouraging all public institutions to advertise tenders. In view of this, Komakech and Machyo (2015) found that consistent advertisement of tenders in the print and electronic media enabled public secondary schools to attract a huge number of competent bidders from all over the country; unlike the period before the reforms when most bidders came from local communities. The wide scope of bidders increased chances of the schools obtaining goods and services of higher quality and

at the most competitive price (Komakech & Machyo, 2015), which was crucial for preventing over-expenditure and wastage of public funds. Even though the study hinted at a possible relationship between tender advertising and variation in the level of procurement-related expenditure, it did not establish the statistical relationship between the two aspects.

Like in other countries, the Kenyan reforms focused on promoting transparency in the procurement process in order to prevent loss of public funds, and as such, improve expenditure efficiency. More specifically, Section 54 of the Public Procurement and Disposal Act, 2005, read together with section 37 of the Public Procurement and Disposal Regulations, 2006, stipulates the need for all public institutions to advertise tenders in accordance with applicable thresholds (Government of Kenya, 2010; 2006).

Despite the legal provisions, very few studies that have examined procurement reforms within the context of public secondary schools have explored the subject of tender advertising, while none has evaluated how the frequency of tender advertising influences variation procurement-related expenditure. For instance, Embeli et al. (2014) and Angokho et al. (2014) identified inconsistent advertisement of tenders as one of the factors undermining the efficiency of procurement-related expenditure in Kenya's public secondary schools. Nonetheless, both studies did not go to the extent of determining the statistical relationship between the frequency of tender advertising and variation in the level of procurement-related expenditure in the schools.

2.2.4 Emergency procurement and the management of procurement-related expenditure in public secondary schools

In all countries, procurement reforms focus on discouraging emergency purchases, regardless of whether such respond to genuine crises or are fraudulently induced to facilitate the siphoning of public funds. The purpose of genuine emergency purchases is to provide relief to members of the public from adverse effects of various forms of crises, including sudden macro-economic shocks, natural or manmade disasters, failure of critical infrastructure or equipment, critical health and environmental emergencies, as well as political and security emergencies (New Zealand Government, 2015; Schultz & Søreide, 2006). Emergency procurement entails express acquisition of goods, services, or works without following instituted procedures in order to respond to a crisis at hand. Regardless of whether such crisis is genuine or corruptly induced, during emergencies, the procurement process becomes highly vulnerable to manipulation by accounting officers or procurement staff in collusion with unscrupulous tenderers for personal gain (Schultz & Søreide, 2006).

Emergency procurements are chided for increasing the risk of direct and indirect loss for public institutions. Directly, public institutions become at risk of losing their financial resources through inflation of prices and/or delivery of substandard goods, services, or works at the market or above-market prices. Indirectly, Berger and Humphrey (2007) rightfully cautions that awarding contracts without following the due process is likely to have huge financial implications in

the event that such contracts are flagged out by audit processes and cancelled before finalisation. Cancellation of contracts often culminates to court battles, which may lead to further loss of public funds through compensations. In view of this, accounting officers need to carefully weigh the risks and benefits, as well as take appropriate safety measures before embarking on emergency purchases.

Contrastingly, the reforms have focused on encouraging public institutions to plan procurement activities in order to prevent situations that may necessitate emergency purchases, where due process is skipped in order to respond to situations at hand. Procurement planning entails sketching out plans regarding the type goods, services or works to be purchased by an institution within a given period. Procurement plans contain specifications regarding the quality and quantity of the items to be procured, tendering methods to be used for each item and a schedule for delivery (Apiyo & Mburu, 2014; Lynch, 2014; Himmie, 2010). Ideal procurement plans should enable public institutions to purchase only what is budgeted for; thereby, optimise the value for money. This makes such plans vital tools for controlling expenditure (Apiyo & Mburu, 2014; Lynch, 2014).

Notably though, procurement plans can only be useful in the management of expenditure if they are respected and implemented accordingly. This means that the risk of wastage and excessive spending remains real unless an institution has proper systems and mechanisms for ensuring fidelity to procurement plans. Along the same line of thought, Apiyo and Mburu (2014) observe that whereas procurement planning enables public institutions to utilise resources prudently,

emergency procurement is associated with wastage of resources and unmanaged procurement-related expenditure. Consequently, one may validly deduce that the higher the frequency of emergency procurement the greater the level of wastage.

Extant empirical, policy, and legislative literature reveals that whereas emergency procurement is a critical strategy for mitigating the effects of genuine disastrous and shocking events, the provision is vulnerable to manipulation and abuse by some accounting officers. Consequently, emergency procurements are chastised in many jurisdictions for unnecessarily increasing procurement-related expenditure (Lynch, 2014; World Bank, 2013; Welsh Assembly Government, 2010; Schultz & Søreide, 2006).

In the State of California, for instance, section 12102(a) of the Public Contracts Code (PCC) forbids emergency acquisition of goods, services, or works, except in situations where such immediate acquisition is necessary for the protection of public health, welfare and safety of citizens (State Department of Finance, 2010). A recent independent evaluation of public procurement systems by the World Bank revealed that even though procurement planning had increased to near universality over the preceding decade, the frequency of emergency purchases in public institutions had reduced by about one-half from 71% to 22% during the same aeon; thereby, leading to significant savings of public resources (World Bank, 2013).

The achievements were attributed to elaborate sensitisation programmes that were initiated by the State Department of Finance with the aim of instilling the culture of procurement planning, and the ultimate goal of preventing situations through which the provision of emergency procurements could be abused (World Bank, 2013). The achievements were further linked to control measures, which require all public institutions, including public schools, to follow some quick procedures to gain authority to incur expenditure during situations that warrant emergency purchases.

In this regard, public institutions were required to provide a description of the emergency event or situation; explanations of how the situation or event falls within the parameters of an emergency to justify emergency purchases; as well as explanations on the consequences of making the purchase through normal procurement processes. Additional requirements include a description of goods and/or services to be acquired and their prices; as well as the names and quotations of potential suppliers contacted (World Bank, 2013).

In the context public schools, Karp (2012) noted that despite significant progress in the reduction of emergency purchases over the cited epoch, there were significant variations between and within federal states regarding the extent to which public schools had reduced emergency procurements and the effect of such actions on the procurement-related expenditure. Consequently, procurement activities in public schools were dotted with various irregularities, including induced emergency purchases, alongside bribery claims, collusion between some

school principals and tenderers to inflate prices, as well as contract splitting, among other malpractices, which undoubtedly increased procurement-related expenditure (Karp, 2012).

In Wales, procurement reforms have been guided by the Utilities Contracts Regulations 2006, which implements the European Union's directive on public procurement (2004/18/EC) (OECD, 2016b). Procurement reforms have been intended to edge out malpractices such as fraudulent emergency purchases, and bring on board more efficient, smarter, and planned procurement practices (OECD, 2016b; Perry, 2011a). In the education sector, the reforms have granted autonomy to public schools to plan and procure goods and services directly from suppliers in the free market. The purpose of planning is to enable schools to search for the best quality goods, services or works, at the most reasonable price.

Even though the Regulations 2006 provide for emergency purchases during genuine crises, strict measures have been initiated to regulate the practice in order to prevent abuse by some stakeholders (Perry, 2011a; Body, 2010). Before the reforms were initiated in 2006, Welsh public institutions experienced a high frequency of emergency purchases, most of which arose due to management failures or aforethought fraudulent schemes to siphon public funds. In this regard, the 2010 annual audit report revealed that emergency procurements accounted for a significant 20% of loss in public funds through corruption (Welsh Assembly Government, 2010); which gives the impression that no system is immuned against fraudulent emergency acquisitions.

More still, emergency procurement is one of the practices that motivated the introduction of procurement reforms in a number of Latin American countries, including Brazil, Nicaragua, Chile, Colombia, Costa Rica and Dominican Republic, among others (World Bank, 2013). The practice affected the management of procurement-related expenditure by creating opportunity for bidders to inflate prices of goods, services, or works, sometimes in collusion with accounting officers or procurement staff. The report further associated emergency purchases with sub-standard quality of goods and services, which denied public institutions the value for money (World Bank, 2013).

In relation to this, a study conducted by IDB illustrated that prior to reforms, which began in 2000; the Government of Colombia lost about US\$ 380 million annually due to emergency purchases by public institutions (IDB, 2014). However, the reforms introduced various measures, including procurement planning and effective monitoring, which have contributed to the reduction of procurement-related expenditure, leading to huge savings of public resources.

The IDB report further indicates that procurement reforms enabled Brazilian public schools to save US \$120 million in 2012, which could have been lost through emergency purchases. However, the positive result was not entirely attributed to reductions in the frequency of emergency purchases, because the reforms targeted other malpractices as well; including tender splitting, single sourcing of suppliers, and tender rigging, among others. The nexus emphasises the need for information that explicitly determines how the emergency procurement

causes variation in the level of procurement-related expenditure in public secondary schools.

The Government of Indonesia embarked on comprehensive reforms of the procurement system in 1998, as part of a broader effort to improve the country's public financial management system (Buehler, 2012; Wescott, 2008). The reforms, which were formalised in 2003 when Presidential Decree No. 80/2003 (procurement regulations) on public procurement was enacted by parliament, aimed at improving efficiency, transparency, and accountability. The reforms process involved adoption of new procurement regulations and establishing a central procurement agency with a broad mandate of enforcing and monitoring compliance among public institutions (Buehler, 2012). A key feature of the Indonesian procurement regulations is the need to criminalise and eliminate collusive procurement practices (Article 22 of the Competition Law), which manifested through fraudulent emergency purchases, contract splitting, bribery, and bid rigging, among others (Buehler, 2012).

A study conducted in 2012 revealed that procurement reforms had contributed to a significant reduction of collusive corrupt practices in public institutions, including public schools; thereby, saving the country up to IDR 315 trillion (US\$34 billion) or around 30 percent of the state budget annually (Nurmandi, 2013). The achievement was partly attributed to the introduction of e-procurement through the Presidential Regulation No. 54/2010. The level of achievement was however, constrained by factors such as a weak state capacity and

insufficient enforcement at individual institutional level (Nurmandi, 2013; Buehler, 2012). Notably though, there is no information that explicitly determines a causal linkage between the frequency of emergency procurement and variation in the level of procurement-related expenditure. Also scanty from the Indonesian experience is information that delineates the effect of emergency procurement from the effect of other procurement practices on variation in the level of procurement-related expenditure within public secondary schools.

Public procurement reforms in most African countries have been motivated by the need to spur competition, improve transparency, ensure accountability, and eliminate practices that promote or create conducive environments for corruption to thrive (Dza, Fisher & Gapp, 2013; Hunja, 2003). In South Africa, for instance, procurement reforms were initiated in 1995 to promote good governance, improve transparency and accountability, create and strengthen governance structures, as well as eliminate practices that perpetuate corruption (Ambe, 2016). Pillay and Erasmus (2015) identify emergency procurement as a practice that motivates the proliferation of corrupt practices, which manifest itself in various forms, including bribery, extortion, bid rigging, and collusion with suppliers to over-price goods, services, or works, among others.

In order to discourage emergency procurement practices, the reforms promoted planning of procurement activities to ensure that public institutions procure only what they need, using appropriate methods, and at the correct price and time (Ambe, 2016; Dza et al., 2013). Despite such initiatives, extant literature

indicate that procurement-related expenditure has been increasing over the years, which suggests that having procurement plans does not necessarily translate a reduction in procurement-related expenditure, unless such are implemented with fidelity. Among public schools, even though evidence suggests a high level of compliance with regulations on procurement planning, the implementation was lacklustre.

As a result, procurement-related expenditure was on the rise as demonstrated by the findings of Woolcock (2008) and Ambe (2016). In this regard, procurement-related expenditure increased from about US\$ 19 billion annually in 2003 to about US\$ 30 billion by 2011. The upward trend was been attributed to corruption, incompetence and negligence among public officers, which contributes to non-compliance with procurement legislation and policies (Ambe, 2016). In the context of public secondary schools, non-compliance with necessary legislation and polices was associated with weak monitoring structures at the institutional level, which speculatively, influenced the upward trend of procurement-related expenditure levels (Ambe, 2016). Nonetheless, the literature review process reveals the existence of information gap regarding the extent to which emergency procurement practice affected variation in the level of procurement-related expenditure in public secondary schools.

In Kenya, Kavuva and Ngugi (2014) found that the frequency of emergency procurement significantly associated with expenditure efficiency among county governments. In this regard, emergency procurement affected expenditure

efficiency by facilitating hiking of prices; thereby, leading to unnecessary expenses and a relatively higher risk of budget overruns. The latter brings forth far-reaching implications on an institution's performance and credibility, such as noted by Mamiro (2010) in a study that assessed the performance of Tanzanian public procurement.

2.2.5 Effect of open tendering on the management of procurement-related expenditure in public secondary schools

All over the world, promoting consistent use of open tendering methods has been a crucial aspect of procurement reforms. In most jurisdictions, open tendering is recognised as the most appropriate method for enhancing transparency in the procurement process, in addition to attracting a high number of bidders; which enable procuring entities to access competitive offers in terms of quality and cost (Price Waterhouse Coopers [PWC], London Economics & ENCORYS, 2011). In this regard, a publication of the Organisation for Economic Cooperation and Development (OECD) observes that open tendering method is essential for prudent use of public resources by enabling public institutions to engage the best and most competitive suppliers, service providers, or contractors (OECD, 2016b).

A distinctive feature of open tendering method is that tenders are usually advertised in prescribed print and electronic media, even though such undertaking may be too expensive for small institutions such as public secondary schools (Ondore, Odoyo, Obura, Kobiero, Odondo, & Okello, 2015). However, by attracting a high number of bidders, open tendering method should generate

sufficient funds through application fees, which may be used to defray advertising costs; thereby, control the level of procurement-related expenditure. Expenditure is particularly optimised when resources are used to obtain quality goods, services, or works that enable public institutions to obtain and stretch value over a long time (OECD, 2016b).

Extant literature shows that the frequency with which an institution applies the open tendering method to procure goods, services and works has a significant influence on the level of procurement-related expenditure. For instance, in Europe, procurement reforms promoted open tendering over other methods particularly because it provides a wider choice of quality and cost combination, which enables public institutions to select the most qualified tenderers, offering the most competitive prices. In other words, open tendering guarantees the best value for money. Open tendering is also revered for presenting minimal or no opportunities for malpractices, which often lead to spending more for less value (PWC et al., 2011). Thus, consistent application of open tendering methods is vital for saving public resources from wastage. A case in point is Denmark, where consistent application of open tendering provides cost savings to the national budget at approximately EUR 124 million annually (PWC et al., 2011).

Furthermore, the Scottish Public Contracts Regulations, 2006 stipulates and emphasises the use of open tendering methods to enable procuring entities obtain the best value (Scottish Parent-Teacher Council, 2011; Audit Scotland, 2009). An evaluative study conducted by the OECD in 2011 found that open tendering

procedures constituted up to 73% of all public tender opportunities advertised in official print and electronic media in the year 2010. This suggests a high level of open tendering practice, which enabled public institutions, including schools, to optimise procurement-related expenditure (OECD, 2012).

In New Zealand, Rule 32 of Government Procurement Regulations requires all public institutions, including schools, to apply open tendering methods, which are effected through open advertisement of contract opportunities (New Zealand Government, 2015). To reinforce conformity, Part c of the same Rule requires public institutions to provide access to all relevant tender documents free of charge. The annual audit report of 2013 indicates that about 90% of public tenders were administered through the open tendering method as an effective way of enabling procuring entities, including public schools to achieve the best value for money (Ministry of Finance, 2014). In addition, World Bank's independent evaluation found that open tendering method had contributed to improvement in the management of procurement expenditure by enabling public institutions to acquire goods, services, and works of high quality; which then enhanced efficiency of procurement-related expenditure in the procurement of goods, services and works.

In Cambodia, the application of open tendering method was very low in the first decade of the 21st Century, as revealed by a study commissioned by the World Bank in 2004, as cited by Jones (2007). The study reported that provisions on open tendering were often waived in situations where the number of bidders was too limited, as well as in situations of emergency (Jones, 2007; World Bank, 2004).

The analysis performed by Jones (2007) revealed that inconsistent application of the open tendering method exposed public procuring entities, including public secondary schools, to risks of over-spending on items and services of poor quality; thus, inflating procurement-related expenditure (Jones, 2007).

In Vietnam, even though the procurement regulations of 2003 stipulates open tendering as the primary method through which public tenders should be awarded, a few recent studies have revealed the scarcity of open and competitive bidding at the national, provincial and individual institutional levels (World Bank, 2013; Jones, 2007). In this regard, World Bank's independent evaluation report, estimated that less than 30% of national-level tenders were awarded through the open tendering method; while at the provincial, the proportion of tenders subjected to open tendering was less than 5%. This is rather abysmal when compared with the proportions reported in developed countries such as Denmark and New Zealand.

Even though such information is not available for public secondary schools; based on the trends at the national and provincial tiers, one may justly speculate that the proportion of open tendering could be less than 1% in such institutions. World Bank's independent evaluation report shows that limited bidding and single sourcing, accompanied by direct negotiation, were the most preferred methods, albeit with significant embellishment of procurement-related expenditure. Such methods are known to be deficient in terms of transparency, which aided loss of public resources because corruption blossoms in obscure procurement systems (World Bank, 2013; Jones, 2007).

The Tanzanian public procurement system has been undergoing legal, institutional, and systemic reforms since 1992. At the time of this study, procurement activities were guided by the Public Procurement Act, 2011 and Public Procurement Regulations, 2013 (Government of Tanzania, 2015). Article R149 of the Regulations recognises open tendering as the default method for public tenders of international, national, district, and institutional scope (PPR-R149). As noted by Mlinga (2014), even though open tendering is not the most cost-efficient method to administer, the preference bestowed upon it in Tanzania is informed by the need for transparency, as well as quality and cost competitiveness, which are essential pre-requisites for realising lasting value for money.

A joint evaluative study conducted by the Government and partners revealed that public institutions, including public secondary schools, were gradually complying with provisions on open tendering. Notably though, compliance was relatively higher at the national ministries level than it was in individual schools (Government of Tanzania, 2015). The study further revealed that non-compliance with the said provisions among public secondary schools was associated with challenges, such as resource constraints and shortage of technical capacity to administer open tendering method, as well as collusion between some accounting officers and tenderers. In view of this, one may cogitate that public secondary schools have not achieved an optimal level of procurement-related expenditure.

In Kenya, the Procurement Act, 2015 and Procurement Regulations, 2006 prescribe open tendering as the primary method to be applied by all public institutions, including public secondary schools (Government of Kenya, 2015; 2006). Procurement reforms were initiated in public schools in 2002 through a circular, which required the institutions to, among other practices; apply open tendering in their procurement activities (Embeli et al., 2014; Kavula et al., 2014). Compliance with the provision was expected to enhance efficiency of procurement-related expenditure; thereby, enable public schools to obtain value for money. About 15 of years down the line, a number of evaluative studies have been conducted in Kenyan public secondary schools, focusing on various topics that relate to the implementation of procurement reforms. For instance, Angokho et al. (2014) examined factors undermining the transparency and accountability in public procurement processes; while Ondore et al. (2015) examined effect of different strategies on procurement efficiency in public secondary schools. In another pertinent study, Kavula et al. (2014) examined factors that influence the adoption of procurement regulations in public secondary schools.

In relation to the application of open tendering method, Ondore et al. (2015) acknowledged that consistent use of wrong tendering methods affects competition and prevents public schools from realising value for money. Angokho et al. (2014) noted that even though open tendering was the most used method in Kenya, its application in public schools was constrained by limited budgets. This implies that non-competitive methods, such as single sourcing, continue to dominate in public secondary schools. Even though such tendering methods may be perceived to be

less demanding in terms of administrative costs, they create opportunity for tenders to be awarded to unqualified bidders, sometimes at prices that are above market rates. Hence, public institutions end-up paying more than they would in under open tendering method (Jones, 2007).

On their part, Kavula et al. (2014) concurred with peer studies that open tendering was the most preferred method in public schools, which drew it closer to the intended status as the default method of procurement in line with Sections 91, 92 of the Procurement Act, 2015 (Government of Kenya, 2015). Notably though, none of the cited studies explicitly analysed the causal relationship between the frequency of open tendering method and variation in the level of procurement-related expenditure.

2.2.6 Effect of tender splitting on the management of procurement-related expenditure in public secondary schools

Procurement regulations around the world specify expenditure threshold for public institutions in various categories by defining the maximum amount that accounting officers can spend in procuring goods, services or works, without involving committees obligated to manage procurement activities in an institution. Expenditure threshold contributes to expenditure efficiency by denying accounting officers the power to handle and direct certain levels of expenditure (PWC et al., 2011). Nonetheless, expenditure threshold is vulnerable to manipulation by accounting officers, unless backed by effective regulatory structures and systems (Jones, 2007). According to OECD, infidelity to expenditure thresholds manifests

through splitting of big tenders or contracts into two or more units whose value fall within the threshold bracket for unilateral approval by accounting officers (OECD, 2016a).

Tender splitting is known to provide a leeway for nepotism, bribery, and collusion between accounting officers and bidders to hike prices with the intention of sharing proceeds. When bidders overstate prices, public institutions are obliged to spend more than necessary; thereby, leading to loss of public funds. The frequency of tender splitting varies directly as the risk of public institutions losing large amounts of their resources (OECD, 2016a). Available literature reveals that tender splitting is known by various other terms, including contract splitting, tender sub-division, or contract sub-division. In this study, tender splitting is the applicable term.

The literature further reveals that tender splitting is a common practice through which corruption permeates into public procurement systems of many countries (European Commission, 2016; Pillay & Erasmus, 2015; European Union, 2015; Asian Development Bank [AsDB], 2012). In Europe for instance, policy, programme and empirical literature identify tender splitting and violation of threshold provisions as common malpractices that for a long time, have contributed to loss of public funds in various countries, including Hungary, Slovenia, Georgia, Armenia and Portugal just to mention a few (European Commission, 2016).

Within individual countries, tender splitting has been identified as a common form of corruption in various public institutions, including public secondary schools (European Commission, 2016). In Hungary for example, corruption in the public procurement system remains a key concern, despite the multiple interventions that have been initiated, over the past decade, to reduce its prevalence. In public secondary schools, corruption occurs in various forms including sub-division of contracts to facilitate unilateral approval by accounting officers (European Union, 2015; Tatrai & Nyikos, 2013). Recent estimates show that public secondary schools lose about EUR 13 billion annually due to procurement malpractices (Tatrai & Nyikos, 2013).

Tender splitting is also a common practice in Northern Ireland, according to Perry (2011b). In this regard, procurement reforms focused on building the capacity of public schools' management and tender boards to eliminate malpractices in school procurement activities, including ensuring compliance with threshold provisions, as provided for by the European Public Procurement Rules, introduced in 2016 (European Union, 2017; Perry, 2011b). Notably though, most literature focus on procurement malpractices in the entire public sector, with a few exploring the same in the education sector. As a result, academic information showing how the frequency of tender splitting affects variation in the level of procurement-related expenditure in public secondary schools remains scrubby.

Tender splitting is also identified as a common malpractice in the United States' procurement system (OECD, 2016b; United States Office of Federal

Procurement Policy [USOFPP], 2013). Notably, significant corruption risks arise from sub-division of contracts into smaller lots that can be approved without the involvement of school tender boards. Sub-division of contracts presents a problem where accounting officers award contracts for the resulting small lots without consulting school tender boards. The direct costs of such practice include loss of public funds through higher expenses, and in some situations beneficiaries supply goods, services or works of lower quality, which prevents public schools from obtaining best value for money (USOFPP, 2013). However, there is shortage of studies that explicitly determine the statistical effect of tender splitting on variations in the level of procurement-related expenditure in public secondary schools.

The IDB notes that about 19 Latin American countries, including Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Uruguay, Paraguay, and Peru, have significantly reformed their public procurement systems since 2004 (IDB, 2014). A key feature of the reforms process in such countries has been the establishment of interventions aimed at eliminating procurement malpractices.

In relation to tender splitting, such interventions have been designed prevent accounting officers from fraudulently awarding sub-divided contracts to their cronies and/or family members (World Bank, 2013). Contract sub-division is particularly connected to bribery, inflation of prices, overpayments and loss of

public funds, with far-reaching implications on national and regional socio-economic development (IDB, 2014; World Bank, 2013).

The World Bank's independent evaluation report indicates that controlling the frequency of tender splitting in public procurement resulted to various positive results, including savings, increased business opportunities for SMEs, employment creation, greater confidence in the public sector, as well as more effective State action in public spending (World Bank, 2013). However, this does not mean that the malpractice has been fully eliminated, as many public institutions remain at risk of experiencing tender splitting and its subsequent negative outcomes.

The level of risks depends on the effectiveness of public sector audit and anti-corruption systems, as well as political will, among other factors. In the public secondary school sub-sector, there is limited information regarding the effect of tender splitting on variation in the level of procurement-related expenditure, save for scattered mentions in the literature. For instance, the World Bank's independent evaluation report indicates that interventions brought by procurement reforms enabled Brazilian public secondary schools to prevent the loss of about US \$120 million in 2012. In Nicaragua, Paote, Harnett, Ahmed, Vega, and Velasquez (2012) found that anti-corruption efforts by the Government had significantly reduced prevalence of various procurement malpractices in the education sector. However, no piece of work directly links tender splitting with improvements in the efficiency of procurement-related expenditure, particularly in public schools.

The Indonesian procurement reforms, which were initiated in 1998 and formalised in 2003 through the Presidential Decree No. 80/2003, focused on establishing strong systems for ensuring adherence to procurement regulations, as a critical intervention for reducing leakage of public funds (AsDB, 2012; Buehler, 2012). Irregular splitting of contracts to fit within a particular expenditure threshold was identified in the procurement regulations as one of the ways through which public funds were siphoned out from various public institutions. Hence, procurement reforms were intended to control the practice and restrict its application to emergencies only, where approval of a single contract would take longer than necessary.

The study commissioned by AsDB in 2011 suggests that regulation of contract splitting contributed to the reduction of procurement-related expenditure and rationalisation of such based on institutional needs (AsDB, 2012). This implies that splitting contracts is not entirely objectionable; rather, it is a strategy that becomes handy in situations where no single bidder meets financial capacity requirements to undertake mega contracts, or in situations where the procuring authority wants a project completed in the shortest period possible (OECD, 2016a). The decision to split a contract or not is informed by various factors, including economies of scale, diversity, efficiency, bidder capacity, timeframe, and government policy, among others (OECD, 2016a).

In view of the above, the European Union's Directive on Public Procurement (2004/18/EC), through its Article 46(1) and (2), encourages procuring

entities to split contracts into lots, with the goal of enhancing the participation of small and medium enterprises in public procurement (Houlden & Jackson, 2014). Under such circumstances, decisions on tender or contract splitting are done collectively and transparently, contrary to situations where such decisions are made obscurely by an individual to fulfil personal interests.

In South Africa, Pillay and Erasmus (2015) identifies contract splitting into smaller bits as one of the ways through which corruption manifests itself in the South African public sector, leading to the of loss of up to US\$ 30 billion annually (Ambe, 2016). Thai (2008) estimates that up to 1.9% of sectoral budget is lost through procurement malpractices, including tender splitting, bid-rigging, and emergency purchases, among others. Notably though, available literature creates a general picture regarding the aggregate contribution of several procurement malpractices on variation in the level of procurement-related expenditure within the education sector. Information that is specific to the frequency of tender splitting and its effect on the variation in the level of procurement-related expenditure in public secondary schools remains insufficient.

In Kenya, tender splitting is recognised as a practice that has both positive and negative effects on expenditure management, as well as on the economy (Public Procurement Oversight Authority [PPOA], 2009). Whereas the practice provides opportunity for Small and Medium Enterprises (SMEs) to access public tenders, it remains vulnerable to abuse by accounting officers. Like in other countries, tender splitting is one of the practices through which Kenyan public secondary schools

lose their funds, alongside emergency procurement, tailoring tender documents to suite particular bidders, among other malpractices (PPOA, 2009c).

Nonetheless, statistical information showing how the frequency of tender splitting influences variation in the level of procurement-related expenditure in public secondary schools is hard to come by. A number of studies conducted in Kenya have focused on various subjects on procurement reforms; for instance, Kavula et al. (2014) assessed the determinants of implementation of public procurement regulations in Kenya's secondary schools; while Miriti and Moses (2014) delved into the financial management: training needs of public secondary school principals in Machakos County, Kenya, among others. A common feature of such studies is that none has explicitly tackled the subject of tender splitting in relation to expenditure management.

2.3 Theoretical Framework

The Financial Decentralisation Theory is attributed to the works of 17th and 18th Century philosophers including Jacques Rousseau and John Stuart Mills, among others. It was later tested and developed further in the mid-19th Century by Economist Richard Musgrave and has been widely applied in developed and developing countries to understand financial management efficiency within decentralised governance systems (Rondinelli, 1981). The theory hypothesises that financial decentralisation is a critical process and component of reforms in public governance. Financial decentralisation entails the transfer of authority, responsibility, and accountability for the management of public financial resources

from national governance units to sub-national administrative structures, such as counties and sub-counties, in the case of Kenya.

In addition, the Theory hypothesises that decentralisation of expenditure management to lower level structures is a logical process that is integral to in the bottom-up approach to development planning. Decentralisation of expenditure management responsibilities is particularly aimed at improving efficiency, effectiveness, equity, and democratic practices in decision-making, which are naturally constrained in centralised systems. Besides, the decentralisation of expenditure management is vital for stimulating equity in the distribution of national budgetary resources. By so doing, decentralisation of expenditure management is recognised for spurring regional economic growth by injecting public funds where it's needed most (Rondinelli, 1981).

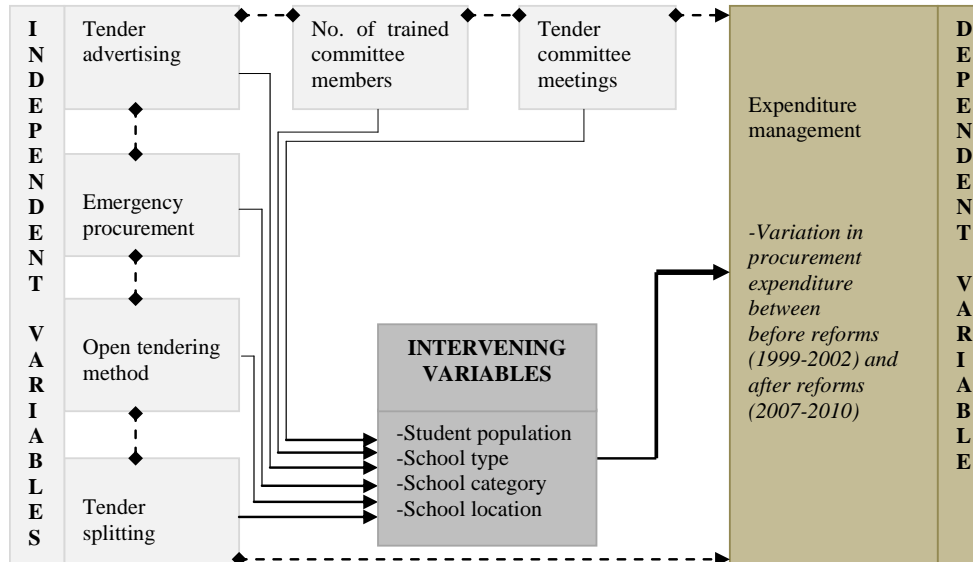
In education sector, financial decentralisation confers authority, responsibility, and accountability to headteachers and boards of management to allocate budgets, develop procurement plans, invite bidders, evaluate bids, award tenders, and account for transactions. The theory indicates that efficiency and effectiveness are synergised where communities contribute to education financing, as well as monitoring the utilisation of school financial resources and holding duty-bearers to account (Winkler, 1989).

This study anchors on postulates of the Financial Decentralisation Theory to assess the effect of procurement reforms on the management of procurement-

related expenditure. In Kenya, the management of procurement-related expenditure was decentralised to educational institutions back in the 1970s with the hope of enhancing efficiency effectiveness, equity, democracy; thereby, preventing the loss of public resources through procurement malpractices. However, the decentralisation programme failed to realise its goals primarily due to lack of a comprehensive legal framework; thereby, leading to massive waste of public resources. In response to the challenge, a legal framework was developed in 2001 to reform the public procurement system with the aim of restoring the key elements of efficiency, effectiveness, equity, and democracy in the management of public procurement-related expenditure at the national, regional, and sub-regional levels of governance. In view of this, the theory provides a framework within which the findings of this study have been contextualised.

2.4 Conceptual Framework

This study examined the effect of six aspects of procurement reforms, namely, tender committee meetings, number tender committee members trained by the DPP on management of procurement activities in public schools, tender advertising, emergency procurement, open tendering method, as well as tender splitting, on the management of procurement-related expenditure. The latter was operationalised in terms of variation in the level of procurement-related expenditure between two periods, viz. before (1999-2002) and after (2007-2010) reforms. The hypothesised relationship between the independent variables and the dependent variable is illustrated in Figure 2.1.



Source: Investigator (2017)

Figure 2.1: Conceptual framework showing hypothesised relationship between procurement reforms and procurement-related expenditure.

It was further hypothesised that the causal relationship between the six elements of procurement reforms and variation in the level of procurement-related expenditure between the two reference periods was likely to be influenced by various proximate attributes of the public secondary schools, including population of learners, type of school, category of school, as well as and location of school, as indicated in Figure 2.1. The set of intervening variables was included in the analysis to validate the causal relationship between the selected elements of procurement reforms and variation in the level of procurement-related expenditure.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes how data were obtained, processed, analysed, and interpreted. The methodology elements described in the chapter includes the research design, sampling procedures, the research process, validity, reliability, as well as data processing and analysis techniques.

3.2 Research Design

The descriptive survey design, with the mixed methods approach, guided various activities of the research process, from data collection to data processing, analysis, as well as interpretation. As noted by Sale, Lohfeld and Brazil (2002), the mixed methods approach combines quantitative and qualitative research methods to obtain quantitative and qualitative data that investigators can complement to address objectives of a study more effectively (Hussey & Hussey, 1997). The quantitative approach, consisting of structured and semi-structured questions, elicited quantitative and quantifiable information from Deputy Principals, who were legally obligated to chair school tender committees. The information was used to generate descriptive statistics and to deduce statistical inferences between two or more variables.

The design was appropriate for enabling the investigator to source appropriate data at the correct measurement scale. Such data enabled the

investigator to determine causal relationships between the six elements of procurement reforms and variation in the level of procurement-related expenditure during the reference period. Contrastingly, the qualitative approach entailed sourcing in-depth data, using open-ended questions, from members of Boards of Management (BoM) and Parents' Association (PA). As noted by Rindfleisch, Malter, Ganesan, and Moorman (2008), a descriptive survey design is cheaper when compared to other survey designs. This feature makes the design highly attractive to academic investigators, who in most cases have limited options for research funding.

Descriptive survey designs enable investigators to source cross-sectional data at one point in time. This quality makes the design less vulnerable to the effect of confounding factors such as social, political, and cultural changes because data is collected at one point in time. Descriptive survey designs are also acclaimed for their ability to capture a wider range of information compared to other designs. Descriptive survey designs are further known for examining externally oriented constructs, as well as for employing a diverse array of measurement scales (Rindfleisch et al., 2008; Bryman & Cramer, 1997).

Contrasting, descriptive survey designs are chided for their vulnerability to a high rate of non-response because participants are involved in the study voluntarily, as well as for being at risk of obtaining biased information because some participants may decide to conceal information about their lifestyles or behaviours, and instead, provide distorted facts. In response to such shortcomings,

the investigator took various actions, including explaining the study fully to potential participants during the consenting process to make them see the importance of their participation; as well as assuring potential participants about confidentiality of the information sourced to enable them build confidence and share honest personal views.

3.3 Target Population

The target population of this study consisted of public secondary schools in Nairobi City County. Procurement activities in public secondary schools are governed by the Public Procurement and Disposal Act (PPDA) of 2005, which has since been upgraded to PPDA 2015; and complemented by the Procurement Manual for Schools and Colleges. Public secondary schools also share common characteristics such as involvement of deputy principals as chairpersons of school tender committees; as well as appointment and functions of BoM, which is regulated by the Basic Education Act of 2012. At the time when this study was conducted, Nairobi City County had 76 public secondary schools, of which 7 were categorised as national, 49 were in the category of county schools, while 20 were categorised as sub-county schools. Table 3.1 provides details of the distribution, based on the category and type of school.

Table 3.1: The distribution of public secondary schools by category and type

Category of School	Type			Total
	Boys'	Girls'	Mixed	
A: National	4	3	0	7
B: County	14	15	20	49
C: Sub-County	1	2	17	20
Total	19	20	37	76

Source: Ministry of Education (2015)

More specifically, the study targeted schools that were at least 10 years old, which were 43 (56.6%). Such schools were targeted because they were likely to provide complete data on expenditure and learner population for the period under study, namely, 1999 to 2010. Within schools, the study targeted deputy principals, because of their statutory roles as chairpersons of tender committees, as well as members of BoMs and PAs, because of their oversight functions.

3.4 Sampling Design and Procedures

The schools and individual participants were sampled using a combination of stratified random sampling procedure and purposive sampling participants. As indicated in Table 3.1, the 76 public secondary schools was designated the population (N_i) of the study. Having a finite population permitted the investigator to apply one of Fisher's formulae for determining samples. The formula that was applied in this study stated that: -

$$n_i = \left\{ \frac{\delta(1 - \delta)}{\left[\left(\frac{\alpha}{Z} \right)^2 + \delta(1 - \delta)/N_i \right]} \right\} * \mu_i$$

Where: n_i = sample size, N_i = population: 76 schools, δ = estimated population variation: 0.5, α = desired precision: 0.05, Z = confidence level: 1.96 for 95% on the normal distribution curve and μ_i = design effect: 0.6 (Gliner, Morgan & Leech, 2009).

$$n_i = \left\{ \frac{0.5(1 - 0.5)}{\left[\left(\frac{0.05}{1.96} \right)^2 + 0.5(1 - 0.5)/76 \right]} \right\} * 0.6 = 38.9$$

The computation yielded a sample size of $38.9 \approx 39$ schools, which was stratified into three strata, viz. national, county, and sub-county. Each stratum was further stratified based on gender. The process yielded three sub-categories, including, boys' only, girls' only and mixed schools. To ensure proportionate representation of each stratum, the formula below was been applied.

$$n_i = n_{ij} * f$$

Where, n_i – stratum sample size, n_{ij} – stratum population, f – sampling factor, obtained from the ratio of n_i/N_i ; N_i – county population and n_i – desired sample size (Marco, 2005). For instance, Table 3.1 shows that the stratum of County schools (n_{ij}) had 49 schools and the population (N_i) was 76, while the formula 1 yielded a sample size (n_i) of 39.

$$n_i = 49 * \frac{39}{76} = 25$$

The computation yielded 25 schools as the stratum sample size for county schools. Based on this, the sample size was proportionately divided as indicated in Table 3.2.

Table 3.2: Distribution of the sample size by school category and type

Category of School	Type			Sample
	Boys'	Girls'	Mixed	
A: National	2	2	0	4
B: County	7	8	10	25
C: Sub-County	1	0	9	10
Total	10	10	19	39

Source: Ministry of Education (2015)

One important advantage of stratified random sampling is that it ensures the inclusion of elements whose population may be small. Furthermore, purposive sampling was applied to select deputy principals as well as members of BoMs and PAs, one of each. The participants were selected based on their membership to school tender committees, as well as involvement in the management of school resources, or oversight of expenditure management in the schools. Purposive sampling is a non-probability procedure, which allows an investigator to use cases that have the required information with respect to subject of the study. Such cases are often handpicked because they are either informative or possess characteristics of interest (Mugenda & Mugenda, 2003).

3.5 Data Sources

Data were obtained from primary and secondary sources. Whereas primary data were obtained from deputy principals, as well as members of BoMs and PAs, secondary data were sourced by reviewing procurement-related expenditure records, learner enrolment records. Secondary data were also obtained by reviewing auditors' annual reports for public secondary schools, and other related literature.

3.6 Data Collection Instruments

Two sets of data collection instruments, including a self-reporting questionnaire for deputy principals and a key informant interview guide for

members of BoMs and PAs were applied to source primary data. The instruments elicited information on five key thematic areas, including institutional structure, regulatory measures, staff capacity, transparency, and level of indebtedness. Details are provided in the following sub-sections.

3.6.1 Self-reporting questionnaire

The self-reporting questionnaire, with closed-ended and open-ended questions, was used to source information from deputy principals. The introductory part of the questionnaire sourced information on various characteristics of the schools, such as the type and category of school, as well as the location and sub-county where a school is situated. The introductory section also captured data on learner population and expenditure on the procurement of goods, services, and works over a period of 12 years from 1999 to 2010, which was divided into three equal parts of four years each, that is, before reforms (1999-2002), during reforms (2003-2006) and after reforms (2007-2010).

This entailed reviewing school enrolment and expenditure records for the reference period. Whereas in some schools, the investigator was authorised to review and extract the requisite information, in others, principals instructed staff members to extract the information in the requested format. Whereas in some schools the information was complete, in others, there were gaps occasioned by poor filing systems and management of school records. Under such situations, the investigator interpolated or extrapolated data to fill up information gaps.

Furthermore, section 2 sourced information on institutional structure, section 3 focused on regulations governing procurement activities, section 4 was on staff capacity, section 5 dwelt on utilisation of standard tender documents, while section six captured information on measures to uphold transparency. Section 7 of the questionnaire, which demanded information on the level of indebtedness, also involved a review of school financial records. The self-reporting questionnaire provided the flexibility and convenience required by the targeted participants in terms of the time to provide responses and confidentiality regarding sensitive information.

3.6.2 Key informant interview guide

The key informant interview guide was used to elicit detailed qualitative data from BoM and PA members. The instrument sourced information on various aspects, including personal opinions on efficiency of the procurement system in their school, institutional structure, regulations governing the procurement process, tender committee capacity to manage procurement activities, measures to uphold transparency of procurement activities and challenges facing the reforms process in the schools.

The instrument is appropriate because it provided opportunity for participants to provide in-depth information based on their professional opinions and experiences. According to Touliatos and Compton (1988), in-depth interview guides are particularly suitable for evaluating perceptions and attitudes of individuals. The information sourced was used for in-depth analysis of the linkage

between various elements of procurement reforms and variations in the level of procurement-related expenditure in school contexts.

3.7 Pre-testing of Data Collection Instruments

Pre-testing was done in six public secondary schools in the central region of Kenya, including 1 national school, 2 county schools and 3 sub-county schools, which were sampled through a stratified random process. The stratification was based on gender and category. The instruments were pre-tested in August 2010. The central region of Kenya was chosen purposively because of its close proximity to the Nairobi City County and homogeneity in terms of socio-economic indicators. In each school, the self-reporting questionnaire was pre-tested on deputy principals, while two BoM and two PA members were engaged in key informant interviews. Necessary adjustments such as re-statement of unclear questions and instructions; omission of irrelevant questions and grammatical errors were effected.

3.7.1 Validity of the data collection instruments

Validity of the instruments is critical in research and the acceptable level is largely dependent on logic and experience of an investigator (UNESCO, 2004). Validity refers to the degree to which an instrument measures what it is supposed to measure. In this regard, qualitative data were interrogated in detail and discussed with supervisors before being accepted as valid findings. In addition, Content Validity Index (CVI) method was applied to assess validity of the instruments' contents as recommended by Polit and Beck (2006). In this regard, the Statistical Package for Social Sciences (SPSS) software was used to determine the content

validity indices for the two instruments applied in this study. The computation obtained a CVI of 0.81% for the self-reporting questionnaire and 0.85% for the key informant interview guide. As guided by Polit and Beck (2006), contents of an instrument are valid when the CVI value is 50% or more. However, the validity is either weak or non-existent when the computed CVI value is less than 50%. In this study, CVI generated for each instrument suggests that content validity was above the minimum threshold as prescribed by Polit and Beck (2006).

3.7.2 Reliability of the data collection instruments

Reliability is the consistency of a measuring instrument, that is, the extent to which a measuring instrument contains variable error. Reliability was improved by posing questions in the simplest way possible. Besides, the questions were accompanied with side notes for quick reference to enable participants understand requirements. In addition, reliability of the instruments was estimated using the split-half technique. In this regard, the SPSS software was applied to determine Spearman-Brown Prophecy Coefficient for interpretation. Details of the Coefficient are explained by the following publications, Bryman and Cramer (1997) as well as Nachmias and Nachmias (1996). In addition, Garson (2009) provides a scale upon which the Spearman-Brown Prophecy Coefficient is interpreted. In this regard, a Coefficient of 0.80 to 0.89 indicates adequate reliability, while 0.90 and above is a sign of good reliability. The computation obtained three indices of reliability test, viz. Cronbach's alpha, Spearman-Brown Coefficient, and Guttman Split-Half Coefficient, whose values are indicated in Table 3.3.

Table 3.3: Reliability Summary Statistics

Cronbach's Alpha	Part 1	Value	0.524
		N of Items	25
	Part 2	Value	0.663
		N of Items	25
Total N of Items		50	
Correlation Between Forms			0.741
Spearman-Brown Coefficient	Equal Length		0.828
	Unequal Length		0.828
Guttman Split-Half Coefficient			0.524

As indicated in Table 3.3, the reliability yielded a Spearman-Brown Coefficient of 0.828 (≈ 0.83), which suggests that pre-testing data and main data were consistent; thus, the instrument used to source the two sets of data was reliable. In addition, reliability analysis for the key informant interview guide obtained a Spearman-Brown Coefficient value of 0.866, which according to Garson (2009), is a sign of adequate reliability.

3.8 Data Collection Procedures

The investigator recruited two assistants to support data collection activities. The research assistants were trained to enhance their understanding of data collection instruments. The training was also intended to remind them of essential data sourcing skills, including how to approach participants, build rapport, initiate interviews, pose questions, make probes, and take notes. The investigator sought permission from relevant authorities, including the Board of Postgraduate Studies of the University of Nairobi and the National Commission for Science and Technology (NACOSTI). In this regard, a letter of transmittal was drafted by the

investigator and forwarded through the University of Nairobi to the Ministry of Education and Nairobi City County Education Office. A research permit and an authorisation letter were obtained from NACOSTI. The authorisation letter was endorsed by the County Commissioner and the Ministry of Education before onset of data collection.

Data collection began upon revision of data collection instruments based on the pre-test results. Sampling was done as elucidated under sub-section 3.4. An itinerary involving sampled schools was prepared to guide collection of quantitative and qualitative data. The investigator and research assistants visited schools for introduction with principals. The principals provided an important link to deputy principals and to members of BoMs and PAs. They directed deputy principals to provide necessary data in consultation with accounts or procurement departments. The investigator and his team informed participants about the nature, objectives, and goals of the study. Thereafter, participants were asked to give formal consent to participate in the study, before being issued with a self-reporting questionnaire. Participants were given one week to fill and return the questionnaires. The investigator and his team made follow-up through visits and telephone calls. The turnaround time varied from 2 days to 4 weeks. Data collection lasted for 30 days, in which the investigator visited 39 schools. At the end of 30 days, 35 questionnaires were filled successfully, thus, suggesting a response rate of 89.7%.

In addition, the principals provided contact details of BoM and PA members to be engaged in key informant interviews. The investigator informed the targeted

participants, consented them and booked appointments, which were used to develop a data collection itinerary. Upon request, some participants were given an overview of the topics that would be discussed at least a day earlier to ensure constructive deliberations. The interviews were conducted by the investigator assisted by two experienced research assistants. The investigator carefully selected his language to ensure that personal opinions were not echoed to participants; which would lead to biased responses. The investigator and research assistants recorded responses whilst ensuring that the original meaning intended by the respondent was maintained. Again, after 30 days of data collection, 16 out of 30 key informant interviews were successful.

3.9 Data Processing and Analysis Techniques

Both quantitative and qualitative approaches were applied to process, analyse, and interpret the data. Quantitative data processing involved coding data, entry, cleaning, transformation, analysis, and interpretation, in line with the steps recommended by Obure (2002). Quantitative analysis was performed at three levels, namely univariate, bivariate and multivariate. Univariate analysis obtained frequency distributions, percentages and descriptives, while bivariate analysis was performed using one-way Analysis of variance (ANOVA), Pearson's correlation coefficient, and Chi-square (χ^2) statistics.

Pearson's correlation coefficient, denoted by letter r , is used to measure the degree of correlation between interval-scaled variables. Its value lies between -1 and 1. When $r = -1$ or 1 , then the correlation between two variables is perfect. The

larger the absolute value of r the stronger the degree of correlation between the two variables (Morgan, Leech, Gloeckner, & Barrett, 2007). Chi-square (χ^2) statistic establishes the statistical association between two variables both of which must be measured at nominal or ordinal scales. The application of χ^2 test is preceded by cross-tabulations of relevant variables. Even though the technique enables investigators to tell whether two variables are related or not, it cannot determine causal effects between such variables (Gliner et al., 2009).

In multivariate analysis, the effect of each element of procurement reforms (independent variables) on expenditure management (dependent variable) in public secondary schools was determined using multiple linear regression model. In general, multiple regression model is based on the premise that Y is a function of a set of k independent variables (X_1, X_2, \dots, X_k) in a population (Morgan et al., 2007). To express the model in an equation form, X_{kj} is used to denote the value of the j^{th} observation of variable X_k . The model assumes that for each set of values for the k independent variables ($X_{1j}, X_{2j}, X_{3j}, \dots, X_{kj}$), there is a distribution of Y_j values such that the mean of the distribution is represented by the equation.

$$Y_j = \beta_0 + \beta_1 X_{1j} + \beta_2 X_{2j} + \dots + \beta_k X_{kj} + \varepsilon_j$$

Where: β_0 is the intercept; $\beta_1 \dots \beta_k$ are partial regression coefficients; ε_j is the error term; Y_j is the dependent variable; $X_i \dots X_k$ are independent variables (Bryman & Cramer, 1997). In this study, the dependent variable (Y_j) was operationalised in terms of variation in the level of procurement-related

expenditure, while the independent variables ($X_1 \dots X_k$) included frequency of tender committee meetings in a quarter year, which for the purpose of analysis, was coded as *Nme*. Other independent variables included frequency of tender splitting (*Tsp*), frequency of open tendering methods (*Ote*), frequency of tender advertising (*Tad*), number of tender committee members trained in procurement management (*Mtr*), as well as frequency of emergency procurement (*Epr*). The analysis generated various result indicators, but only three were relevant to addressing objectives of this study, including standardised regression coefficients (*Beta* weights), adjusted coefficient of determination (R^2) and the significance of F statistic.

The regression coefficients associated with each independent variable shows the effect of such variables on the dependent variable. Consequently, a negative (-) regression coefficient shows a negative effect on the dependent variable, which in this study was *variation in the level of procurement-related expenditure*, while a positive (+) coefficient shows a positive effect of the same on procurement-related expenditure. However, to compare the effect of independent variables on expenditure management, SPSS standardised regression coefficients to generate *Beta* weights. The latter show the extent to which the dependent variable is likely to change in response to a proportionate unit change in the independent variable. Morgan et al. (2007) provides a rule of thumb to aid the interpretation of results. In this regard, the bigger the unit change in the dependent variable, the stronger the effect of an independent variable. Based on the results in Model 2, which factored in the effect of intervening variables, the formula is can be stated as follows: -

$$Y_j = -33320.200 + 15841.415Epr + 10560.257Tes - 11237.357Tad - 2989.587Ote \\ -869.058Mtr - 304.344Nme + 18255.131$$

The robustness of a regression model is known as goodness-of-fit, which shows the extent to which a set of independent variables entered into a regression model explains variation in the dependent variable. In multiple linear regression analysis, the coefficient of determination, which is designated as R^2 , shows the models' goodness-of-fit. However, the adjusted R^2 , which factors in the number of independent variables incorporated in the model, is even a more accurate estimate of a regression model's explanatory power than R^2 . As noted by Morgan et al. (2007), the significance of variation in Y is indicated by the F statistic. All the quantitative analyses were performed using the Statistical Package for Social Sciences (SPSS) and Microsoft Excel packages.

The aim of the study was to determine the effect of procurement reforms on expenditure management. Before the reforms were introduced, public secondary schools lost millions of financial resources in shoddy procurement activities because the system was not guarded against malpractices. The objective of procurement reforms was to initiate measure that would weed out malpractices, enhance financial discipline, regulate expenditure, and reduce wastage of public resources. The study captured data on procurement-related expenditure and learner population for the period 1999 to 2010. The reference period was divided into three

equal parts of four years each, that is, before reforms (1999-2002), during reforms (2003-2006) and after reforms (2007-2010).

In view of this, the study examined variation in the level of procurement-related expenditure between the period before and after reforms. In so doing, the investigator assumed that: one, the level of procurement-related expenditure was determined by the number of learners; two, that schools procure items to address the needs of learners; and three, as learner population increases, so should the level of procurement-related expenditure in equal measure. Other factors such as inflation and weather dynamics play secondary roles in influencing the level of procurement-related expenditure.

Based on the foregoing assumption, the investigator determined mean per capita expenditure in procurement of goods, services, and works, as a ratio of total procurement-related expenditure and learner population. The values obtained for each year were summed and divided by the number of years. This may be explained by the arithmetic formula indicated below:

$$E_v = \left[\left(\frac{e_{1a} + e_{2a} + e_{3a} + e_{4a}}{p_{1a} + p_{2a} + p_{3a} + p_{4a}} \right) / n_a \right] - \left[\left(\frac{e_{1b} + e_{2b} + e_{3b} + e_{4b}}{p_{1b} + p_{2b} + p_{3b} + p_{4b}} \right) / n_b \right]$$

Where E_v is the variation in the level of procurement-related expenditure; $e_{1a}...e_{4a}$ represents procurement-related expenditure for years one to four after reforms; $e_{1b}...e_{4b}$ indicates procurement-related expenditure for years one to four

before reforms; $p_{1a}...p_{4a}$ represents learner population for years one to four after reforms; $p_{1b}...p_{4b}$ shows learner population for years one to four before reforms. In addition, n_a is the number of years under focus after reforms and n_b is the number of years under focus before reforms. Using the arithmetic formula, the investigator obtained variation in the level of procurement-related expenditure, which was designated the dependent variable and used to in descriptive and inferential analyses, at interval and nominal scales.

In addition, qualitative data sourced through key informant interviews were processed and analysed following three steps as prescribed by Best and Khan (2004). In the first step, the data were organised and summarised in line with objectives of the study. The second step involved description of the summary sheets to produce a preliminary report. The third step involved systematic analysis and interpretation of the preliminary report, which was integrated with quantitative data in the final report (Best & Khan, 2004).

3.10 Ethical Considerations and Research Authorisation

The investigator facilitated the consenting process by explaining the study and its purpose to all potential participants. In this regard, potential participants were notified that participation was purely on voluntary terms. Again, they were informed that their withdrawal of consent would not affect their subsequent relationship with any authority in the education sector. Those who declined to participate in the research were substituted for appropriately. In addition, the investigator assured participants regarding confidentiality of their information, with

clear indications of the person that would access such during data processing and analysis, report writing as well as preparation of publication materials. A research permit was obtained from NACOSTI, while authorisation letters were obtained from the University of Nairobi and the Ministry of Education.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents findings of the study, which have been organised and discussed under four key thematic sections, including analysis of questionnaire return rate; expenditure management concept; background profile of schools and expenditure management; bivariate analysis of procurement reforms and expenditure management; as well as multivariate analysis of procurement reforms and expenditure management. Both the bivariate and multivariate results have been presented under six sub-themes, focusing on objectives of the study.

4.2 Analysis of Questionnaire Return Rate

Questionnaire return rate is the number of successfully completed and returned questionnaires as a proportion of the total number of participants who are issued with such tools. Questionnaire return rate is crucial indicator of accuracy and usefulness of survey findings. In this regard, a low questionnaire return rate widens the error margin; thereby, reducing the accuracy of research findings (National Research Council, 2013). This study targeted 39 public secondary schools in the Nairobi City County; however, at the end of data collection period, 35 questionnaires were successfully filled, which translates to a return rate of 89.7%. Questionnaire return rates above 80% are acceptable in social science surveys (Werner, Praxedes & Kim, 2007).

In addition, the investigator successfully conducted 16 key informant interviews, out of the 30 that were targeted, which translates to 53.3% success rate. Questionnaire return rate is affected by various factors, depending on the geographical, socio-economic, cultural, and bureaucratic contexts within which a study is conducted. In this study, questionnaire return rate was affected by factors such as official travel, official leave of absence, and fear of sharing sensitive information regarding school financial performance.

4.3 Expenditure Management

Expenditure management in the public sector is an essential element in the sustainable delivery of high quality services. As premised by the World Bank (2009), effective management of expenditure in the public sector is fundamental for improving financial discipline, optimising allocation of resources as dictated by budgetary policy priorities, as well as ensuring good operational management. Public institutions improve financial discipline by controlling financial the level of procurement-related expenditure in order to minimise loss of public resources through wastage and/or intentional malpractices.

In this study, expenditure management was examined within the context of the first strategic objective, that is, improvement of financial discipline. In this regard, the investigator measured the concept in terms of variation in the amount of resources spent to procure goods, services, and works, during the periods ‘before reforms (1999-2002)’, ‘during reforms (2003-2006)’ and ‘after reforms (2007-2010)’. The variation was computed using the arithmetic formula expounded in

chapter three (sub-section 3.9.4). The basic idea was to determine if the procurement reforms that were introduced in public secondary schools of Nairobi City County had caused a reduction, an increment, or no change in the level of procurement-related expenditure. In this regard, a reduction in the level of procurement-related expenditure was considered a sign that the reforms were effective in improving financial discipline; while an increase or no change signified ineffectiveness.

The results show that annual procurement-related expenditure (per capita), for all the schools that participated in the study, reduced from KES 47,768 before reforms to KES 34,625 during reforms and further to KES 30,977 after reforms. More specifically, the results presented in Table 4.1 reveal two outstanding scenarios of variations in annual procurement-related expenditure. In the first scenario, expenditure reduced consistently from the period before reforms, to the period during reforms and further down to the period after reforms. The scenario is evident in schools coded as 01, 02, 03, and 06, among others. The coding was applied to ensure confidentiality of the information and to protect identity of the schools. The second scenario is where expenditure reduced from the period before reforms, to the period during reforms; but which later increased in the period after reforms. The scenario is depicted by cases 04, 05, 12 and 28, among others.

Table 4.1: Mean annual per capita expenditure on procurement for each school

School Serial Code	Before reforms	During reforms	After reforms
01	60,234	47,538	43,577
02	23,626	17,121	14,861
03	23,374	21,848	10,825
04	28,706	18,253	20,862
05	62,719	27,645	39,426
06	22,506	17,516	8,759
07	62,862	47,378	22,852
08	26,106	22,511	8,262
09	15,490	10,101	10,382
10	117,769	87,489	73,307
11	89,076	60,596	49,608
12	27,121	13,220	17,031
13	38,335	29,935	22,600
14	37,914	26,265	22,696
15	52,191	37,974	23,335
16	41,373	36,541	35,938
17	111,808	81,341	63,523
18	5,175	4,042	3,863
19	25,493	25,163	19,587
20	56,353	48,441	36,436
21	69,876	44,678	35,272
22	27,106	20,344	24,451
23	72,700	57,474	59,199
24	28,611	19,233	17,862
25	60,284	45,030	35,214
26	102,416	84,249	70,753
27	14,069	9,688	12,263
28	116,117	74,068	87,919
29	33,972	22,133	31,873
30	52,083	34,084	41,698
31	30,800	23,527	22,230
32	34,964	25,542	25,564
33	42,376	27,659	35,966
34	30,341	21,682	17,570
35	27,924	21,576	18,626

Source: Survey data (2017)

In addition, One-Way Analysis of Variance (ANOVA) technique was applied to determine whether variations in annual procurement-related expenditure between the three reference periods were statistically significant. The results, which are summarised in Table 4.2, show that before reforms, the schools recorded an annual procurement-related expenditure of KES 47,768, which declined to KES 34,625 during reforms and dropped further to KES 30,977 after reforms. The analysis obtained a computed $F_{(2, 102)}$ statistic of 4.621 and a ρ -value of 0.012, which suggests up to 95% chance that variations in the annual procurement-related expenditure were statistically significant. This implies that procurement reforms may have significantly influenced the management of expenditure and financial discipline in public secondary schools.

Table 4.2: Variation in annual procurement-related expenditure - before, during and after reforms

DESCRIPTIVES								
Period	N	Mean	SD	SE	95% CI for Mean		Min	Max
					LB	UB		
Before reforms	35	47767.71	29854.40	5046.32	37512.37	58023.06	5175	117769
During reforms	35	34625.29	21794.21	3683.89	27138.71	42111.86	4042	87489
After reforms	35	30976.86	20152.47	3406.39	24054.24	37899.47	3863	87919
Total	105	37789.95	25138.28	2453.25	32925.08	42654.83	3863	117769

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between groups	5459619006.190	2	2729809503.095	4.621	0.012**
Within groups	60261437060.571	102	590798402.555		
Total	65721056066.762	104			

, **, * show significance at $\rho < 0.1$, $\rho < 0.05$ and $\rho < 0.01$ error margins, respectively*

The results in Table 4.2 show that annual procurement-related expenditure reduced by about 35% from KES 47,768 before reforms to KES 30,977 after reforms. Based on this, the analysis obtained a computed $F_{(1, 68)}$ statistic of 7.606

and a p -value of 0.007, which suggests up to 99% chance that variation in expenditure between the two periods is statistically significant. Furthermore, the difference between annual procurement-related expenditure before and after reforms were computed for each school and results clustered into three categories of ‘small variation (<KES10,000)’, ‘average variation (KES 10,000 to 19,999)’, and ‘big variation (KES 20,000+)’. Whereas ‘small variation’ signifies a weak level of financial discipline, ‘big variation’ suggests a strong level of financial discipline. Based on this, the results show that of the 35 schools that took part in the study, 24 (68.6%) recorded small variation in the annual procurement-related expenditure, 7 (20.0%) achieved average variation, while 4 (11.4%) experienced big variation.

4.4 Background Profile and Expenditure Management: Bivariate Analysis

This section explores background attributes of the schools involved in the study, and their tender committees. It further examines the relationship between such attributes and variation in the level of procurement-related expenditure using bivariate analysis techniques. The purpose of the analysis was to identify attributes that were likely to confound the relationship between procurement reforms and expenditure management. Details are in the following sub-sections.

4.4.1 Attributes of schools

The study covered various attributes of the schools, including type, category, location, and distribution by sub-counties. Regarding the type, the results in Table 4.3 show that 21 (60.0%) schools were purely boarding, 9 (25.7%) were day schools, while 3 (14.3%) provided both boarding and day services. In relation

to variation in the annual procurement-related expenditure, the results show that among the schools that recorded small variation, 14 (58.3%) were boarding, 7 (29.2%) were day, while 3 (12.5%) provided both day and boarding services. Among those that achieved big variation, 3 (75.0%) were boarding schools, while 1 (25.0%) was a day school. However, the analysis revealed no significant association between type of school and variation in the annual procurement-related expenditure ($\chi^2 = 2.263$, $df = 4$ & p -value = 0.687).

Table 4.3: Background attributes of the schools

Attribute	Small variation		Average variation		Big variation		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
<i>Type</i>								
Boarding	14	58.3	4	57.1	3	75.0	21	60.0
Day	7	29.2	1	14.3	1	25.0	9	25.7
Day & boarding	3	12.5	2	28.6	0	0.0	5	14.3
Total	24	100.0	7	100.0	4	100.0	35	100.0
<i>Category</i>								
National	1	4.2	2	28.5	0	0.0	3	8.6
County	18	75.0	2	28.6	3	75.0	23	65.7
Sub-County	5	20.8	3	42.9	1	25.0	9	25.7
Total	24	100.0	7	100.0	4	100.0	35	100.0
<i>Income zone</i>								
High-income zone	7	29.2	2	28.6	1	25.0	10	28.6
Low-income zone	17	70.8	5	71.4	3	75.0	25	71.4
Total	24	100.0	7	100.0	4	100.0	35	100.0
<i>Sub-County</i>								
Dagoretti	4	16.7	1	14.3	2	50.0	7	20.0
Embakasi	1	4.2	1	14.3	0	0.0	2	5.7
Kamukunji	3	12.5	2	28.5	1	25.0	6	17.1
Kasarani	3	12.5	0	0.0	0	0.0	3	8.7
Langata	1	4.2	0	0.0	0	0.0	1	2.9
Makadara	5	20.8	1	14.3	0	0.0	6	17.1
Starehe	3	12.4	1	14.3	0	0.0	4	11.4
Westlands	4	16.7	1	14.3	1	25.0	6	17.1
Total	24	100.0	7	100.0	4	100.0	35	100.0

Source: Survey data (2017)

In terms of category, results show that 3 (8.6%) institutions were national schools, 23 (65.7%) were county schools, while 9 (25.7%) were sub-county schools. However, there was no significant association between variation in the annual procurement-related expenditure and category of schools ($\chi^2 = 7.013$, $df = 4$ & p -value = 0.135). Furthermore, of the 35 schools, 10 (28.6%) were situated in high-income zones, while 25 (71.4%) were located in low-income zones. Again, the analysis revealed lack of a significant association between variation in the annual procurement-related expenditure and location of schools ($\chi^2 = 0.029$, $df = 2$ & p -value = 0.986); suggesting that schools in high and low-income zones had similar experiences regarding changes in annual procurement-related expenditure.

More still, the schools were sampled from all the eight sub-counties that form Nairobi City County, including Dagoretti, 7 (20.0%), Embakasi 2 (5.7%), Kamukunji 6 (17.1%), and Kasarani 3 (8.7%), among others indicated in Table 4.2. The number of schools sampled in each sub-county was determined by the inclusion criterion, which focused on schools that had existed for at least 10 years prior to the study. However, the analysis revealed that there was no significant association between variation in the annual procurement-related expenditure and distribution of schools ($\chi^2 = 7.711$, $df = 14$ & p -value = 0.904); which suggests that all the sub-counties were homogenous in terms of changes in annual procurement-related expenditure.

4.4.2 Attributes of school tender committees

Section 10 (1) of the *Public Procurement and Disposal Regulations, 2006* (*Procurement Regulations, 2006*) requires all procuring entities to establish tender committees, in a manner that is set out in the Second Schedule. Tender committees are obligated to perform the functions listed under sub-section 2 (a) to (o), which include reviewing, verifying and ascertaining that all procurement and disposal activities are in line with provisions of the *Procurement Regulations, Public Procurement and Disposal Act, 2015* (*Procurement Act, 2015*), and tender documents (Government of Kenya, 2015; 2006). Within educational institutions, the *Procurement Act, 2015* and *Procurement Regulations, 2006* are domiciled by the *Public Procurement Manual for Schools and Colleges 2010* (*Procurement Manual, 2010*). This sub-section presents results that relate various attributes of school tender committees, and expenditure management.

4.4.2.1 Membership structure

All the 35 (100.0%) schools involved in the study had established tender committees to handle procurement and disposal activities as required by law. School tender committees had memberships ranging between 6 and 12. More specifically, 27 (77.1%) schools had between 8 and 10 members, 5 (14.3%) had less than 8 members, while 3 (8.6%) reported membership in excess of 10 people. The results in Table 4.4 show that mean membership of school tender committees was 8.96 for schools that recorded small variation in expenditure, 8.57 for those that experienced average variation and 8.50 for those with big variation.

The analysis obtained a computed $F_{(2, 32)}$ statistic of 0.326 and a p -value of 0.724, which is not statistically significant; thus, suggesting that there was no significant difference in membership of tender committees for the three categories of schools. Notably though, in 12 (34.3%) schools, tender committees had less than 9 members, which is contrary to part 7 of the Second Schedule of the *Procurement Regulations, 2006* (Government of Kenya, 2006).

Table 4.4: Membership of school tender committees

DESCRIPTIVES								
Period	N	Mean	SD	SE	95% CI for		Min	Max
					Mean			
					LB	UB		
Small variation	24	8.96	1.197	0.244	8.45	9.46	6	12
Average variation	7	8.57	1.512	0.571	7.17	9.97	6	10
Big variation	4	8.50	2.380	1.190	4.71	12.29	6	11
Total	35	8.83	1.382	0.234	8.35	9.30	6	12

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.299	2	0.649	0.326	0.724
Within Groups	63.673	32	1.990		
Total	64.971	34			

CORRELATIONS			
		Variation in procurement expenditure	Number of tender committee members
Variation in procurement expenditure	Pearson Correlation	1	0.084
	Sig. (2-tailed)		0.633
	N	35	35
Number of tender committee members	Pearson Correlation	0.084	1
	Sig. (2-tailed)	0.633	
	N	35	35

The analysis further obtained a Pearson Correlation Coefficient of 0.084 and a p -value of 0.633, which is not statistically significant. The results suggest

lack of a significant correlation between the membership of school tender committees and variation in the annual procurement-related expenditure. This implies that even though more than a third (34.3%) of schools had not complied with the recommended minimum membership for their tender committees, this did not cause a significant influence on the annual procurement-related expenditure.

Nonetheless, the membership composition of school tender committees was faulted for being skewed in favour of the teaching staff; thereby, making procurement activities vulnerable to manipulation. Even though non-teaching staff also constituted school tender committees, they lacked sufficient power to regulate decisions that were not in line with school interests, particularly because of smallness of their number. Moreover, key informants indicated that the involvement of teaching staff in procurement activities distracts them from undertaking their core business of tending to the academic needs of their learners. Consequently, some participants felt that an ideal school tender committee should have a fair representation of all stakeholders, including Board of Managements (BoMs), the then Parents-Teachers Associations, now Parents' Associations (PAs), teachers, relevant support staff, and the Ministry of Education (MoE).

4.4.2.2 Appointment of tender committee members

Part 7 of the Second Schedule of the *Procurement Regulations, 2006* further provides that chairpersons, deputy chairpersons, and members of school tender committees are appointed in writing by principals or head teachers (Government of Kenya, 2006). In line with this provision, the study revealed that principals were

the appointing authority for all school tender committee members, who were drawn from various departments within school, as well as from other institutions outside school. As indicated in Table 4.5, up to 29 (82.9%) participants stated that school tender committee members were drawn from the academic departments, 10 (28.6%) cited accounts department, 8 (22.9%) mentioned administration, while 7 (20.0%) indicated stores.

Table 4.5: Source departments and institutions

Departments	Frequency	Percent of total frequency	Percent of sample size (n)
Academic departments	29	41.4	82.9
Administration	8	11.4	22.9
Boarding	5	7.1	14.3
Ministry of Education	4	5.7	11.4
Board of management	2	2.9	5.7
Stores	7	10.0	20.0
Accounts	10	14.3	28.6
Procurement office	2	2.9	5.7
Kitchen	3	4.3	8.6
Total frequency	70	100.0	200.0
Sample size (n)	35		

NB: A multiple response variable; hence, total frequency exceeds sample size (n).

Key informant interviews revealed that school administration was represented in tender committees by deputy principals, who according to part 7 of the *Procurement Regulations, 2006* chair the committees. In some schools, county and sub-county education officers were co-opted in tender committees as ex-officio members; yet in others, a few BoM members sat in tender committees; which however, is contrary to provisions of the *Procurement Regulations, 2006*.

The appointment of school tender committee members was guided by various factors, such as indicated in Table 4.6. In this regard, 14 (40.0%) participants stated that potential appointees were required to attain the rank of departmental heads; 10 (28.6%) participants indicated that tender committee members were appointed according to guidelines provided by the MoE; while another 10 (28.6%) stated that appointment of tender committee members was guided by provisions of the *Procurement Regulations, 2006*. Also considered were education level, 3 (8.6%) and teaching experience, 2 (5.7%), while another 2 (5.7%) indicated that non-teaching members such as bursars were appointed based on their roles as financial managers.

Table 4.6: Factors guiding the appointment of tender committee members

Criteria	Frequency	Percent of total frequency	Percent of sample size (n)
Area of specialty	1	2.2	2.9
Procurement Regulations	10	22.2	28.6
Education level	3	6.7	8.6
Ministry of Education guidelines	10	22.2	28.6
Must be head of department	14	31.1	40.0
Must be a teaching staff	1	2.2	2.9
Must be person of integrity	1	2.2	2.9
Should be PA member	1	2.2	2.9
Virtue of being a financial manager	2	4.4	5.7
Teaching experience	2	4.4	5.7
Total frequency	45	100.0	128.6
Sample size (n)	35		

NB: A multiple response variable; hence, total frequency exceeds sample size (n).

The results show that appointment of school tender committee members was based on various factors; however, headship of academic departments, MoE guidelines and provisions of the *Procurement Regulations, 2006* were the main

factors guiding the process. Nonetheless, the criteria guiding the appointment of tender committee members were not uniform across schools, which suggest that some schools had not complied with procurement reforms regarding the appointment of tender committee members.

4.4.2.3 Tenure of office

Regarding tenure of office, 12 (34.2%) participants stated that tender committees in their schools had a tenure of one year, 1 (2.9%) person indicated a tenure of two years, while 5 (14.3%) mentioned three years or more. However, about one-half (17, 48.6%) indicated that tender committees in their schools had no definite tenure in office. In this regard, key informants noted that public procurement legislations were silent regarding the tenure of school tender committees, which may complicate their removal in the event of suspected or proven malpractices. Again, the results suggest that there was no uniformity regarding tenure of tender committees, which is likely to influence management of procurement-related expenditure.

The results in Table 4.7 show that the analysis obtained a significant negative correlation between office tenure and variation in the level of procurement-related expenditure. This suggests that as tenure of office increases, annual procurement-related expenditure reduces, which is indicative of improvement in financial discipline and expenditure management.

Table 4.7: Correlation between tenure of office and variation in procurement expenditure

CORRELATIONS			
		Variation in procurement expenditure	Tenure of school tender committee
Variation in procurement expenditure	Pearson Correlation	1	-0.406
	Sig. (2-tailed)		0.016**
	N	35	35
Tenure of school tender committee	Pearson Correlation	-0.406	1
	Sig. (2-tailed)	0.016**	
	N	35	35

, **, * show significance at $p < 0.1$, $p < 0.05$ and $p < 0.01$ error margins, respectively*

Key informants also revealed that school tender committees were heterogeneous in terms of office tenure, which ranged from one year to unlimited timeframes. Participants pointed out that prolonged tenure beyond five years heightened the risk of procurement malpractices. As office tenure increases, members become ‘too familiar’ with loopholes in procurement systems, which may lead to proliferation of malpractices, such as tender splitting, price inflation and other forms of manipulations. For this reason, participants brought to the fore the need for a reasonable tenure, as well as regular rotation of tender committee members to minimise the risk of such malpractices.

4.5 Procurement Reforms and Expenditure Management: Bivariate Analysis

This section presents results of bivariate analysis between various elements of procurement reforms and variation in the level of procurement-related expenditure. The various elements of procurement reforms included the frequency of tender committee meetings (per quarter), capacity of school tender committees,

frequency of tender advertising, frequency of emergency procurement, Frequency of open tendering and frequency of tender splitting. The purpose of bivariate analysis was to determine if there was any significant statistical association or correlation between each aspect of procurement reforms and expenditure management. The following sub-sections detail the findings.

4.5.1 Tender committee meetings and expenditure management

Meetings provide valuable opportunities for tender committees to review performance of procurement systems over specific periods and plan how to improve the same, going forward. Section 12 (2) of the *Procurement Regulations, 2006* requires tender committees to conduct their business during regular meetings with a quorum of five members including chairpersons; while section 12 (6) demands that proceedings be documented through minutes (Government of Kenya, 2006). The frequency of such meetings is an important indicator of efficiency in the procurement system, which is vital for enhancing financial discipline and expenditure management.

Based on this understanding, the results show that schools, which recorded small variation in the annual procurement-related expenditure, reported an average of 1.83 (≈ 2) meetings per quarter; those that achieved average variation indicated 3.43 (≈ 3) meetings; while those that experienced big variation stated 2.5 (≈ 3) meetings. Based on this, the analysis obtained a computed $F_{(2, 32)}$ statistic of 5.643 and a p -value of 0.008, which suggest up to 99% chance that the mean number of meetings held per quarter varied significantly across the three categories of schools.

Table 4.8: Variation in expenditure & number of school tender committee meetings

DESCRIPTIVES								
Period	N	Mean	SD	SE	95% CI for		Min	Max
					Mean			
					<i>LB</i>	<i>UB</i>		
Small variation	24	1.83	1.049	.214	1.39	2.28	1	5
Average variation	7	3.43	1.512	.571	2.03	4.83	2	6
Big variation	4	2.50	.577	.289	1.58	3.42	2	3
Total	35	2.23	1.262	.213	1.79	2.66	1	6

ANOVA						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	14.124	2	7.062	5.643	0.008***	
Within Groups	40.048	32	1.251			
Total	54.171	34				

CORRELATIONS			
		Variation in procurement expenditure	Average number of meetings per quarter
Variation in procurement expenditure	Pearson Correlation	1	-0.390
	Sig. (2-tailed)		0.020**
	N	35	35
Average number of meetings per quarter	Pearson Correlation	-0.390	1
	Sig. (2-tailed)	0.020**	
	N	35	35

, **, * show significance at $\rho < 0.1$, $\rho < 0.05$ and $\rho < 0.01$ error margins, respectively*

Furthermore, the analysis obtained a Pearson's Correlation Coefficient of -0.390 and ρ -value of 0.020, suggesting up to 95% confidence level that the average number of meetings held by tender committees per quarter negatively correlated with variation in the annual procurement-related expenditure. The results further suggest that as the number of meetings increase, annual procurement-related expenditure decreases, which is indicative of improvement in financial discipline and expenditure management. Even though key informants reaffirmed the

importance of tender committee meetings, most of them were cautious about linking the frequency of such meetings with improvement of financial discipline in schools.

Regarding quorum, the results show that schools that experienced small variation in the annual procurement-related expenditure reported a mean quorum of 5.67 (≈ 6) members; those that recorded average variation indicated 5.71 (≈ 6) people; while those having big variation stated 4.75 (≈ 5) people. However, the analysis revealed lack of significant variation in the mean quorum reported by participants in the three categories of schools ($F_{(2, 32)} = 0.882$ & $p\text{-value} = 0.424$).

Participants were requested to indicate how often tender committee meetings were postponed due to lack of quorum. The results in Figure 4.1 show that tender committee meetings had never been postponed due to quorum hitch, according to most participants (29, 82.9%); only 6 (17.1%) indicated that lack of quorum was an occasional challenge in their schools. Key informants associated lack of quorum with factors such as lack of training, short notices, commitment with academic activities; lack of team spirit, resulting from poor leadership, as well as infiltration of personal interests in tender committees.

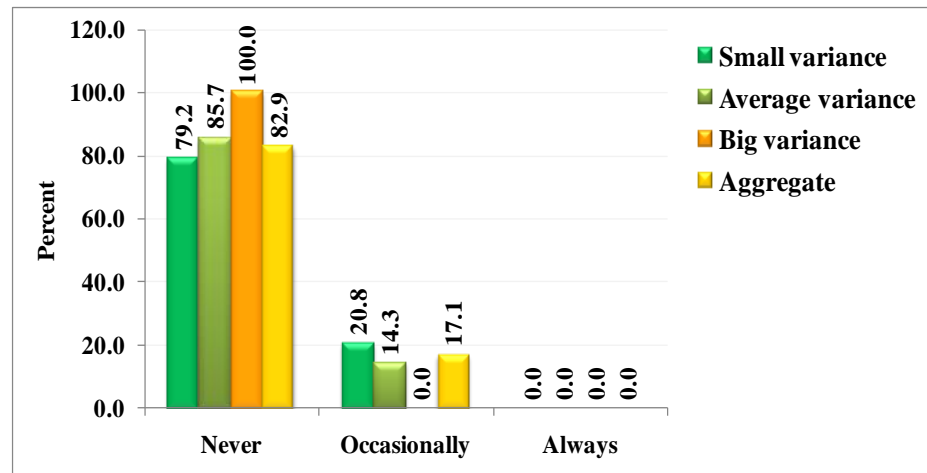


Figure 4.1: Quorum consistency.

In view of the above, the analysis obtained a computed χ^2 of 4.147, with 2 degrees of freedom and a ρ -value of 0.044, which is statistically significant. The results suggest up to 95% chance that quorum consistency significantly associated with variation in the level of procurement-related expenditure. Consequently, quorum consistency was likely to influence the level of financial discipline and the management of procurement-related expenditure in public secondary schools. Similarly, key informants pointed out that persistent lack of quorum created opportunity for a few members to perpetuate procurement irregularities, which increased procurement-related expenditure.

4.5.2 Capacity of tender committee members and expenditure management

The Second Schedule of the *Procurement Regulations, 2006* brought teachers and non-teaching staff, such as matrons, boarding masters and bursars, into school tender committees as members, albeit with no skills in procurement

activities and tendering procedures. As part of procurement reforms, members of tender committees require appropriate training to enable them understand their mandate as provided for under Section 10(2) of the *Procurement Regulations, 2006*; thus, improve financial discipline and expenditure management. This study captured a few aspects related to the capacity and training needs of school tender committee members, including number of committee members who had accessed appropriate training, perceived adequacy of skills in procurement management, as well as suggestions on additional skills that members require to fulfil their mandate. Details are presented under the following sub-sections.

4.5.2.1 Tender committee members with training in procurement management

As indicated in Table 4.9, schools that recorded small variation in the annual procurement-related expenditure stated a mean of 1.75 (≈ 2) members who had accessed training in procurement management; those that experienced average variation stated 2.86 (≈ 3) members who had accessed similar training, while those with big variation reported an average of 3 trained members. The analysis obtained a computed $F_{(2, 32)}$ statistic of 3.441 and a p -value of 0.044, which is significant.

The results suggest up to 95% chance that the three clusters of schools varied significantly in terms of the number of committee members with training in procurement management. This implies that training members of school tender committees is likely to influence financial discipline and expenditure management. Key informants confirmed that most members of school tender committees lacked necessary skills on procurement management. Even though some members had

accessed basic orientation on the same, participants cast aspersions regarding the quality of skills acquired from such orientations, particularly in relation to the functions outline under Section 10(2) of the *Procurement Regulations, 2006*.

Table 4.9: Number of trained committee members and variation in procurement expenditure

DESCRIPTIVES								
Period	N	Mean	SD	SE	95% CI for		Min	Max
					Mean	Mean		
					<i>LB</i>	<i>UB</i>		
Small variation	24	1.75	1.225	.250	1.23	2.27	0	5
Average variation	7	2.86	1.069	.404	1.87	3.85	2	5
Big variation	4	3.00	1.414	.707	.75	5.25	2	5
Total	35	2.11	1.301	.220	1.67	2.56	0	5

ANOVA						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	10.186	2	5.093	3.441	0.044**	
Within Groups	47.357	32	1.480			
Total	57.543	34				

CORRELATIONS			
		Variation in procurement expenditure	Number of committee members trained
Variation in procurement expenditure	Pearson Correlation	1	0.421
	Sig. (2-tailed)		0.012**
	N	35	35
Number of committee members trained	Pearson Correlation	0.421	1
	Sig. (2-tailed)	0.012**	
	N	35	35

, **, * show significance at $p < 0.1$, $p < 0.05$ and $p < 0.01$ error margins, respectively*

The analysis also obtained a Pearson's Correlation Coefficient of 0.421 with a p -value of 0.012, which suggests up to 95% chance that there was a significant positive correlation between the number of tender committee members that had accessed training in procurement management and variation in the level of

procurement-related expenditure. The results suggest that as the number of trained committee members increases, so does the variation in the level of procurement-related expenditure.

Key informants reiterated the importance of training for members of school tender committees; however, no consistent training program had been initiated to support procurement reforms in public entities, including secondary schools. Besides, available training activities were haphazard and uncoordinated across the country, which slowed down reforms and constrained expenditure management. In view of this, participants suggested the need for a comprehensive training program, which should target all members of school tender committees; and be coordinated at the county and sub-county level education offices.

4.5.2.2 Perceived adequacy of skills among members of tender committees

Participants were requested to indicate their views regarding adequacy of necessary skills for effective management of expenditure, among members of tender committees in their institutions. The results, which are presented in Figure 4.2, show that of the 35 participants, 1 (2.9%) felt that skills for expenditure management among the said group were ‘very adequate’, while 12 (34.2%) rated it as ‘adequate’. Contrastingly, 8 (22.9%) participants believed that such skills were ‘inadequate’, while 3 (8.6%) described it as ‘very inadequate’.

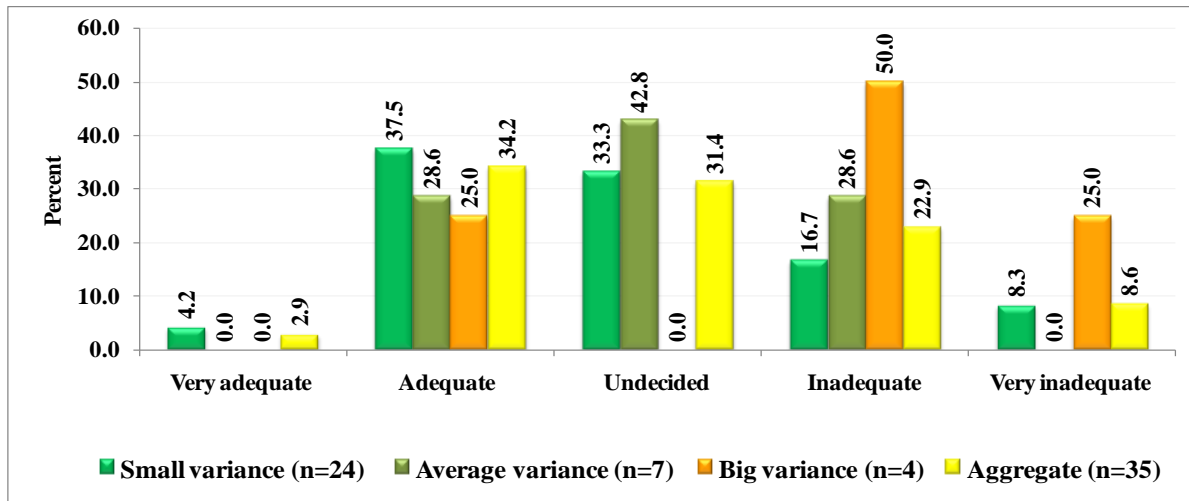


Figure 4.2: Perceived adequacy of skills among tender committee members.

Cumulatively, 13 (37.1%) participants expressed satisfaction with skills possessed by members of tender committees, in relation to expenditure management. This included 10 (41.7%) participants whose schools recorded small variation in the level of procurement-related expenditure, 2 (28.6%) whose schools achieved average variation and 1 (25.0%) whose school experienced big variation. Contrastingly, 11 (31.5%) participants indicated dissatisfaction with the level of skills necessary for expenditure management among members of tender committees. This group included 6 (25.0%) whose schools experienced small variation in expenditure, 2 (28.6%) whose schools reported average variation and 2 (50.0%) whose schools recorded big variation.

Based on the cross-tabulation results, the analysis obtained a computed χ^2 value of 5.926, with 8 degrees of freedom and a p-value of 0.655, which is not statistically significant. The results suggest that there was no significant association between perceived adequacy of necessary skills among members of school tender

committees and variation in the level of procurement-related expenditure. On the same note, about two-thirds of key informants expressed dissatisfaction with the level and/or variability of skills necessary for expenditure management among members of school tender committees. Participants pointed out that existing training opportunity provided by MoE was merely an orientation, which targeted chairpersons of tender committees and selected members. The existing training was faulted for being weak in terms of both depth and scope of content, as well as number of beneficiaries. Consequently, participants suggested need for the MoE to review the training program, with a view to widening and deepening content, as well as improve budgetary allocation in order to reach more members of school tender committees.

4.5.2.3 Additional skills that members of school tender committees require

Participants who expressed discontent with the level and/or variety of skills possessed by members of school tender committees were requested to identify additional skills, which would make members of such committees more effective in managing procurement-related expenditure. The results in Table 4.10, show that there is need for training on tendering process, according to most participants (19, 86.4%); while 12 (54.5%) felt that members of tender committees should access training on financial management of educational institutions. Another 12 (54.5%) participants identified the need for training on procurement laws, while 8 (36.4%) cited market survey as a key area in which members of school tender committees should be trained.

Table 4.10: Additional necessary skills for members of school tender committees

Requisite skills	Frequency	Percent of total frequency	Percent of sample size (n)
Basic accounting skills	1	1.7	4.5
Procurement management	1	1.7	4.5
Budgeting	1	1.7	4.5
Financial management in schools	12	20.3	54.5
Inventory management	1	1.7	4.5
Market survey	8	13.6	36.4
Procurement laws	12	20.3	54.5
Procurement planning	3	5.1	13.6
Tendering process	19	32.2	86.4
Best practices in procurement	1	1.7	4.5
Total frequency	59	100.0	268.2
Sample size (n)	22		

NB: A multiple response variable; hence, total frequency exceeds sample size (n).

Still on the same subject, key informants revealed that members of school tender committees should access more training on stores management, financial management of schools, financial management ethics, tendering procedures, and regulations, as well as quality control of goods, services and works. Furthermore, some key informants indicated that the composition of tender committees was wanting in terms of skills in technical fields such as architecture and quantity survey, which are crucial for controlling the quality of works; thus, ensuring value for money. Participants emphasised the need for stakeholders to consider such skills when designing training programmes for school tender committees.

4.5.2.4 Communication from the Directorate of Public Procurement

Regarding communication from the Directorate of Public Procurement (DPP), the results in Figure 4.3 show that 26 (74.3%) participants received such communication ‘occasionally’, 8 (22.9%) ‘never’ received such communication,

while 1 (2.9%) indicated ‘always’. The analysis obtained a computed χ^2 of 12.228, with 4 degrees of freedom and a p -value of 0.016, which is significant. The results suggest up to 95% chance that frequency of communication from the DPP significantly associated with the variation in the level of procurement-related expenditure. Key informants acknowledged that communication from the DPP was important for updating and educating members of tender committees regarding procurement reforms in the public sector, with a view to improving procurement practices in secondary schools.

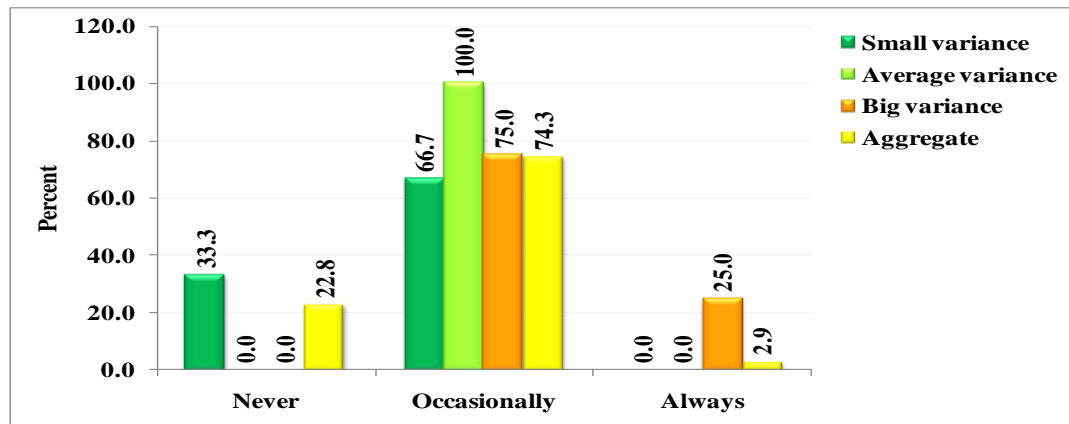


Figure 4.3: Communication from the Directorate of Public Procurement.

Key informants further noted that such communication was also crucial for enhancing visibility of the DPP in schools, which is fundamental for improving procurement practices and financial discipline. Based on these arguments, some participants hypothesised that the higher the frequency of communication between the DPP and public schools, the better the chances that tender committees will improve the level of financial discipline and management of procurement-related expenditure. Participants emphasised the need for more frequent communication

on policy and legislative matters in order to improve the capacity of school tender committee members.

4.5.3 Tender advertising and expenditure management

Section 96 (1) of the of the *Procurement Act, 2015* and Part 9 of the *Guidelines for Bidders, 2010* provides opportunity for procuring entities to take such steps as are reasonable to bring the invitation to tender to the attention of those who may wish to submit their bids. This is particularly necessary where the estimated value of goods, services, or works equals or exceeds institutional threshold. Sub-section (2) of the Act provides that advertisements may be done through national newspapers, electronic media, and websites as well as in public and conspicuous places reserved for this purpose (Government of Kenya, 2015).

In addition, *Guidelines for Potential Bidders* identifies the media through which tender opportunities should be advertised, including notice boards of government agencies, electronic media such as radio and television; newspapers and other print media (both local and international); individual public procuring entities' websites; and special website for tender opportunities set by PPOA. The form of advertisement depends on the size and complexity of goods, services or works being procured (PPOA, 2010).

The aim of tender advertising is to enhance competitiveness of the procurement process, get value for resources expended, as well as ensure fairness to all potential bidders. This study captured information on various indicators of

tender advertising and related aspects, including frequency of tender advertising, common media for tender advertising, average period given to bidders to submit their applications, as well as tender documents commonly used by school tender committees, among others. Details are presented and discussed in the following sub-sections.

4.5.3.1 Frequency of tender advertising by school tender committees

The results presented in Figure 4.4 show that of the 35 participants, 21 (60.0%) indicated that in their schools, tenders were advertised ‘always’. This included 10 (41.7%) participants whose schools experienced small variation in the level of procurement-related expenditure, 7 (100%) whose schools recorded average variation and 4 (100.0%) whose schools reported big variation. Furthermore, 13 (37.1%) participants indicated that in their schools, tenders were advertised ‘occasionally’, while 1 (2.9%) person hinted that tenders were ‘never’ advertised.

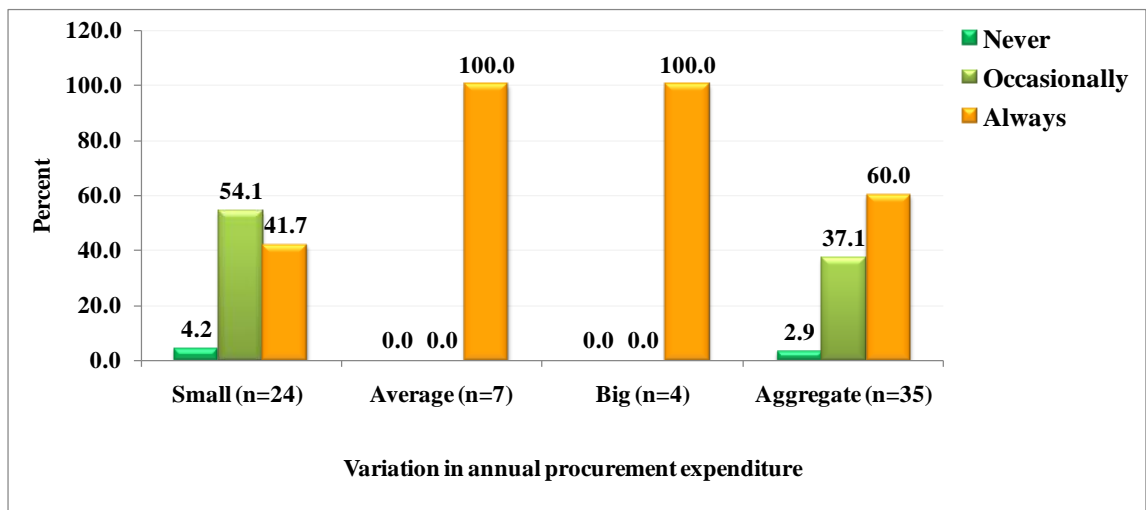


Figure 4.4: Frequency of tender advertising by school tender committees.

Based on the cross-tabulations, the analysis obtained a computed χ^2 value of 10.694, with 4 degrees of freedom and a p -value of 0.030, which is significant. The results suggest up to 95% chance that the frequency of tender advertising significantly associated with variation in the level of procurement-related expenditure. Further analysis obtained a Pearson's Correlation Coefficient of -0.470 and a p -value of 0.004, which is also significant. This shows up to 99% chance that the frequency of tender advertising had a significant and negative correlation of a fair strength with variation in the level of procurement-related expenditure. Better still, as the frequency of tender advertising increases due to procurement reforms, procurement-related expenditure tended to decrease. A reduction of procurement-related expenditure signifies improvement in the financial discipline standards and expenditure management.

Key informants also revealed that most schools were consistent in advertising tenders using various channels. Nonetheless, a few cases where tenders were awarded secretly were also cited. For instance, tenders such as repair of broken water and sewerage infrastructural facilities as well as construction projects funded by Constituency Development Funds (CDF), were often awarded secretly without proper advertising as required by the *Procurement Act, 2015*. Participants linked such tenders with substandard goods and services, poor workmanship and inflated costs, which constrained effective management of procurement-related expenditure in public secondary schools.

Even though tender advertising is a crucial antecedent for expenditure management, key informants pointed that the effectiveness of advertisements was impeded by lack of guidelines for schools to standardise the content of advertisements, for instance, in terms of fees chargeable for tender documents and prequalification requirements. As a result, it was common to find two public schools in the same category posting adverts in completely different formats, setting different prequalification requirements for a similar project and charging differently for tender documents. Consequently, whereas some advertisements attracted many bidders, which helped defray related costs; others attracted too few bidders, below cost-recovery threshold. Standard guidelines for the design of tender advertising are likely to make such advertisements more attractive to bidders and self-financing; thereby, reduce procurement-related expenditure.

4.5.3.2 Common media used by school tender committees to advertise tenders

Part 9 of the *Guidelines for Potential Bidders, 2010* indicates that procuring entities can use various media to advertise tender opportunities, including notice boards, radio and television, newspapers and other print media, as well as websites. The choice of advertisement media is determined by various factors, including tender value, technical expertise and level of capitation funding required; targeted market, whether local or international, as well as cost-efficiency of each advertising medium relative to others (PPOA, 2010).

In this study, participants were asked to indicate the media that were commonly used by tender committees in their schools to advertise tender

opportunities. The results presented in Table 4.11 show that 27 (79.4%) participants identified newspapers as the most common medium. This included 18 (66.7%) participants whose schools experienced small variation in the level of procurement-related expenditure; 6 (22.2%) whose schools recorded average variation and 3 (11.1%) who indicated big variation. The second most common medium for advertising tenders was public notice board, as stated by 14 (41.2%) participants, including 11 (78.6%) whose schools recorded small variation in the level of procurement-related expenditure and 3 (21.4%) whose schools experienced average variation.

Table 4.11: Types of advertising media commonly used by school tender committees

Commonly used media	Fq	% of total frequency	% of sample size (n)	Variation in procurement expenditure					
				Small		Average		Big	
				Fq	%	Fq	%	Fq	%
Newspapers	27	47.4	79.4	18	66.7	6	22.2	3	11.1
Public notice boards	14	24.6	41.2	11	78.6	3	21.4	0	0.0
School notice boards	7	12.3	20.6	7	100.0	0	0.0	0	0.0
Public/social forums	5	8.8	14.7	1	20.0	3	60.0	1	20.0
School website	4	7.0	11.8	1	25.0	2	50.0	1	25.0
Total frequency	57	100.0	167.6	38	66.7	14	24.6	5	8.8
Sample size (n)	34								

NB: Multiple response variable; hence, total frequency (fq) exceeds sample size (n).

In addition, school notice boards were mentioned by 7 (20.6%) participants, all of whose schools recorded small variation in the level of procurement-related expenditure; while 5 (14.7%) participants cited public and/or social forums such as government functions and religious events. This group included 3 (60.0%) participants whose schools experienced average variation in the level of procurement-related expenditure. Similar findings were revealed by key informants

who indicated that tender committees use school notice boards, social forums such as churches, public notice boards, and newspapers. The type of media used depends on factors such as tender value and type, as well as level of expertise and quality specifications required. Notably though, more than three-quarters of schools were conforming to legal provisions requiring all procuring entities to advertise tender opportunities. Participants noted that this was a positive step towards effective management of procurement-related expenditure.

4.5.3.3 Average period given to bidders to submit their applications

The duration given to bidders to respond to tenders is a crucial indicator of transparency and commitment to obtain value for resources invested in tendering processes. Part IV, Section 36 of the *Procurement Regulations, 2006* provides that for purposes of section 89(c) of the *Procurement Act, 2015* the minimum period between advertisement and deadline for submission of international tenders should be thirty days. Notably though, there is no similar provision for local tenders. Nonetheless, the results presented in Table 4.12 show that bidders were given a mean of 20.23 (≈ 20) days to prepare and submit their bid applications.

More particularly, participants whose schools recorded small variation in the level of procurement-related expenditure indicated 20.6 days; those whose schools experienced big variation reported 19.5 days, while those whose schools had an average variation stated 19.3 days. Based on this, the analysis obtained a computed $F_{(2, 32)}$ statistic of 0.154 and a p -value of 0.858, which not significant;

thus, suggesting that there was no significant variation between the three categories of schools in terms of the period given to bidders to submit their tender applications.

Table 4.12: Average period given to bidders to submit their applications (in days)

DESCRIPTIVES								
Period	N	Mean	SD	SE	95% CI for Mean		Min	Max
					<i>LB</i>	<i>UB</i>		
Small variation	24	20.63	6.665	1.360	17.81	23.44	14	30
Average variation	7	19.29	5.880	2.222	13.85	24.72	14	30
Big variation	4	19.50	3.000	1.500	14.73	24.27	15	21
Total	35	20.23	6.107	1.032	18.13	22.33	14	30

ANOVA						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	12.118	2	6.059	0.154	0.858	
Within Groups	1256.054	32	39.252			
Total	1268.171	34				

CORRELATIONS			
		Variation in procurement expenditure	Average period given to bidders to submit their applications (in days)
Variation in procurement expenditure	Pearson Correlation	1	0.058
	Sig. (2-tailed)		0.740
	N	35	35
Average period given to bidders to submit their applications (in days)	Pearson Correlation	0.058	1
	Sig. (2-tailed)	0.740	
	N	35	35

Furthermore, the analysis obtained a correlation coefficient of 0.058 and a ρ -value of 0.740, which is not significant; thus, confirming lack of a significant relationship between the period given to bidders to prepare and submit their tender applications, and variation in the level of procurement-related expenditure. The findings suggest that whether bidders were given two weeks or one month to prepare and submit their applications, this did not have any significant influence on

the procurement-related expenditure. Nonetheless, the duration given to bidders to submit their applications remains important for transparency and convenience of bidders, depending on the complexity of requirements.

4.5.3.4 Documents used by school tender committees

The Third Schedule of the *Procurement Regulations, 2006* sets out a list of 33 standard tender documents that should be applied by all public procuring entities to reform procurement activities and tendering processes. In this study, participants were requested to identify standard documents commonly used by their school tender committees to capture evidence of procurement activities and tendering processes. The results summarised in Table 4.13 show that out of 35 participants, 25 (71.4%) mentioned local purchase order; followed by purchase requisition form, as stated by 17 (48.6%) participants; and request for quotation form, 8 (22.9%).

The results suggest that most participants could cite only a few documents; which further suggest that most standard documents prescribed by the *Procurement Regulations, 2006* are not accessible in public secondary schools across the County. This was confirmed by key informants who cited purchase requisition, local purchase order, request for quotation, and local service order, as the common documents used by school tender committees. Participants emphasised the need for training regarding documentation of procurement activities and tendering processes.

Table 4.13: Documents used by school tender committees

Tender documents used	Frequency	Percent of total frequency	Percent of sample size (n)
Instruction to bidders	3	4.2	8.6
Local purchase order	25	35.2	71.4
MoE procurement manual	2	2.8	5.7
PPOA manual for schools and colleges	3	4.2	8.6
Procurement plan	1	1.4	2.9
Purchase requisition form	17	23.9	48.6
Request for quotation form	8	11.3	22.9
Store ledger	1	1.4	2.9
Tender agreements	2	2.8	5.7
Invoices	3	4.2	8.6
Procurement act	3	4.2	8.6
Local service order	2	2.8	5.7
Inspection and acceptance certificates	1	1.4	2.9
Total frequency	71	100.0	202.9
Sample size (n)	35		

Person preparing tender documents			
Accounts clerk	2	4.8	5.7
Deputy principal	2	4.8	5.7
Principal	1	2.4	2.9
Procurement officer	4	9.5	11.4
School bursar	10	23.8	28.6
School bursar + principal	1	2.4	2.9
Storekeeper	3	7.1	8.6
Tender committee members	17	40.5	48.6
Tender committee vice chair	1	2.4	2.9
Secretary	1	2.4	2.9
Total frequency	42	100.0	120.0
Sample size (n)	35		

NB: Multiple response variables; hence, total frequency exceeds sample size (n).

Regarding persons preparing tender documents, the results in Table 4.13 show that up to 17 (40.5%) participants mentioned tender committee members; which is in line with provisions of Section 8 of the *Procurement Regulations, 2006*. Others included bursars, 10 (23.8%); procurement officers, 4 (9.5%); storekeepers, 3 (8.6%) and accounts clerks, 2 (5.7%). Again, these results demonstrate the need

for training to enable school tender committees to understand their roles and responsibilities as assigned by the law.

4.5.3.5 Availability and utilisation of guidelines for preparing tender documents

Section 52 (1-3) of the *Procurement Act, 2005* sets out guidelines that procuring entities should apply when preparing tender documents, which accordingly, should contain enough information to permit competition among bidders. Tender documents should also specify time limits for delivery of goods or completion of services and works; relevant drawings and bills of quantities; general and specific conditions to which contract should be subjected; tender number; as well as instruction for preparation and submission of tenders.

In this study, most participants (34, 97.1%) affirmed that the guidelines for preparing tender documents were available in their schools. Regarding the frequency of utilisation, the results in Figure 4.5 show that of the 34 participants, 21 (61.8%) said their school tender committees use standard guidelines ‘always’ when preparing tender documents. This included 10 (43.5%) participants whose schools recorded small variation in the level of procurement-related expenditure, 7(100.0%) whose schools experienced average variation and 4 (100.0%) whose schools recorded big variation in expenditure.

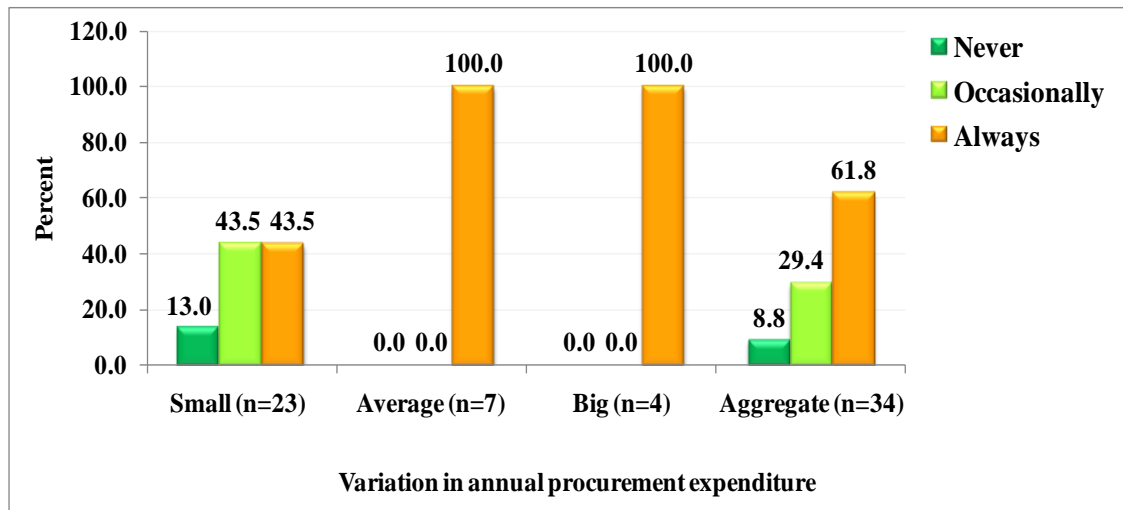


Figure 4.5: Utilisation of standard guidelines when preparing tender documents.

Furthermore, 10 (29.4%) participants indicated that standard guidelines are used ‘occasionally’ to prepare tender documents, while 3 (8.8%) stated that such guidelines are ‘never’ used for the said purpose. Based on this, the analysis revealed a significant association between utilisation of standard guidelines to prepare tender documents and variation in the level of procurement-related expenditure ($\chi^2 = 10.066$, $df = 4$ & p -value = 0.039). This implies that consistent utilisation of such guidelines was likely to influence variation in the level of procurement-related expenditure between the two reference periods.

Participants who indicated that the standard guidelines were ‘never’ or were ‘occasionally’ utilised to prepare tender documents were requested to state factors preventing consistent utilisation of such guidelines. The results summarised in Table 4.14 show that up to 11 (84.6%) participants were of the view that lengthy tendering procedures contributed to none or inconsistent utilisation of standard

guidelines to prepare tender documents. Besides, 9 (69.2%) participants cited inadequate knowledge of procurement process, 7 (53.8%) mentioned lack of procurement plans, while another 7 (53.8%) cited heavy workload.

Table 4.14: Reasons for non-use of standard guidelines to prepare tender documents

Factors preventing use of standard guidelines	Frequency	Percent of total frequency	Percent of sample size (n)
Emergency situations	2	5.3	15.4
Inadequate knowledge on procurement process	9	23.7	69.2
Lack of procurement plans	7	18.4	53.8
Lengthy tendering procedures	11	28.9	84.6
Interference from some stakeholders	1	2.6	7.7
Tender size	1	2.6	7.7
Heavy workload	7	18.4	53.8
Total frequency	38	100.0	292.3
Sample size (n)	13		

NB: A multiple response variable; hence, total frequency exceeds sample size (n).

Similarly, key informants noted that whereas some school tender committees were consistent in utilising standard guidelines to prepare tender documents, others were not. This suggests that utilisation of such guidelines was not universally embraced in public secondary schools, with the main reasons being lack of awareness regarding their importance and lack of appropriate training. Whatever the reason, participants agreed that non-utilisation of standard guidelines for preparing tender documents created a loophole for tender malpractices, which in turn, may have influenced the financial discipline standards and procurement-related expenditure.

4.5.3.6 Factors considered to enhance transparency of tender opening

The procurement reforms were expected to entrench transparency in tender opening through the actions set out in Section 78 of the *Procurement Act, 2015*. More specifically, Section 78 (1) demands that a tender opening committee be appointed by the accounting officer, as a sub-set of the school tender committee, to open all tenders received within specified timeframes. Transparency of tender opening processes may also be improved by inviting bidders or their representatives to attend the event, assigning identification numbers to each bid, reading aloud details of each bid, registering all bids and those attending the event, among other actions (sub-sections 2-9).

In this study, participants were requested to state measures taken by their tender committees to enhance transparency of tender opening processes, with a view to gauging the extent to which the committees had embraced provisions of Section 78 of the *Procurement Act, 2015*. According to the results presented in Table 4.15, up to 28 (80.0%) participants stated that their tender committees invite all bidders to participate in tender opening sessions, 16 (45.7%) said that all tender committee members are required to witness the event, while 12 (34.3%) stated that contents of bids are read out aloud. In addition, 10 (28.6%) participants indicated that tender opening committees compile bid evaluation reports, which are tabled before BoM, 9 (25.7%) stated that all attendees are required to register their details and sign participants' lists, while 6 (17.1%) mentioned that tender committees often communicate to all stakeholders in advance.

Table 4.15: Measures considered to enhance transparency

Measures for ensuring transparency of bid opening	Frequency	Percent of frequency	Percent of sample size (n)
All bidders invited to attend the event	28	29.5	80.0
All tender committee members witness the event	16	16.8	45.7
At least half of committee members witness the event	3	3.2	8.6
Takes minutes, which are shared with stakeholders	5	5.3	14.3
Communicates the event to all stakeholders in advance	6	6.3	17.1
Contents of bids are read out aloud	12	12.6	34.3
Sealing is confirmed by all attendees	2	2.1	5.7
All attendees sign list of participants	9	9.5	25.7
Committee members sign docs in presence of all bidders	4	4.2	11.4
Bid evaluation report tabled before BoM	10	10.5	28.6
Total frequency	95	100.0	271.4
Sample (n)	35		

NB: A multiple response variable; hence, total frequency exceeds sample size (n).

The results suggest that school tender committees are making effort to enhance transparency of tender opening processes. Nonetheless, key informants observed that tender opening processes are not transparent universally. In this regard, participants cited some actions, which have compromised transparency of the process in various schools, including opening bids on a rolling basis, and opening bids secretly without knowledge of stakeholders. Others include, failure to record bid documents at the time of opening, failure to take down minutes of the process, as well as failure to provide a secure storage and restricted access to submitted bids. In view of this, participants called for sensitisation of tender committees regarding provisions of Section 78 of the *Procurement Act, 2015*.

4.5.3.7 Tender evaluation criteria and confidentiality of evaluation outcomes

The procedure for tender evaluation is set out by Section 81 of the *Procurement Act, 2015*, Sections 47-50 of the *Procurement Regulations, 2006* as

well as Section 11 of the *Procurement Manual, 2010*. Among other aspects, the stated legal and policy provisions specify criteria for guiding tender evaluation process, as well as measures for ensuring confidentiality of tender evaluation process. In this study, participants were requested to indicate factors considered in tender evaluation process in their schools.

The purpose of the question was two-fold: determine the extent to which participants were aware of provisions set by the legal and policy frameworks, as well as identify the criteria commonly applied by school tender committees. The results presented in Table 4.16 show that of the 35 participants, 17 (48.6%) cited the prices quoted by bidders as the main factor considered by tender committees; 13 (37.1%) mentioned financial capability of bidders, as demonstrated by audited financial reports; while 12 (34.3%) indicated quality specifications. In this regard, tenders are awarded based on the ability of bidders to meet quality specifications outlined in tender documents.

Additional factors included record of accomplishments, which was stated by 10 (28.6%) participants; tax compliance, 7 (20.0%), level of experience in relation to the tender activity at hand, 5 (14.3%); as well as technical capacity, 5(14.3%); among others. The findings suggest that most school tender committees are likely to be practicing evaluation criteria specified by the procurement laws and policies, which is a positive step towards expenditure management.

Table 4.16: Tender evaluation factors and confidentiality of outcomes

Factors considered in tender evaluation process	Frequency	Percent of total frequency	Percent of sample size (n).
Business registration status	3	3.9	8.6
Financial capability	13	17.1	37.1
Flexibility of quotations	1	1.3	2.9
Prices quoted	17	22.4	48.6
Quality specifications	12	15.8	34.3
Tax compliance	7	9.2	20.0
Technical capacity	5	6.6	14.3
Record of accomplishments	10	13.2	28.6
Credit period	1	1.3	2.9
Level of experience	5	6.6	14.3
Credit rating	1	1.3	2.9
Proposed time to deliver	1	1.3	2.9
Total frequency	76	100.0	217.1
Sample size (n)	35		

Measures to ensure confidentiality of tender evaluation outcomes

Evaluation results kept under lock and key	21	20.2	60.0
Committee members take oath of secrecy	17	16.3	48.6
Developed policy guidelines for evaluation process	12	11.5	34.3
Rotating evaluators every often	8	7.7	22.9
Limiting number of committee members evaluating bid	5	4.8	14.3
Keeping evaluation dates discrete	9	8.7	25.7
BoM monitors tender evaluation process	10	9.6	28.6
Keeping evaluation period as short as possible	6	5.8	17.1
Ensuring no bidders are in school precincts	3	2.9	8.6
Bidders informed immediately	13	12.5	37.1
Total frequency	104	100.0	297.1
Sample size (n)	35		

NB: Multiple response variables; hence, total frequency exceeds sample size (n).

The results in Table 4.16 further presents measures taken by school tender committees to ensure confidentiality of tender evaluation process and its outcomes. In this regard, 21 (60.0%) participants indicated that evaluation results are kept under lock and key; 17 (48.6%) stated that evaluation committee members take oath of secrecy not to divulge any information related to the committee’s business; while

13 (37.1%) said that bidders are informed about the outcome of tender evaluation process, immediately to avoid potential confidentiality risks.

In addition, 12 (34.3%) participants indicated that their tender committees developed policy guidelines for tender evaluation processes, which include confidentiality measures, while 10 (28.6%) said that BoMs monitor tender evaluation processes, which deters members from leaking information. Similarly, key informants indicated that BoM members contribute to the integrity of tender evaluation process by playing a supervisory role, right from planning to execution of tenders. In this regard, tender committees are obligated to brief BoMs regularly through minutes and comprehensive reports, which are examined for evidence of irregularities.

Participants acknowledged that adoption of prescribed tender evaluation criteria and measures for ensuring confidentiality of outcomes has significantly reduced irregularities associated with tender evaluation process. Nonetheless, the same participants cited a few cases of procurement malpractices associated with tender evaluation, which manifested through actions such as failure to document evaluation processes; introduction of additional or deletion of criteria during the evaluation process, leading to unfair disqualification of some bidders; as well unreasonable delays in evaluating bids beyond the duration specified by procurement laws and policies. In view of this, participants emphasised the need for sensitisation and training of tender committee members on procurement laws and policies. Arguably, improved knowledge of relevant legal and policy

provisions is likely to stimulate professional management of tender evaluation processes, reinforce preventive measures against regularities, and enhance financial discipline standards.

4.5.3.8 Duration of tender evaluation process

Section 46 of the *Procurement Regulations, 2006* provides that a procuring entity shall, evaluate tenders within a period of thirty days after opening bids. The actual period is likely to vary from time to time due to factors such as tender value, tendering method(s) used, and the number of bidders, among others. The duration of tender evaluation is critical for preventing malpractices, controlling procurement-related expenditure, as well as upholding integrity of the process. In this study, participants were requested to indicate the average duration taken to evaluate tenders in their schools.

The results in Table 4.17 show that participants stated a mean of 7.57 (≈ 8) days for tender evaluation, albeit with remarkable variations across the three clusters of schools. More specifically, participants whose schools experienced small variation in the level of procurement-related expenditure indicated a mean duration of 5.38 (≈ 5) days; those whose schools experienced average variation in expenditure stated 9 days, while those whose schools experienced big variation reported 18.25 (≈ 18) days. Based on the cross-tabulation results, the analysis obtained a computed $F_{(2, 32)}$ statistic of 5.868 and a p -value of 0.007, which is significant. The results suggest up 99% chance that the duration of tender evaluation varied significantly across the three clusters of schools, viz. small,

average, and big variation in the level of procurement-related expenditure. Nonetheless, the duration for tender evaluation reported by the three categories of schools was within the level prescribed by procurement laws and policies.

Table 4.17: Duration of tender evaluation process

DESCRIPTIVES								
Tender evaluation duration	N	Mean	SD	SE	95% CI for Mean		Min	Max
					<i>LB</i>	<i>UB</i>		
					Small variation	24		
Average variation	7	9.00	6.298	2.380	3.18	14.82	1	14
Big variation	4	18.25	7.848	3.924	5.76	30.74	14	30
Total	35	7.57	8.016	1.355	4.82	10.32	1	30

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	586.196	2	293.098	5.868	0.007***
Within Groups	1598.375	32	49.949		
Total	2184.571	34			

CORRELATIONS			
		Variation in procurement expenditure	Duration taken by committee to evaluate bids (in days)
Variation in procurement expenditure	Pearson Correlation	1	0.562
	Sig. (2-tailed)		0.000***
	N	35	35
Duration taken by committee to evaluate bids (in days)	Pearson Correlation	0.562	1
	Sig. (2-tailed)	0.000***	
	N	35	35

, **, * show significance at $p < 0.1$, $p < 0.05$ and $p < 0.01$ error margins, respectively*

Furthermore, the results show a positive correlation of fair strength between the duration of tender evaluation and variation in the level of procurement-related expenditure ($r = 0.562$ & p -value = 0.000). The results suggest that the duration of

tender evaluation was likely to influence the variation in the level of procurement-related expenditure. Key informants associated short duration of tender evaluation with accidental and/or intended rushed decisions, which in some cases, lead to over-expenditure. Contrastingly, relatively longer duration of tender evaluation permit tender committees to make informed decisions; for instance, by examining quoted prices against market prices, as well as stated qualifications against desired technical skills, among other aspects of quality. Informed tender award decisions are crucial pre-requisites for optimal expenditure in the procurement of goods, services, and works. Consequently, the duration of tender evaluation was likely to influence financial discipline standards and management of procurement-related expenditure.

4.5.3.9 Communicating outcome of tender evaluation process

Best practice demands that all bidders should be informed about the outcome of tender evaluation processes, regardless of whether they are successful or not. Section 87 (2) of the *Procurement Act, 2015*, read together with Section 66 of the *Procurement Regulations, 2006* and Part 12.4 of the *Procurement Manual, 2010*, require that the outcome of tender evaluation processes be communicated to both successful and unsuccessful bidders. In this study, the analysis reveals that school tender committees used various methods to notify bidders about the outcome of tender evaluation. As indicated in Figure 4.6, bidders were notified through letters, according to most participants (25, 71.4%). This group included 18 (75.0%) participants whose schools recorded small variation in the level of procurement-

related expenditure, 5 (71.4%) whose schools experienced average variation and 2 (50.0%) whose schools recorded big variation.

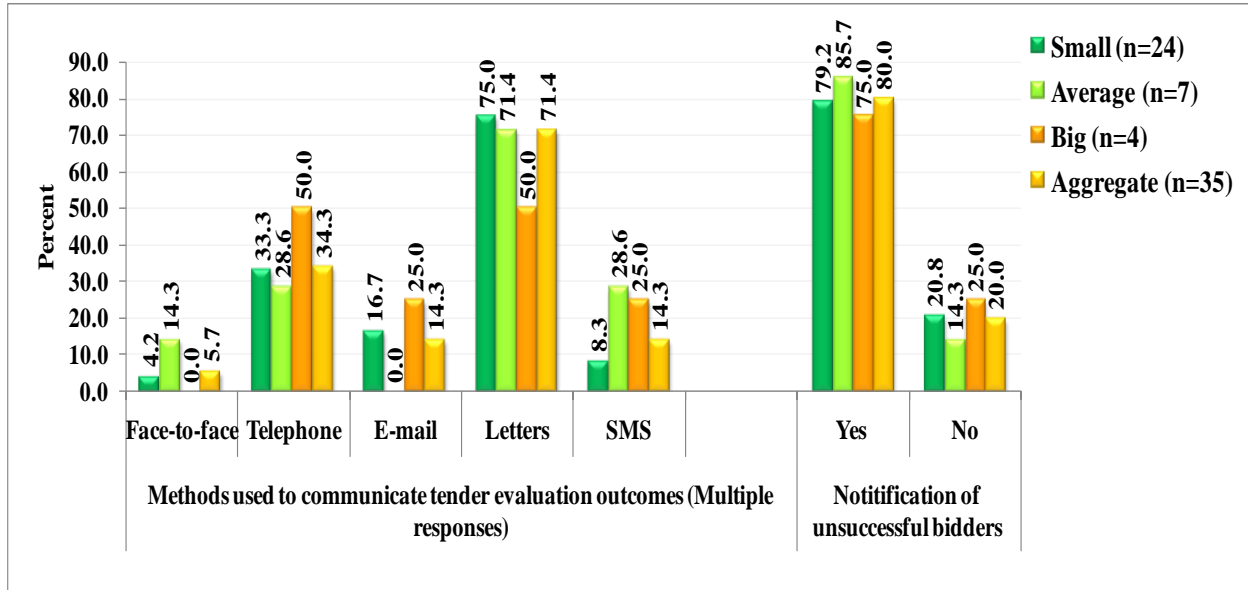


Figure 4.6: Methods used to notify bidders about outcome of tender evaluation process.

In addition, 12 (34.3%) participants stated telephone, and this included 8 (33.3%) whose schools experienced small variation in the level of procurement-related expenditure, 2 (28.6%) whose variation in the level of procurement-related expenditure was average and another 2 (50.0%) who reported big variation. The results in Figure 4.6 further show that 5 (14.3%) participants stated e-mails, another 5 (14.3%) mentioned short text messages, while 2 (5.7%) said that bidders were notified through face-to-face interaction upon enquiry. Even though 28 (80.0%) participants affirmed that unsuccessful bidders were also notified about the outcome of tender evaluation, the analysis revealed lack of a significant association

between notification of unsuccessful bidders and variation in the level of procurement-related expenditure ($\chi^2 = 0.216$, $df = 2$ & a p -value = 0.898).

4.5.3.10 Reasons for notifying unsuccessful bidders

Unsuccessful bidders were notified for various reasons, which are presented in Table 4.18. For instance, 14 (50.0%) participants indicated that such bidders were notified in order to enhance transparency of tender evaluation processes; 8 (28.6%) noted that it was part of good practice in public procurement; 6 (21.4%) said the action was necessary to reduce anxiety and speculation among bidders; while 5 (17.9%) noted that unsuccessful bidders had the right to such information.

Table 4.18: Reasons for notifying unsuccessful bidders

Reasons	Frequency	Percent of total frequency	Percent of sample size (n)
Avoid speculation	1	2.3	3.6
Feel appreciated for their effort	2	4.5	7.1
They have a right to know outcome of their bids	5	11.4	17.9
Good practice	8	18.2	28.6
Reduce anxiety	6	13.6	21.4
Allow appeals in case of dissatisfaction	3	6.8	10.7
To be more competitive in the future	3	6.8	10.7
Close a tender officially	2	4.5	7.1
Transparency	14	31.8	50.0
Total frequency	44	100.0	157.1
Sample size (n)	28		

NB: A multiple response variable; hence, total frequency exceeds sample size (n).

Additional reasons for informing unsuccessful bidders, include allowing for appeals among those dissatisfied with tender award decisions (10.7%), enabling bidders to be more competitive in the future (10.7%) and as well as to close tenders

officially (7.1%). Whatever the reason, the results suggest that most tender committees complied with Section 87 (2) of the *Procurement Act, 2015*, by communicating the outcome of tender evaluation processes, which in turn, is likely to influence the level of procurement-related expenditure.

4.5.4 Frequency of emergency procurement and expenditure management

Emergency procurement is provided for in Section 103(2) (b) of the *Procurement Act, 2015* under exceptional circumstances within the context of “urgent need” as defined in Part I (2). In this regard, “urgent need” refers to a circumstance of imminent or actual threat to public health, welfare, safety, or damage to property, such that engaging in tendering procedures or other procurement methods would not be practicable (Government of Kenya, 2015). Emergency procurement is a delicate provision that is vulnerable to misuse by accounting officers through dilatory tactics, with the intention of creating “urgent need” situations in order to subvert procurement procedures. When used properly, emergency procurement can save procuring entities from the threats described above; but when misused, the provision can lead to massive loss of public resources, through inflated prices and bloated expenditure (Basheka, 2006; Ogachi, 2006).

The *Procurement Manual, 2010* prescribes various measures that should be instituted to manage the application of emergency procurement provisions, including business continuity planning, as a criterion for registration or pre-qualification of potential suppliers. Other measures include procurement of goods

and services covered by framework contracts, which should be formulated to cater for procurement of requirements such as office consumables to run for a year or more; as well as urgent procurement of goods and services not covered by framework contracts (PPOA, 2009b). This study covered some aspects of emergency procurement, including availability of procurement plans and frequency of emergency procurement. The results are presented and discussed in the following sub-sections.

4.5.4.1 Availability of procurement plans

Participants were asked to indicate whether their schools had valid procurement plans, which are documents prepared annually by procuring entities, in accordance with provisions of Sections 53 (1-11) and 158 of the *Procurement Act, 2015*, in order to plan all procurement requirements (Government of Kenya, 2015). The results presented in Figure 4.7 show that procurement plans were available in about two-thirds of the schools, according to 22 (62.9%) participants. This group included 11 (45.8%) participants from schools that recorded small variation in the level of procurement-related expenditure, 7 (100.0%) who experienced average variation and 4 (100.0%) that reported big variation. Based on this, the analysis obtained a computed χ^2 of 9.479, with 2 degrees of freedom and a p -value of 0.009, which suggests up to 99% chance that there was a significant association between availability of procurement plans in schools and variation in the level of procurement-related expenditure.

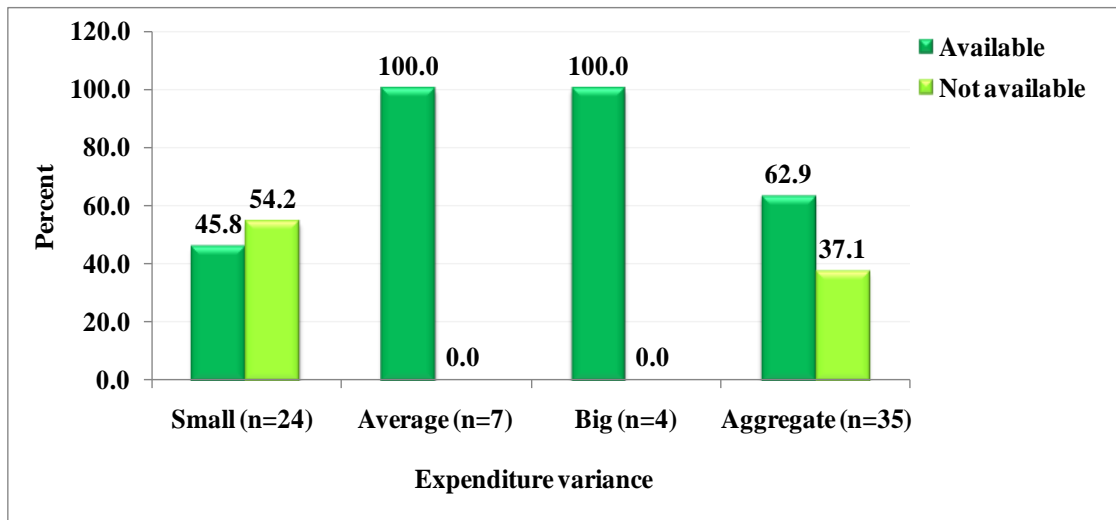


Figure 4.7: Availability of procurement plans in public secondary schools.

Of the 22 participants who affirmed that their schools had procurement plans, 12 (54.5%) indicated that the plans were prepared by school tender committees, 9 (40.9%) said that the plans were prepared by school bursars, while 3 (13.6%) mentioned principals. Others included procurement officers, as mentioned by 2 (9.1%) participants; as well as store-keepers, deputy principals and departmental heads, each cited by 1 (4.5%) respondent, each. Note that this was a multiple response variable.

Still on the same aspect, key informants acclaimed procurement planning for improving efficiency in school procurement activities, which in turn, saved time and money. More particularly, procurement planning ensured timely execution of procurement activities, thus, eliminating the need for rush orders, which participants associated with price inflation. Procurement planning also ensured

continuity of supplies and smooth operations without challenges of stockouts. Nonetheless, some schools did not have procurement plans due to lack of awareness and skills to initiate planning processes. Participants suggested the need for appropriate training to enable school tender committees draw procurement plans for their institutions. This should be complemented with detailed manuals on the same for continued learning.

4.5.4.2 Frequency of emergency procurement

Figure 4.8 shows cross-tabulation results between the frequency of emergency procurement in public secondary schools and variation in the level of procurement-related expenditure. Of the 35 participants, 21 (60.0%) affirmed that emergency procurement was practised ‘occasionally’ in their schools. This group consisted of 18 (75.0%) participants whose schools experienced small variation in the level of procurement-related expenditure, and 3 (42.9%) whose schools recorded average variation. Besides, 13 (37.1%) participants stated that emergency procurement was ‘never’ practiced in their schools. Again, this included 5 (20.8%) participants whose schools recorded small variation in the level of procurement-related expenditure, 4 (57.1%) whose schools reported average variation and 4 (100.0%) whose schools achieved big variation. Only 1 respondent whose school recorded small variation in the level of procurement-related expenditure indicated that emergency procurement was practised ‘always’ in his/her school.

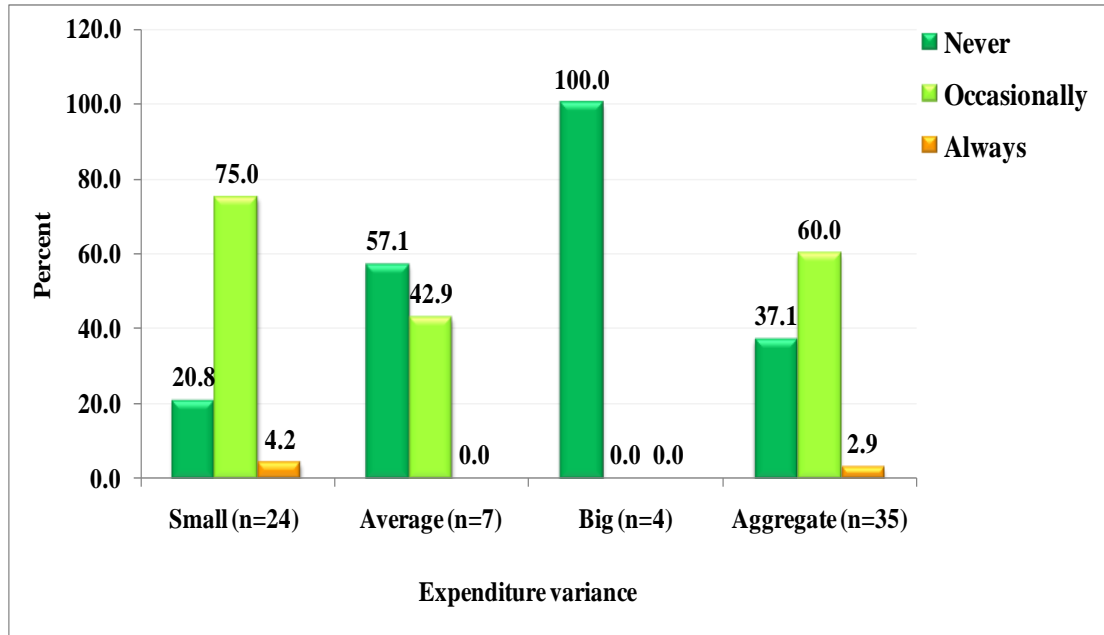


Figure 4.8: Frequency of emergency procurement against expenditure variance.

Based on the cross-tabulation results, the analysis revealed a significant association between the frequency of emergency procurement in schools and variation in the level of procurement-related expenditure ($\chi^2 = 10.829$, $df = 4$ & ρ -value = 0.029). Furthermore, the analysis obtained a correlation coefficient of 0.590 and a ρ -value of 0.000, which suggests up to 99% chance that the frequency of emergency procurement and variation in the level of procurement-related expenditure were significantly correlated. The results imply that a unit increase in emergency procurement was likely to influence a proportionate increment in procurement-related expenditure, which suggests that limiting the frequency of emergency procurement is an important step towards effective management of procurement-related expenditure in public secondary schools.

Key informants pointed out that whereas some cases of emergency procurement were genuinely in line with provisions of Part I, and Section 103 (2) of the *Procurement Act, 2015*, others were deliberately caused by duty-bearers. Deliberate emergency procurement manifested through actions such as failure to assess needs in time and to take necessary precautions; delayed preparation of procurement plans, as well as intentional under-stocking of foodstuff to justify emergency purchases.

Regardless of the underlying factors, emergency procurement were linked to over-quoted prices, which in turn, inflated the amount of resources spent to procure goods, services, and works. In view of this, participants emphasised the need for appropriate training of school tender committees to enhance their capacity in procurement planning. Equally important is the amendment of procurement laws and policies to grant BoM and PA members more powers to monitor activities of school tender committees and accounting officers; thereby, flag out situations that may lead to emergency procurement.

4.5.5 Tendering Methods and Expenditure Management

Section 8 of the *Procurement Manual, 2010* sets out the types of tendering methods that may be applied by educational institutions to procure goods, services and works (PPOA, 2009b). In this regard, the most preferred method is ‘open tendering’ as suggested by Sections 91, 92 of the *Procurement Act, 2015*, and detailed in Section 96 of the same *Act* (Government of Kenya, 2015). Where open tendering may not be feasible, the *Act* permits the application of alternative

procurement methods, as provided for under Sections 91(2) and 92. Such alternative tendering methods include restricted tendering, direct procurement (single sourcing), request for proposals, request for quotations, as well as low-level procurement and specially permitted procurement. This study captured information regarding tendering methods that were applied by public secondary schools in the periods ‘before and after reforms’; and how the application of such methods may have influenced variations in procurement-related expenditure. The following subsections detail the findings.

4.5.5.1 Types of goods and services procured in the past one year

All the 35 (100.0%) participants affirmed that their schools procured goods, services, and works over the reference period (2002-2010). The results in Table 4.19 show the types of goods, services and works that were procured over the one year period that preceded the study, including foodstuff, as stated by 29 (82.9%) participants; stationery, 28 (80.0%); cleaning supplies, 16 (45.7%); and construction materials, 6 (17.1%). The schools also procured services such as security, 17 (48.6%); repair of photocopiers, 9 (25.7%); teaching, 8 (22.9%); as well as insurance and contractor services, each cited by 6 (17.1%) participants.

Table 4.19: Types of goods, services and works procured over the preceding one year period

Types of goods procured	Frequency	Percent of total frequency	Percent of sample size (n).
Boarding facilities	4	3.9	11.4
Construction materials	6	5.9	17.1
Firewood	4	3.9	11.4
Food stuff	29	28.4	82.9
ICT equipment	4	3.9	11.4
Lab chemicals	4	3.9	11.4
Stationery	28	27.5	80.0
Furniture	2	2.0	5.7
Lab equipment	3	2.9	8.6
Sports equipment	1	1.0	2.9
Cleaning supplies	16	15.7	45.7
Water distribution equipment	1	1.0	2.9
Total frequency	102	100.0	291.4
Sample size (n)	35		

Types of services and works procured			
Catering	1	1.4	2.9
Computer maintenance	1	1.4	2.9
Construction labour	3	4.3	8.6
Contractor	6	8.6	17.1
Gardening	1	1.4	2.9
Insurance	6	8.6	17.1
Medical	2	2.9	5.7
Painting	2	2.9	5.7
Pest control	2	2.9	5.7
Repair of furniture	3	4.3	8.6
Repair of equipment	2	2.9	5.7
Repair of vehicles	1	1.4	2.9
Repair of photocopier	9	12.9	25.7
Sanitation	5	7.1	14.3
Security	17	24.3	48.6
Teaching	8	11.4	22.9
Fire fighting	1	1.4	2.9
Total frequency	70	100.0	200.0
Sample size (n)	35		

NB: Multiple response variables; hence, total frequency exceeds sample size (n).

Participants were further requested to indicate the tender methods that were commonly used to procure the stated goods, services, and works. The results presented in Table 4.20 show that request for quotations was the most applied

tender method, as indicated by 28 (80.0%) participants. This group included 22 (78.6%) participants whose schools experienced small variation in the level of procurement-related expenditure; 5 (17.9%) whose schools recorded average variation, as well as 1 (3.6%) whose school experienced big variation.

Table 4.20: Tender methods commonly applied by schools & procurement-related expenditure

Tender methods	Fq	% of total frequency	% of sample size (n)	Variation in procurement expenditure					
				Small		Average		Big	
				Fq	%	Fq	%	Fq	%
Open tender	27	43.5	77.1	17	60.3	7	25.9	3	11.1
Restricted tender	6	9.7	17.1	4	66.7	1	16.7	1	16.7
Request for quotation	28	45.2	80.0	22	78.6	5	17.9	1	3.6
Direct procurement	1	1.6	2.9	1	100.0	0	0.0	0	0.0
Total frequency	62	100.0	177.1	24	71.0	7	21.0	4	8.0
Sample size (n)	35								

NB: A multiple response variable; hence, total frequency (fq) exceeds sample size (n).

Open tendering was mentioned by 27 (77.1%) participants, including 17 (60.3%) whose schools recorded small variation in the level of procurement-related expenditure, 7 (25.9%) who reported average variation and 3 (11.1%) who indicated big variation in expenditure. The cross-tabulation analysis obtained a computed χ^2 of 11.613, with 6 degrees of freedom and a p -value of 0.025, which is significant at 95% confidence level. The results suggest up to 95% chance that there was a significant association between the tender methods commonly applied by the schools and variation in the level of procurement-related expenditure.

Still on the same aspect, key informants cited request for quotations and open tender, as the common methods applied by schools to procure goods, services,

and works. Of the two methods, request for quotations was applied more because of its simplicity in terms of less paperwork and less time, as well as cost-effectiveness. Nonetheless, the method was faulted for lacking competition and safeguards against inflation of prices, which often led to bloated expenditure, and in some instances, budget overruns.

4.5.5.2 Frequency of open tendering and variation in expenditure

Section 91(1) of the *Procurement Act, 2015* prescribes open tendering method as the first choice, which should be prioritised by all public procuring entities (Government of Kenya, 2015). In this study, up to 27 (77.1%) participants stated that open tendering method was commonly applied in their schools. Analysis of the relationship between the Frequency of open tendering and variation in the level of procurement-related expenditure obtained a correlation coefficient of -0.519 and a p -value of 0.001, which suggests up to 99% chance that the two variables were negatively correlated. The results imply that frequent use of open tendering method was likely to reduce procurement-related expenditure, which signifies improvement in financial discipline standards and expenditure management. Key informants applauded open tendering method for offering the most realistic prices for goods, services and works; as well as providing opportunity for the best technical expertise; thus, ensuring that schools get value for money. Besides, open tendering method enabled schools to manage procurement-related expenditure by eliminating opportunities for malpractices such as favouritism, tender splitting, and price inflation.

4.5.6 Relationship between Tender Splitting and Expenditure Management

Section 6(1) of the *Procurement Act, 2005*, read together with Section 26(3) (b) and Section 30 (1) of the same *Act*, requires all procuring entities to undertake procurement activities in accordance with the threshold matrix set out in the First Schedule of the *Procurement Regulations, 2006* (Government of Kenya, 2010; 2006). On the same note Section 54(1) of the *Procurement Act, 2015* explicitly prohibits procuring entities from structuring a tender into two or more sub-tenders to avoid threshold provisions and the right procurement procedures. Based on the legal and policy background, this study captured information on three aspects, including maximum threshold, frequency of tender splitting, as well as inflation of prices. The following sub-sections detail the findings.

4.5.6.1 Maximum threshold

Maximum threshold for public secondary schools are set in the First Schedule of the *Procurement Regulations, 2006* under ‘Category C’ procuring entities. The threshold matrix reveals that maximum threshold varies with tender methods applied, as well as the category of procuring entities. Knowledge of maximum threshold for any procuring entity is important for ensuring adherence to legal and policy provisions. In this study, participants were requested to indicate maximum thresholds, permitted by *Procurement Regulations, 2006* for their schools. The idea was to determine if there was any significant relationship between reported maximum thresholds and variation in the level of procurement-related expenditure.

The results show that the reported maximum threshold ranged between KES 100,000 and KES 800,000. More specifically, schools that experienced small variation in the level of procurement-related expenditure reported a mean threshold of KES 456,250 [95% confidence interval (CI) for mean = 398,074-514,425]. Those that reported average variation in expenditure had a mean threshold of KES 464,286 (95% CI for mean = 337,044-591,527); while those that experienced big variation reported a mean threshold of KES 500,000 (95% CI for mean = 375,307-630,241). However, the analysis revealed lack of a significant variation among the three categories of schools regarding maximum threshold ($F_{(2, 32)} = 0.191$ & p -value = 0.827). Furthermore, the analysis obtained a correlation coefficient of -0.063 & p -value of 0.720, which suggests that there was no significant correlation between maximum threshold and variation in the level of procurement-related expenditure.

4.5.6.2 Frequency of tender splitting

In relation to the stated maximum thresholds, participants were asked to indicate the frequency with which tenders were structured into two or more sub-tenders to sidestep threshold provisions and procurement procedures. The results, which are presented in Figure 4.9, show that tender splitting was an ‘occasional’ practice in the schools, according to 16 (45.7%) participants. This group included 15 (62.5%) participants whose schools recorded small variation in the level of procurement-related expenditure and 1 (14.3%) whose school had an average variation in expenditure. Nevertheless, 13 (37.1%) participants indicated that tender splitting ‘never’ occurred in their school. This group included 4 (16.7%) participants whose schools experienced small variation in expenditure, 5 (71.4%)

whose schools reported average variation and 4 (100.0%) who indicated big variation in expenditure.

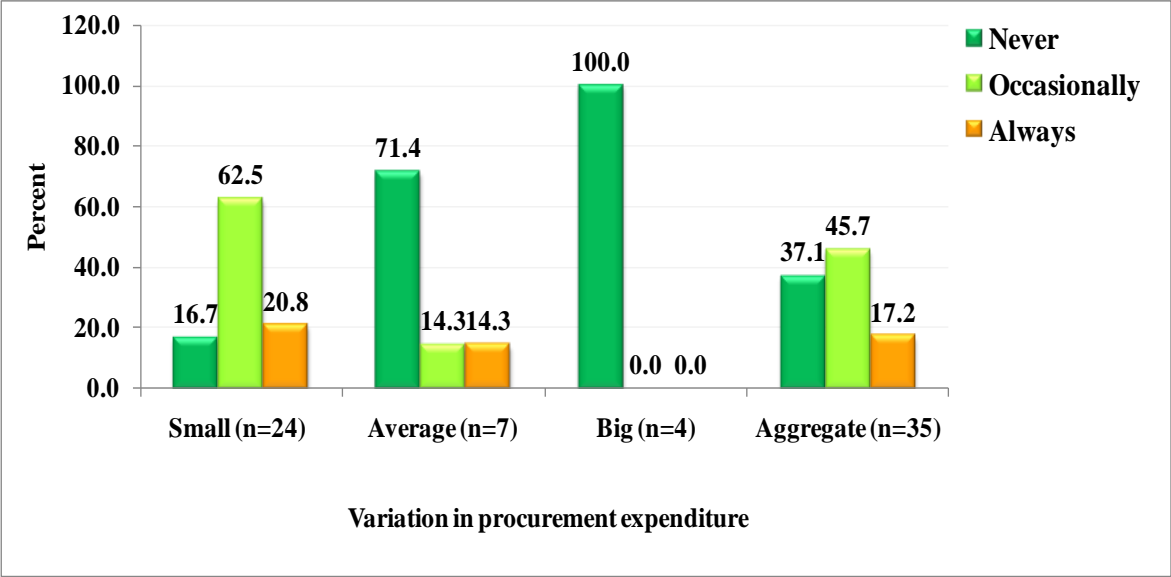


Figure 4.9: Frequency of tender splitting.

Based on the cross-tabulation results, the analysis obtained a computed χ^2 value of 14.910, with 4 degrees of freedom and a ρ -value of 0.005, which is significant. The results suggest up to 99% chance that the frequency of tender splitting significantly associated with variation in the level of procurement-related expenditure; which implies that tender splitting was likely to influence variation on procurement-related expenditure and financial discipline standards in public secondary schools. Furthermore, the analysis obtained a Pearson’s Correlation Coefficient of 0.601 and a ρ -value of 0.000, which is significant; thus suggesting up to 99% chance that the frequency of tender splitting significantly and correlated with variation in the level of procurement-related expenditure. In this regard, schools practising tender splitting consistently experienced a proportionate

increment in procurement-related expenditure, which suggests weak financial discipline standards.

On their part, key informants confirmed that tactical splitting of tenders into small pieces for unilateral approval by accounting officers was a common malpractice in public secondary schools. As noted by participants, tender splitting was used by some accounting officers to award tenders to friends and relatives, most of whom did not have necessary technical expertise. In this regard, tender splitting undermined the effective management of procurement-related expenditure by preventing schools from realising value for money, as well as opening loopholes for loss of resources through price inflation.

4.5.6.3 Measures to curb inflation of prices and ensure quality standards

Section 54 (3) and (4) of the *Procurement Act, 2015*, requires public entities to procure standard goods, services and works at prevailing real market prices; and that unreasonable inflation of prices by bidders, in collusion with some public officers, is a punishable offence. Based on the provisions of this Section, all procuring entities are required to institute appropriate measures to ensure that goods, services, and works are procured at standard market rates. In this study, participants were requested to indicate measures put in place by their tender committees to curb inflation of prices and to ensure that goods, services, and works meet quality standards.

The results summarised in Table 4.21 show that tender committees controlled inflation of prices by conducting own market surveys before initiating tendering processes, as stated by 26 (74.3%) participants. This enabled the committees to have realistic benchmarks against which to compare prices quoted by bidders, according to 6 (17.1%) participants. Besides, 5 (14.3%) participants indicated that tender committees specified price guides in tender documents to regulate prices quoted by bidders. Still on the same aspect, key informants associated inflation of prices with distended expenditure and budget overruns, which undermined effective management of procurement-related expenditure.

Table 4.21: Measures to curb inflation and ensure quality standards

Measures to curb inflation of prices	Frequency	Percent of total frequency	Percent of sample size (n)
Adheres to price indices provided by treasury	3	7.3	8.6
Compares actual prices with bidders' quotations	6	14.6	17.1
Conducts own market surveys	26	63.4	74.3
Specifies price ranges in tender documents	5	12.2	14.3
No measures exist	1	2.4	2.9
Total frequency	41	100.0	117.1
Sample size (n)	35		
Measures to ensure quality standards			
Counter-checked with samples provided	5	12.2	14.3
Inspected and certified by a committee	21	51.2	60.0
Inspected and endorsed by users	7	17.1	20.0
Involving technical experts in BoM before paying	8	19.5	22.9
Total frequency	41	100.0	117.1
Sample size (n)	35		

NB: Multiple response variables; hence, total frequency exceeds sample size (n).

The results in Table 4.21 further show that school tender committees took various measures to ensure that goods, services, and works procured meet quality standards. In this regard, 21 (60.0%) participants stated that all deliverables were

certified by specific committees; while 8 (22.9%) indicated that technical experts in BoMs were involved in verification of quality before suppliers are paid. Moreover, 7 (20.0%) participants noted that all deliverables were inspected and endorsed by heads of user departments, including matrons, chefs, boarding masters and teachers, among others, in accordance with Section 9(g) and (h) of the *Procurement Regulations, 2006*. In this regard, no payments were made without documented approval of users.

4.6 Procurement Reforms and Expenditure Management: Multivariate Analysis

The purpose of multivariate analysis was to determine the effect of each aspect of procurement reforms (independent variables) on expenditure management (dependent variable), which was measured in terms of variation in the level of procurement-related expenditure between the periods before and after reforms. This was achieved by either affirming or rejecting null hypotheses. The independent variables included frequency of tender committee meetings in a quarter year, number of tender committee members that have accessed training on procurement management, frequency of tender advertising, frequency of emergency procurement, frequency of open tendering, and frequency of tender splitting. The analysis generated two regression models. The first model incorporated independent variables only, while the second model incorporated both independent and intervening variables. The latter included learner population, school type, school category and catchment area.

The models generated three important output indicators, including standardised regression coefficients (*beta* weights), adjusted coefficient of determination (R^2) and the significance of F statistic. *Beta* weights showed the effect of each aspect of procurement reforms on expenditure management in terms of direction (either positive or negative) as well as in terms of relative importance. Whereas a negative *beta* weight suggests a reduction in procurement-related expenditure, a positive *beta* weight indicates an increment in the same. Besides, a reduction in procurement-related expenditure signifies improvement in financial discipline standards, while an increment in the same shows lack of improvement. In this study, improvement or lack of improvement of financial discipline standards is a crucial indicator of how well or bad procurement reforms had influenced the performance of public secondary schools in terms of expenditure management.

More still, the adjusted R^2 shows how well the elements of procurement reforms explain variation in the level of procurement-related expenditure; while the significance of F statistic indicates whether the effect of procurement reforms on expenditure management makes statistical sense or not. The results of multivariate analysis are presented and discussed under the following sub-sections, while detailed outputs are appended to the Thesis (Appendix VIII).

4.6.1 Standardised regression coefficients (beta weights)

The results summarised in Table 4.22 show the standardised regression coefficients, as well as related t-statistic and ρ -values for each aspect of procurement reforms. In the Table, the results appear as per the order in which

elements of procurement reforms were incorporated into the regression model. However, the presentation and interpretation in this sub-section have been organised in accordance with objectives of the study.

Table 4.22: Effect of procurement reforms on expenditure management

Independent variables	MODEL 1			MODEL 2		
	Standardised coefficients (Beta)	t	Sig.	Standardised coefficients (Beta)	t	Sig.
No. of members with training on procurement management	-0.063	-1.468	0.084*	-0.060	-1.406	0.088*
Frequency of open tendering	-0.146	-1.161	0.255	-0.068	-0.485	0.632
Frequency of tender advertising by committee	-0.300	-2.429	0.022**	-0.335	-2.639	0.014**
Number of quarterly meetings	-0.138	-1.100	0.281	-0.021	-0.153	0.880
Frequency of emergency procurement	0.352	2.596	0.015**	0.457	3.240	0.003***
Frequency of tender splitting	0.357	2.517	0.018**	0.406	2.645	0.014**

, **, * show significance at $\rho < 0.1$, $\rho < 0.05$ and $\rho < 0.01$ error margins, respectively*

4.6.1.1 Effect of tender committee meetings on expenditure management

The average number of tender committee meetings held in a quarter year generated a *beta* weight of -0.138 (t-statistic = -1.100 & ρ -value = 0.281) in model 1. When intervening variables were added into the model, the *beta* weight reduced to -0.021 (t-statistic = -0.153 & ρ -value = 0.880), as indicated in model 2. In both models, the analysis shows that the aspect caused a reduction of procurement-

related expenditure, which was not statistically significant. A reduction of procurement-related expenditure means an improvement (positive effect) in financial discipline and expenditure management. Even though the results seem to be inconsistent with the null hypothesis (H_0), postulating that *tender committee meetings has a negative effect on the management of procurement-related expenditure in public secondary schools*, the hypothesis was not rejected because the variable's effect was not statistically significant.

Key informants observed that the number of meetings held by tender committees was just as good as the agenda of such meetings and the substance of deliberations. The effectiveness of such meetings also depended on factors such as the proportion of members trained on procurement management; years of experience in managing procurement activities and tendering processes; as well as support provided by school administration. Arguably, these aspects are important for making tender committee meetings more effective in improving financial discipline and expenditure management.

4.6.1.2 Effect of the no. of trained members on expenditure management

The number of tender committee members with training on procurement management obtained a *beta* weight of -0.063 (t-statistic = -1.468 & ρ -value = 0.084) in the first model. When the intervening variables were incorporated in the model, the *beta* weight produced by the variable improved to -0.060 (t-statistic = -1.406 & ρ -value = 0.088). The results in both models suggest that the number of trained tender committee members caused a significant reduction of procurement-

related expenditure, which signified improvement (positive effect) in financial discipline and expenditure management. Based on this, the second null hypothesis (H₀₂), stating that *the number of members trained in procurement management negatively affects the management of procurement-related expenditure in public secondary schools*, was rejected for inconsistency with empirical data. Consequently, as more members of school tender committees access training, the standard of financial discipline is likely to improve and so is the quality of decisions on procurement-related expenditure.

Similarly, key informants noted that school tender committee members who had accessed training demonstrated relatively better performance in the management of procurement activities and tendering processes, than their untrained colleagues did. The training, which covered subjects such as procurement planning, procurement methods, supplier selection, bid evaluation procedure, contract award as well as inventory management, among others; was important for enhancing knowledge and skills that are essential for improving decisions on procurement-related expenditure.

4.6.1.3 Effect of tender advertising on expenditure management

The frequency of tender advertising by school tender committees obtained a *beta* weight of -0.300 (t-statistic = -2.429 & ρ -value = 0.022) in the first model. In model 2, the *beta* weight decreased to -0.335 (t-statistic = -2.629 & ρ -value = 0.014). The results in both models suggest up to 95% chance that advertisement of tenders caused a significant reduction in procurement-related expenditure, which indicates an improvement (positive effect) in financial discipline and expenditure

management. Consequently, the third null hypothesis (H₀₃), postulating that *tender advertising has a negative effect on the management of procurement-related expenditure in public secondary schools*, was rejected for being untrue. Key informants observed that advertising tenders widened the scope of choices, which in turn, enabled school tender committees to select most qualified bidders, based on technical capacity, financial capability, and competitiveness of prices. This enabled tender committees to reduce expenditure by awarding tenders to bidders with lowest prices and best technical capacity, which also enabled schools to obtain value for money invested in procurement activities and tendering processes.

Furthermore, tenders were advertised using various media, including newspapers, notice boards, as well as social forums, which varied significantly in terms of cost, which in turn, influences procurement-related expenditure. Whereas some methods required the engagement of communication agencies, others were executed by members of school tender committees themselves, sometimes assisted by support staff and community leaders, at no cost. Tender committees chose the method(s) to apply in each procurement activity, based on parameters such as tender value, desired level of technical expertise, desired amount of capitiation funding and cost, among other factors. Nonetheless, application of methods with minimal or no cost implications such as notice boards and social forums, may have contributed more to the reduction of procurement-related expenditure. Ideally, the cost of planning, designing, and communicating tender advertising should be recovered through non-refundable application fees; however, this depends on the design of such advertisements. Full cost recovery is possible where advertisements

are designed using appealing language, reasonable minimum qualifications, and appropriateness of timing. Successful recovery of costs incurred when advertising tenders is also a crucial factor that contributed to the reduction of procurement-related expenditure.

4.6.1.4 Effect of emergency procurement on expenditure management

The frequency of emergency procurement obtained a *beta* weight of 0.352 (t-statistic = 2.596 & ρ -value = 0.015) in model 1. However, this increased to 0.457 (t-statistic = 3.240 & ρ -value = 0.003), with the addition of intervening variables. In both models, the aspect caused an increment of procurement-related expenditure, which was statistically significant at 95% confidence level in model 1 and at 99% confidence level in the second model. This suggests that the addition of intervening variables in the regression model boosted the variable's effect on procurement-related expenditure. An increment of procurement-related expenditure signifies a weakness (negative effect) in the financial discipline standards and expenditure management. Consequently, the investigator failed to reject the fourth null hypothesis (H_04), stating that *emergency procurement negatively affects the management of procurement-related expenditure in public secondary schools*, for lack of sufficient study findings to warrant such action.

Key informants confirmed that emergency procurement was, indeed, a common practice in public secondary schools, which enabled administrators to source goods and services in order to address situations at hand, without following existing procurement rules and procedures. In this regard, some administrators

conveniently failed to procure goods and services in time, in order to create emergencies, during which tenders were awarded to selected suppliers and service providers without proper measures to check against inflation of prices. Emergency procurement created a leeway for over-expenditure, which in turn, contributed to the increment of procurement-related expenditure during the period under focus. Consequently, controlling the frequency of emergency procurement would be a key step towards effective management of procurement-related expenditure in the schools.

4.6.1.5 Effect of open tendering method on expenditure management

The results in model 1 show that the frequency of open tendering method generated a *beta* weight of -0.146 (t-statistic = -1.161 & ρ -value = 0.255). When intervening variables were incorporated in the model, the *beta* weight improved to -0.068 (t-statistic = -0.485 & ρ -value = 0.632). The results in both models suggest that the variable caused a reduction in procurement-related expenditure; however, the effect was not statistically significant. A reduction of procurement-related expenditure signifies improvement (positive effect) in the financial discipline standards and expenditure management. Even though the results contradicted the fifth null hypothesis (H_05), postulating that *open tendering method has a negative effect on the management of procurement-related expenditure in public secondary schools*, the investigator failed to reject the null because the variable's effect was not statistically significant, further suggesting the effect may have just occurred by chance alone.

Key informants applauded the open tendering method for giving schools the advantage of accessing most competitive prices and obtaining value for money. However, participants were quick to point out a predominant perception that the method is tedious in terms of paperwork and time, which discouraged many school tender committees from applying the method. Better still, this perception may have negatively influenced the frequency with which the method was applied, which in turn, weakened its effect on procurement-related expenditure.

4.6.1.6 Effect of tender splitting on expenditure management

The sixth aspect of procurement reforms also entered into the regression model was the *frequency of tender splitting*, for which the analysis obtained a *beta* weight of 0.357 (t-statistic = 2.517 & ρ -value = 0.018). When intervening variables were added into the regression model, the variable generated a *beta* weight of 0.406 (t-statistic = 2.645 & ρ -value = 0.014). Both models demonstrated that the frequency of tender splitting caused an increment in procurement-related expenditure, which was statistically significant at 95% confidence level. An increment of procurement-related expenditure suggests weakness (negative effect) in financial discipline standards and expenditure management. This led to non-rejection of the sixth null hypothesis (H_{06}), stating that *tender splitting has a negative effect on the management of procurement-related expenditure in public secondary schools*, for being true.

The models show that the variable's effect on procurement-related expenditure became more robust with the addition of intervening variables; further

suggesting that tender splitting was a frequent practice in public secondary schools – a premise that was confirmed by key informants. The informants cited the challenges, which emerged from tender splitting. Firstly, splitting tenders created room for suppliers to inflate prices of goods and services, which in turn, increased the cost of procurement. In this regard, the cumulative cost of all lots was often higher than the cost of similar tenders awarded to single suppliers. Secondly, even though each supplier delivered specific quantity of goods or services, there were cases of oversupply or duplication, which again led to wastage of school resources. Thirdly, managing multiple contracts was more difficult and expensive, in terms of administrative costs, time, and effort, than managing a single contract. In this regard, tender splitting caused an increment in the cost of procurement-related expenditure by increasing administrative costs.

4.6.2 Relative importance of procurement reform aspects

Relative importance of independent variables in terms of the effect caused on a dependent variable is indicated by the magnitude of *beta* weights. Whereas a negative (-) sign before a *beta* weight shows a decrement effect on the dependent variable, a positive (+) sign suggests an increment effect. The effect of independent variables is nil at 0.0, but increases away from 0.0 in both directions (\pm). The bigger the deviation from the equilibrium, the stronger the effect associated with a particular independent variable. Based on this principle, the analysis showed that among the aspects that caused a decrement in procurement-related expenditure, the frequency of tender advertising seemed to be the most important (*beta* weight = -0.355); followed by the Frequency of open tendering (*beta* weight = -0.068);

number of trained members on procurement management (*beta* weight = -0.060) and number of quarterly meetings (*beta* weight = -0.021). Among the aspects that caused an increment in procurement-related expenditure, the frequency of emergency procurement (*beta* weight = 0.457) seemed to be more important than the frequency of tender splitting (*beta* weight = 0.406).

4.6.3 Models' goodness-of-fit

The goodness-of-fit of a regression model refers to its strength in predicting a dependent variable from a set of independent and intervening variables. In multiple linear regression analysis, the model's strength is determined by the adjusted R², also known as the coefficient of determination. The results summarised in Table 4.23 show that model 1 generated an adjusted R² of 0.537, which suggest that the elements of procurement reforms that were selected for this study accounted for up to 53.7% variation of procurement-related expenditure over the reference period. This suggests that the model has a fair strength in estimating the effect of procurement reforms on the management of procurement-related expenditure in public secondary schools of Nairobi City County. The results further show that the strength of model 1 was statistically significant (ρ -value = 0.000); thus, suggesting up to 99% chance that the combined effect of the selected aspects procurement reform on expenditure management was significant.

Table 4.23: Strength and significance of the model

Models	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.786	0.618	0.537	12726.809
2	0.832	0.692	0.563	12358.996

		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7347894355.980	6	1224649059.330	7.561	0.000***
	Residual	4535206827.563	28	161971672.413		
	Total	11883101183.543	34			
2	Regression	8217226521.713	10	821722652.171	5.380	0.000***
	Residual	3665874661.830	24	152744777.576		
	Total	11883101183.543	34			

, **, * show significance at $\rho < 0.1$, $\rho < 0.05$ and $\rho < 0.01$ error margins, respectively*

When intervening variables were added into the model, the adjusted R^2 increased to 0.563, which suggest that model 2 accounted for 56.3% of variation in the level of procurement-related expenditure. Again, the results suggest that model 2 was a fair estimation of the effect of procurement reforms on expenditure management, whose strength was also statistically significant at 99% confidence level (ρ -value = 0.000). Nonetheless, up to 43.7% of variation in expenditure management was not accounted for by the elements of procurement reforms that were selected for this study. This proportion of variation may be explained by other factors not covered by this study. Consequently, similar studies, that will be conducted in the future, should examine additional elements of procurement reforms in order to generate more robust regression models, explaining the effect of procurement reforms on the management of procurement-related expenditure in public secondary schools.

4.6.4 Challenges to procurement reforms and suggestions for improvement

Participants were requested to identify challenges experienced by their schools while reforming procurement activities in order to improve expenditure

management. The results in Table 4.24 show that 12 (34.3%) participants identified perpetual meddling by school administration in the affairs of tender committees as among the top challenges. Key informants noted that in some schools, tender committees could not make certain decisions freely without being influenced by school principals. Being the accounting officers, most principals exerted their influence on decisions regarding tender evaluation, award, management, and completion, which in turn, affected procurement-related expenditure. Whereas the influence of some principals was intended to safeguard interests of their schools, participants cited incidences where some principals perpetuated personal interests in the business of school tender committees.

Another 12 (34.3%) participants mentioned inadequate training in procurement management as a key factor constraining procurement reforms in public secondary schools. Similarly, key informants identified limited awareness of *Procurement Regulations, 2006* among tender committee members and school administration. Moreover, 11 (31.5%) participants felt that procurement reforms were constrained by delayed disbursement of funds for supporting Free Day Secondary Education (FDSE), while 6 (17.1%) cited meddling by BoMs, and another 6 (17.1%) mentioned fluctuation of market prices. Other challenges identified by key informants included irregular supervisory support from MoE officers; lack of skill diversity and experience among most tender committee members; irregular auditing of school books of accounts; inadequate and untimely disbursement of funds for school operations, including procurement of goods, services and works.

Regarding suggestions for improvement, Table 4.24 show that up to 19 (54.3%) participants called for continuous training of school tender committee members to impart necessary knowledge and skills, which would go a long way in improving procurement reforms in public secondary schools. Training should include exchange visits between school tender committees to facilitate knowledge sharing and transfer of skills. On the same note, key informants emphasised the need for all tender committee members to be inducted in skills relevant for the management of procurement, including tendering processes.

Table 4.24: Challenges and suggestions for improvement

Challenges	Frequency	Percent of total frequency	Percent of sample size (n)
Meddling by Board of Management	6	9.2	17.1
Meddling by school administration	12	18.5	34.3
Market price fluctuations	6	9.2	17.1
Longstanding fees arrears	3	4.6	8.6
Lack of skill diversity in tender committee	3	4.6	8.6
Inadequate training in procurement management	12	18.5	34.3
Delay in developing procurement plans	5	7.7	14.3
Irregular supervisory support by MoE officers	6	9.2	17.1
Delayed release of FDSE funds	11	16.9	31.6
Harassment by politically-connected suppliers	1	1.5	2.9
Total frequency	65	100.0	185.9
Sample size (n)	35		

Suggestions for improvement			
Bail out schools for long-standing fees arrears	6	8.6	17.1
Improve allocations to enable schools expand facilities	3	4.3	8.6
Improve checks for managing tender process	3	4.3	8.6
Improve frequency of supervisory visits by MoE officers	8	11.4	22.9
Improve staffing to lessen workload for teachers	3	4.3	8.6
Initiate continuous training for committee members	19	27.1	54.3
Employ & deploy more procurement officers in schools	10	14.3	28.6

Bring BoM & PA members in tender committees to improve skill composition	10	14.3	28.6
Exclude teachers from school tender committees	8	11.4	22.9
Total frequency	70	100.0	200.0
Sample size (n)	35		

NB: Multiple response variables; hence, total frequency exceeds sample size (n).

More still, 10 (28.6%) participants suggested that BoM and PA members should be included in school tender committees to inject in expertise from the public and private sectors. This is likely to improve the skill mix of tender committees, relieve teachers of extra responsibilities, and ensure better management of expenditure. Key informants observed that *Procurement Regulations, 2006* excludes BoM members from direct involvement in the business of school tender committees (Second Schedule, 7). Even though BoMs are obligated by the *Basic Education Act* to oversee utilisation and management of institutional resources, their non-involvement in school tender committees creates a gap for irregularities, which may not be easy to control at final stages of contract management (Government of Kenya, 2013).

In the words of a participant, “...even though BoMs are obligated to scrutinise activities of school tender committees, their role in securing school funds is not effective because they come in late when tenders have been awarded. Cancelling contracts may attract astounding legal implications”. Regarding PA members, participants noted that they are key stakeholders in matters of school finances, as they are the ones who pay fees. Thus, involving them in decisions regarding how their money is spent, is not only a matter of logic, but also and more importantly, a fundamental right.

On the same note, some key informants suggested the need for tenders to be graded according to value, so that BoM and PA members are involved in huge tenders of KES 10 Million and above. Alternatively, the finance, procurement, and general purposes committee, created by Section 61 (2) (a) of the *Basic Education Act*, should be involved in the analysis of technical and financial proposals submitted by bidders. The two suggestions were based on the premise that existing tender committees lack capacity to manage huge and technical tenders, such as construction of school facilities.

More still, 10 (28.6%) participants emphasised need for the MoE to employ and deploy more procurement officers to take charge of procurement activities in public secondary schools. Arguably, this will be crucial for relieving teachers of extra responsibilities; thus, allowing them more time to concentrate on academic needs of their learners. Similarly, 8 (22.9%) participants suggested the need to exclude teachers from school tender committees so that they focus on their core mandate of teaching. Another 8 (22.9%) participants emphasised need for MoE to improve the frequency of supervisory visits to schools, in order to monitor performance of tender committees and provide necessary guidance. Presence of the Ministry is likely to encourage committee members to make right decisions regarding procurement-related expenditure.

In addition, key informants suggested the need for timely disbursement of funds to enable tender committees adhere to procurement plans. The initiative is

likely to reduce the frequency of emergency procurement, reduce procurement-related expenditure, and minimise loss of school resources. An additional suggestion was the need for regular auditing of the school accounts, in order to deter proliferation of personal interests, which may cause procurement-related expenditure to escalate.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter summarises the findings and draws conclusions that respond to study objectives. Also presented in the chapter are recommendations that require appropriate interventions by various stakeholders, including the Ministry of Education, PPOA and school management. Implementation of such recommendations should strengthen procurement reforms process in public secondary schools and therefore, management of procurement-related expenditure. Lastly, the chapter highlights contributions of the study, based on the findings under each objective; which is followed by recommendations for further research based on identified information gaps or limitations of the study.

5.2 Summary of the Findings

The study focused on determining the effect of procurement reforms on the management of procurement-related expenditure in public secondary schools of Nairobi City County, in order to generate information that would contribute to policy discourses, and influence expenditure management practices. The information generated by the study is also expected to stimulate relevant research that would deepen and broaden knowledge on the management of procurement-related expenditure in public secondary schools in Kenya and other developing nations. The findings have been summarised and organised in line with objectives of the study. Details are provided under the following sub-sections.

5.2.1 Frequency of tender committee meetings and expenditure management

The findings show that all school tender committees (100.0%) conducted their business through regular meetings in accordance with Section 12 of the *Procurement Act, 2005*. However, the mean number of meetings held per quarter varied significantly across the schools that experienced small, average, and big variation in the level of procurement-related expenditure. Besides, the frequency of meetings per quarter negatively correlated with variation in the level of procurement-related expenditure, which suggests that increasing the number of tender committee meetings is expected to reduce the level of procurement-related expenditure in the same measure, which is indicative of improvement in financial discipline standards and expenditure management.

In addition, the frequency of meetings held in a quarter year caused a reduction of procurement-related expenditure; however, the effect was not statistically significant. A reduction of procurement-related expenditure means an improvement (positive effect) in financial discipline, and thus, the management of procurement-related expenditure. Even though the findings seem to be inconsistent with the first null hypothesis (H_01), postulating that *tender committee meetings have a negative effect on the management of procurement-related expenditure in public secondary schools*, the null hypothesis was not rejected because the variable's effect was not statistically significant. More still, even though all school tender committees conducted their business during regular meetings, the frequency of such meetings did not have a significant effect on expenditure management. However, the quality of such meetings, in terms of the relevance of agendas vis-à-

vis procurement-related expenditure, quality of deliberations, implementation of resolutions, seems to matter more.

5.2.2 No. of trained tender committee members & expenditure management

The findings show that all tender committees had at least one member that had accessed training in procurement management, which enabled them to understand their mandate as provided for under Section 10(2) of the *Procurement Regulations, 2006*. However, the number of trained members varied from one school to another. Based on variation in the level of procurement-related expenditure, the findings reveal up to 95% chance that the three clusters of schools varied significantly in terms of the number of committee members that had accessed training in procurement management. This implies that training members of school tender committees is likely to influence financial discipline standards, and thus, the management of procurement-related expenditure. In addition, the findings reveal up to 95% chance that there was a significant positive correlation between the number of tender committee members that had accessed training in procurement management and variation in the level of procurement-related expenditure. As the number of trained committee members increases, so does the variation in the level of procurement-related expenditure.

More still, the number of trained members of tender committees caused a significant reduction of procurement-related expenditure, which signified improvement (positive effect) in financial discipline standards, and therefore, expenditure management. Based on this, the second null hypothesis (H_02), stating

that *the number of members trained in procurement management negatively affects the management of procurement-related expenditure in public secondary schools*, was rejected for inconsistency with study findings. As more members of school tender committees access training, the financial discipline standards is likely to improve and so is the quality of decisions on procurement-related expenditure. Besides, trained members of tender committees demonstrated relatively better performance in the management of procurement activities and tendering processes, than their untrained colleagues did.

Despite the significant positive effect caused by training on expenditure management, the findings show that more than 90% of school tender committee members lacked necessary skills in procurement management. Those who had accessed training were also not competent enough to undertake functions set out in procurement laws and regulations, which naturally, raises concerns regarding the quality of training provided by the Ministry of Education. Some participants described the training as basic orientation, and thus, about one-third of participants expressed dissatisfaction with skills obtained from the process.

5.2.3 Tender advertising and expenditure management

The findings show that up to two-thirds of the schools (21, 60.0%) were consistently advertising tenders using various media such as set out by Section 96 (1) and (2), as well as Section 119 (3) and (4) of the *Procurement Act, 2015* and *Guidelines for Potential Bidders, 2010*, which in turn, influenced variation in the level of procurement-related expenditure. In this regard, the findings up to reveal

95% chance that the frequency of tender advertising significantly associated with variation in the level of procurement-related expenditure. In addition, the aspect had a significant and negative correlation of fair strength with variation in the level of procurement-related expenditure; thus, suggesting that as the frequency of tender advertising increases, procurement-related expenditure tended to decrease.

Furthermore, tender advertising caused a significant reduction in procurement-related expenditure, which indicates an improvement (positive effect) in financial discipline standards and expenditure management. This led to rejection of the third null hypothesis (H_03), postulating that *tender advertising has a negative effect on the management of procurement-related expenditure in public secondary schools*, for being untrue. Advertising tenders caused a positive effect by widening the scope of choices for school tender committees, which enabled selection of most qualified bidders, based on technical capacity, financial capability, and competitiveness of prices. In this regard, tenders were awarded to bidders offering most competitive prices and best technical capacity.

Notably though, advertisement of tenders can become a significant cause for increment in procurement-related expenditure because some media such as newspapers are expensive, while others require the engagement of communication agencies. Again, the efficiency of tender advertising was constrained by lack of tender design guidelines, which are crucial for standardising and making tender advertising attractive to bidders. Full cost recovery of tender advertising is a

function of the number of bidders who actually submit their tender applications and pay the non-refundable application fees.

5.2.4 Emergency procurement and expenditure management

The study found that about sixty percent of the schools (22, 62.9%) had developed and implemented plans for procuring goods, services and works, in order to suppress emergency procurement, in accordance with provisions of Sections 103 (2) (b) of the *Procurement Act, 2015*. The findings show that emergency procurement was practised ‘occasionally’ in about 60.0% of the schools, but ‘never’ practiced in about 37.1% of the institutions. Bivariate analysis revealed that the association between the frequency of emergency procurement in schools and variation in the level of procurement-related expenditure was significant. The analysis also showed that the aspect correlated significantly with variation in the level of procurement-related expenditure. Thus, an increment in the frequency of emergency procurement by one unit was likely to influence an increment in procurement-related expenditure by the same margin.

Furthermore, the frequency of emergency procurement caused a significant increment of procurement-related expenditure, which signals weakness (negative effect) in financial discipline standards, and thus, the management of procurement-related expenditure. This prompted non-rejection of the fourth null hypothesis (H₀₄), stating that *emergency procurement negatively affects the management of procurement-related expenditure in public secondary schools*, due to lack of sufficient empirical evidence to warrant its rejection.

Even though a few cases of emergency procurement were genuinely lawful, others were fraudulently crafted duty-bearers to facilitate siphoning of public funds. Fraudulent emergency procurement were triggered by actions such as delayed assessment of needs and adoption of necessary precautionary measures; as well as untimely development of plans for procuring necessary items, or delayed implementation of such. Regardless of the underlying factors, emergency procurement was associated with over-quotation of prices, which in turn, inflated procurement-related expenditure.

5.2.5 Effect of open tendering method on expenditure management

The findings show school tender committees applied various tender methods as set out by Section 8 of the *Procurement Manual, 2009*. Open tendering is among the methods that were commonly applied by about three-quarters of the schools (27, 77.1%), in line with provisions of Section 96(1) of the *Procurement Act, 2015*. Bivariate analysis revealed a negative correlation of fair strength between the frequency of open tendering method and variation in the level of procurement-related expenditure, which significant at 99% confidence level. The findings imply that frequent use of open tendering method was likely to reduce procurement-related expenditure.

Multivariate findings show that the frequency of open tendering method reduced procurement-related expenditure, which signifies improvement (positive effect) on financial discipline standards, and therefore, the management of procurement-related expenditure. However, the effect was not statistically

significant, which again, prompted non-rejection of the fifth null hypothesis (H_{05}), postulating that *open tendering method has a negative effect on the management of procurement-related expenditure in public secondary schools*, further suggesting the effect may have just occurred by chance alone.

Even though open tendering method was applauded for giving schools the advantage of accessing most competitive prices and best technical expertise, as well as obtaining value for money, participants amplified its tediousness in terms of paperwork and time requirement, which discouraged consistent application by tender committees and weakened its effect on procurement-related expenditure.

5.2.6 Effect of tender splitting on expenditure management

The findings show that tender splitting ‘never’ occurred in 13 (37.1%) schools, as required by Section 30(1) of the *Procurement Regulations, 2006* which explicitly prohibits all public procuring entities from structuring a tender into two or more sub-tenders to avoid threshold provisions and the right procurement procedures. The results suggest that more than two-thirds of schools (62.9%) were yet to comply with procurement laws and regulations regarding tender splitting. Nonetheless, bivariate analysis show that the frequency of tender splitting significantly associated with variation in the level of procurement-related expenditure. Besides, the analysis revealed a strong and positive correlation between the aspect and variation in the level of procurement-related expenditure, which was significant at 99% confidence level. Consequently, schools practising tender splitting consistently experienced a relatively higher increment in

procurement-related expenditure than those that never split their tenders into lots to avoid threshold provisions.

Furthermore, the frequency of tender splitting increased the level of procurement-related expenditure, and the increment was statistically significant at 95% confidence level. Again, an increment of procurement-related expenditure suggests weakness (negative effect) in financial discipline standards and expenditure management, which prompted non-rejection of the sixth null hypothesis (H_06), stating that *tender splitting has a negative effect on the management of procurement-related expenditure in public secondary schools*, for being true.

Participants pointed out that tender splitting was commonly applied by some accounting officers to award tenders to friends and relatives, most of whom did not have necessary technical expertise. However, splitting tenders was associated with various challenges, including inflation of prices by suppliers, which in turn, increased the cumulative cost of procurement; oversupply of some items or duplication, which again led to wastage of school resources; as well as high administrative costs, time, and effort. In this regard, tender splitting caused an increment in the cost of procurement-related expenditure by increasing administrative costs.

5.2.7 Relative importance of procurement reform aspects and models' goodness-of-fit

Among the elements that caused a decrement in the level of procurement-related expenditure, tender advertising seemed to be the most important; followed by open tendering; number of members with training in procurement management and average number of tender committee meetings per quarter year. Among those that caused an increase in the level of procurement-related expenditure, emergency procurement seemed to be stronger than tender splitting.

Regarding model's goodness-of-fit, the findings show that Model 1 obtained an adjusted R^2 of 0.537, which suggest that the elements of procurement reforms that were included in the analysis explained up to 53.7% variation of in the level of procurement-related expenditure over the reference period (p -value = 0.000). The addition of intervening variables into the model increased the adjusted R^2 to 0.563. This suggests that the second model accounted for 56.3% of variation in the level of procurement-related expenditure. The findings suggest that the regression model was fairly strong in estimating the effect of procurement reforms on the management of procurement-related expenditure; which was also statistically significant at 99% confidence level (p -value = 0.000). Nonetheless, the model failed to explain up to 43.7% of variation in procurement-related expenditure in public secondary schools. This is an area of weakness, which future studies should explore in order to generate stronger regression models, explaining the effect of procurement reforms on the management of procurement-related expenditure in public secondary schools in any geographical context.

5.3 Conclusions

Conclusions have been drawn from the findings of the study; and have been presented under various themes, in line with objectives of the study.

5.3.1 Tender committee meetings and expenditure management

This study brought out the importance of meetings conducted by tender committees, in relation to improvement of financial discipline standards and expenditure management. More specifically, the findings demonstrated that an increasing frequency of such meetings was likely to cause a reduction in procurement-related expenditure, which signifies improvement in financial discipline standards and expenditure management. Even though the variable's effect was not statistically significant, the findings suggest that conducting regular meetings is important for reviewing performance of past decisions, planning future procurement activities, as well as delivering new knowledge and information on procurement reforms in schools. Where the process is objective, decisions made in meetings are usually superior to ones made by individuals, because meetings have the advantage of multiple brainpower.

Nonetheless, the frequency of meetings held by tender committees within a particular period remains crucial for expenditure management in schools. Whereas too many meetings may be costly and perpetuate boredom among tender committee members, too few meetings may create opportunities for unilateral decisions and manifestation of procurement malpractices. The challenge is how to make meetings of school tender committees more productive and less costly. This may be achieved

through appropriate training of school tender committees on how to plan, organise, and execute productive meetings; sensitisation of members regarding objectives of procurement reforms, as well as scaling up support provided by school administration. Poorly planned and organised meetings may not add value, and may eventually turn out to be a waste of time and resources. In view of this, improving the quality of meetings held by school tender committees should be prioritised by stakeholders in order to make them more effective in improving financial discipline standards and expenditure management.

5.3.2 No. of trained tender committee members & expenditure management

The analysis shows that the number of trained members of tender committees caused a significant reduction of procurement-related expenditure, which signified improvement in financial discipline standards and expenditure management. This is a demonstration that enhancing the capacity of school tender committee members is not only a fundamental step towards improvement of expenditure management, but also a central pillar in reforming procurement activities in public procuring entities. In view of this, training more members of school tender committees remains crucial for effective management of expenditure in public secondary schools.

Notably though, only about 6% of school tender committee members had accessed some training on procurement management; which however, was described as basic orientation. In this regard, about one-third of participants expressed dissatisfaction with the level of knowledge and skills possessed by

members of tender committees. Given that the committees consisted of teachers and non-teaching staff, there was an acute shortage of technical capacity to manage huge tenders, as well as control the quality of works and related services. In view of this, building the capacity of school tender committees remains a crucial pillar for the implementation of procurement reforms in schools, as well as management of expenditure, which may be achieved through multiple short- and long-term strategies, depending on availability of resources.

Some of the strategies emerging from the study include, developing and rolling out a comprehensive training programme for tender committee members all over the country; as well as improving composition of school tender committees by injecting in technical skills such as architecture and quantity survey. Other strategies include involving BoM and PA members in the management of tenders worth KES 10 Million or more; improving communication and dissemination of relevant information on procurement reforms to public schools; as well as recruiting and deploying qualified procurement staff to enhance efficiency of procurement systems in schools.

5.3.3 Tender advertising and expenditure management

The frequency of tender advertising had the strongest positive effect on the management of procurement-related expenditure in public secondary schools. In this regard, schools advertising their tenders always were likely to be more efficient in expenditure management than those that advertised tenders inconsistently or did not advertise tenders at all. Ensuring consistency in advertising tenders is likely to

help many public secondary schools to get value for money by avoiding substandard goods and services, poor workmanship and inflated costs, which constrain effective management of procurement-related expenditure.

The media through which tenders are advertised is of great importance to procuring entities, particularly in terms of cost implications. In this study, the findings hinted that advertisement of tenders can become a significant cause for increment in procurement-related expenditure. Hence, tender committees should choose appropriate media for advertising tenders, based on factors such as tender value, desired level of technical expertise, and amount of capitation funding, among others. Even where costly media such as newspapers are used, care should be taken to ensure full cost recovery, which may be achieved by planning, designing, and communicating advertisements in the most attractive way possible. Even though full cost recovery is possible where advertisements attract many bidders, the process may be complicated by lack of standard guidelines for designing tender advertising. Thus, developing and disseminating such guidelines is likely to make tender advertising more attractive to bidders and thus, self-financing; thereby, reduce procurement-related expenditure.

5.3.4 Emergency procurement and expenditure management

Among the aspects causing a negative effect on expenditure management, the frequency of emergency procurement ranked first. Schools practicing emergency procurement always were likely to have a more bloated procurement-related expenditure than those that never embraced the practice. The greatest

weakness associated with emergency procurement is that it creates room for tender committees to procure without adequate measures for quality control and price comparisons. Thus, emergency procurement are prone to over-quoted prices, which in turn, inflate procurement-related expenditure.

The frequency of emergency procurement is a function of various factors, including deliberate efforts of duty-bearers to fulfil personal interests; which manifest through delayed assessment of needs and adoption of necessary precautionary measures; as well as delayed preparation of procurement plans. Reducing the frequency of emergency procurement is vital for effective management of procurement-related expenditure in public secondary schools, which can only be achieved through consistent planning of procurement activities.

The frequency of emergency procurement also depends on external factors such as delayed disbursement of FDSE funds by the Ministry of Education, in collaboration with the National Treasury. Consequently, it remains important that funds should be disbursed in time to enable school tender committees plan procurement activities. Timely disbursement of funds will enable tender committees avoid situations where procurement activities have to be executed in a rush; as well as identify financing gaps and measures to cope with such.

5.3.5 Effect of open tendering method on expenditure management

Frequency of open tendering method was the second most important aspect of procurement reforms that caused a positive effect on expenditure management.

Open tendering method is advantageous to procuring entities by providing: most realistic prices and best technical expertise; as well as eliminating opportunities for favouritism, tender splitting, and price inflation. Consequently, public secondary schools that applied open tendering method consistently were more likely to reduce procurement-related expenditure than those that never applied the method. Going forward, consistent application of open tendering method remains crucial for effective management of procurement-related expenditure. However, process requires support through training of school tender committee members, which should weaken misperceptions related to paperwork and time requirements.

5.3.6 Effect of tender splitting on expenditure management

The frequency of tender splitting ranked second among the elements of procurement reforms causing a negative effect on expenditure management. In this regard, splitting tenders affected expenditure by opening loopholes for inflation of prices by suppliers, which in turn, increased the cumulative cost of procurement; oversupply of some items, which led to wastage of school resources; as well as high administrative costs. Even though the practice is strategically applied in the management of big tenders, with a view to spreading risks of supplier default, this study revealed that tender splitting was often used by some accounting officers to award tenders to friends and relatives, albeit with no guidelines to ensure proper usage. Consequently, schools in which tender splitting was common, spent more resources on the procurement of goods, services and works than those that never embraced the practice.

In view of the above, tender splitting remains both a strategic measure against risks of supplier default, as well as a critical aspect that will negatively affect the management of procurement-related expenditure in public secondary schools, if wrongly applied. Stakeholders need to come up with appropriate policies to guide the application of tender splitting; thereby, make it a strategy for boosting, rather than stifling procurement reforms in public secondary schools. Equally important, is the need for regular supervision of procurement activities in schools, regular auditing of school accounts, and decentralisation of PPOA structures to county and sub-county levels.

5.4 Recommendations

The recommendations, which have been derived from the findings and conclusions, target various institutions, including the MoE, PPOA, and the management of public secondary schools in Nairobi City County.

5.4.1 Tender committee meetings and expenditure management

1. Sensitise and train school tender committees on how to plan, focus the agenda, organise, and execute productive meetings. This may be achieved through periodical seminars for school tender committees at the county level, which may be cascaded to sub-counties and wards.

5.4.2 No. of trained tender committee members & expenditure management

1. Develop a comprehensive training programme for school tender committees in the County, incorporating skill needs that participants identified, including tendering

procedures, financial management, as well as procurement laws and policies, among others.

2. Improve composition of school tender committees by injecting in technical skills such as architecture and quantity survey, which are crucial for controlling the quality of works and services; thus, ensuring that schools obtain value for money.
3. Structure tenders according to value; thus, involve BoM and PA members in the management of big tenders worth KES 10 Million or more, while small tenders below the suggested amount may be managed by school tender committees.
4. Improve dissemination of relevant information on procurement reforms to public schools; through print and electronic media for continuous education of tender committee members.
5. Recruit and deploy qualified procurement staff to enhance efficiency of procurement practices in schools and ensure continuous capacity building of tender committees.

5.4.3 Tender advertising and expenditure management

1. Sensitise school tender committees in tender advertising to help public secondary schools obtain value for money by avoiding substandard goods and services, as well as poor workmanship and inflated costs.

2. Develop and disseminate guidelines for designing tender advertisements in order to make them more attractive to bidders and thus, make tender advertising self-financing through cost-recovery.

5.4.4 Emergency procurement and expenditure management

1. Sensitise and train school tender committees on procurement planning and emergency procurement, particularly focusing on legal provisions, consequences of misapplication, and the importance of procurement planning.
2. Disburse funds for FDSE in time to enable tender committees implement procurement plans; thereby, avoid situations that warrant emergency procurement.

5.4.5 Effect of open tendering method on expenditure management

1. Sensitise school tender committees about the importance of applying the open tendering method as required by law, with a view to weakening misperceptions related to the amount of paperwork and time involved.

5.4.6 Effect of tender splitting on expenditure management

1. Develop appropriate policies to guide the application of tender splitting; thereby, make it a strategy for boosting, rather than stifling procurement reforms in public secondary schools.
2. Encourage regular supervision of procurement activities in schools by the MoE and PPOA officers in order to optimise adherence to procurement regulations.

3. Ensure regular auditing of school accounts to monitor and identify procurement malpractices such as tender splitting, as well as consistent implementation of audit recommendations to improve procurement practices.
4. Decentralise PPOA to the county level to avail oversight services to public secondary schools, and discourage malpractices such as tender splitting.

5.5 Contributions of the Study to Knowledge

Objective	Contribution
i. Establish the effect of tender committee meetings on the management of procurement-related expenditure in public secondary schools;	The study contributes by documenting that all school tender committees were complying with Section 12 of the <i>Procurement Act, 2005</i> by holding meetings to conduct their business. Besides, the study reveals that increasing the frequency of tender committee meetings is likely to cause a proportionate reduction in procurement-related expenditure.
ii. Determine how the number of members trained in procurement management affects the management of procurement-related expenditure in public secondary schools;	The study reveals that even though procurement reforms introduced new ways of conducting procurement activities, most tender committee members were not equipped with necessary skills to facilitate compliance with procurement regulations. The study contributes by further revealing that training more members of school tender

	<p>committees is likely to reduce of procurement-related expenditure significantly. The quality of training provided by the Ministry of Education is questionable because even trained members of the committees were not competent enough to undertake functions set out in the procurement laws and regulations.</p>
<p>iii. Examine how tender advertising affects the management of procurement-related expenditure in public secondary schools;</p>	<p>The study contributes by revealing that about two-thirds of the schools had complied with procurement laws and regulations by consistently advertising tenders using various media such as set out by Sections 96 and 119 of the <i>Procurement Act, 2015</i>. It further shows that advertising tenders is likely to cause a positive effect by widening the scope of choices for school tender committees, in terms of technical capacity, financial capability, and competitiveness of prices.</p>
<p>iv. Assess how emergency procurement affects the management of procurement-related expenditure in public secondary schools;</p>	<p>The study contributes by demonstrating that about two-thirds of the schools were complying with procurement laws and regulations by developing and applying procurement plans, in accordance with Section 103 (2) (b) of the <i>Procurement Act, 2015</i>. The study also contributes by showing that adherence to procurement plans is likely to reduce the prevalence of emergency procurement, which in turn, is likely to reduce procurement-related expenditure by preventing wastage of resources.</p>

<p>v. Establish how open tendering affects the management of procurement-related expenditure in public secondary schools; and</p>	<p>The study contributes by revealing that about three-quarters of the schools were complying with procurement laws and regulations by regularly applying open tendering method in line with provisions of Section 96(1) of the <i>Procurement Act, 2015</i>. In addition, the study contributes by indicating that applying open tendering method regularly is likely to reduce procurement-related expenditure.</p>
<p>vi. Determine the effect of tender splitting on the management of procurement-related expenditure in public secondary schools.</p>	<p>The study contributes by indicating that more than two-thirds of schools were yet to comply with procurement laws and regulations regarding tender splitting, which is prohibited by Section 30(1) of the <i>Procurement Regulations, 2006</i>. The study further reveals that schools practising tender splitting consistently are likely to experience relatively higher levels of procurement-related expenditure than those that never split their tenders into lots to avoid threshold provisions.</p>

5.6 Recommendations for Further Research

The regression model generated by the study accounted for 56.3% of variation in the level of procurement-related expenditure in public secondary schools. This implies that up to 43.7% of such variation may be explained by other elements of procurement reforms not included in the conceptual framework that

was applied by this study. This further implies that the regression model generated by this study was not a strong estimation, but rather a fair estimation, of the effect of procurement reforms on expenditure management in the schools. This gap justifies further research, with better designs and more independent variables, to generate models that will provide more robust estimation of the causal relationship between procurement reforms and expenditure management.

Secondly, this study examined the effect of procurement reforms on the management of procurement-related expenditure in public secondary schools in Nairobi City County. Its scope did not cover other tiers of the education sector; hence, it will be fallacious to assume that the findings of the study provide an accurate picture of the entire education sector. This precipitates the need for future studies to examine the relationship between procurement reforms and expenditure management in the primary, college and university sub-sectors, because the experiences may be different. Again, future studies should be scaled-up to cover the entire sector and country to generate information that would effectively support national-level policy, legislative and programmatic interventions for strengthening procurement reforms and expenditure management.

REFERENCES

- Aketch J.M. (2005). *Development partners and governance of public procurement in Kenya: Enhancing democracy in the administration of aid*. New York: Institute of International Justice, New York University School of Law.
- Aketch, J. and Karanja, P. (2013). 'Factors Influencing Procurement Performance in Constituency Development Fund (CDF): Case of CDF Use in Makadara Constituency'. *International Journal of Social Science & Entrepreneurship*, 1(2): 41-55.
- Ambe, I.M. (2016). 'Public Procurement Trends and Developments in South Africa'. *Research Journal of Business and Management*, 3(3), pp. 277-290.
- Angokho, A.C., Juma, S. & Musienga, D. (2014). Challenges in achieving transparency and accountability in public procurement procedures in secondary schools in Sabatia Sub-County, Vihiga County, Kenya. *International Journal of Innovative Research & Development*, 3(5), 324-330.
- Anvuur, A., Kumaraswamy, M. & Male, S. (2006). *Taking forward public procurement reforms in Ghana*. Paper presented during the International Symposium on Construction in Developing Economies, held from 18th to 20th, January 2006, in Santiago Chile.
- Apiyo, R.M. and Mburu, D.K. (2014). 'Factors Affecting Procurement Planning in County Governments in Kenya: A Case Study of Nairobi City County'. *International Journal of Economics, Commerce and Management*, 2(11), pp. 1-34.
- Asian Development Bank [AsDB] (2012). *Indonesia: Strengthening National Public Procurement Process*. Jakarta: AsDB.
- Audit Scotland (2009). *Improving public sector purchasing*. Edinburgh: Audit Scotland.
- Basheka, B. (2006). Derivations from applicable procurement and disposals method. *Procurement News*, 2(3), 44-45.
- Basheka, B. C., & Bisangabasaija, E. (2010). Determinants of unethical public procurement in local government systems of Uganda: A case study. *International Journal Procurement Management*, 3(1), 91-104.
- Berger, A.N. and Humphrey, D.B. (2007). 'Efficiency of Financial Institutions:

International Survey and Directions for Future Research'. *European Journal of Operational Research*, 98(2), pp. 175-212.

- Best, J.W. & Khan, J.V. (2004). *Research in education* (7th ed). New Delhi: Prentice Hall of India.
- Body, G. (2010). *Capital investment in schools*. Cardiff: Wales Audit Office.
- Brammer, S. & Walker, H. (2007). *Sustainable procurement practice in the public sector: An international comparative study*. London: The University of Bath.
- Bryman, A., & Cramer, D. (1997). *Quantitative Data Analysis with SPSS for Windows: a guide for social scientists*. London: Routledge.
- Buehler, M. (2012). *Public procurement reform in Indonesian provinces and sub-districts: The historical institutional context and lessons learned from analytical work*. Washington, DC: World Bank.
- Byatt, I. (2011). *Devolution of public procurement management responsibility to cost centres in Northern Ireland*. DTLR/LGA, Belfast. Retrieved on 23/8/2018 from http://www.sps-consultancy.co.uk/Library/pdf/byatt_report.pdf
- County Government of Nairobi City (2014). *County Integrated Development Plan 2013-2018*. Nairobi: County Government of Nairobi City.
- County Government of Nairobi City (2017). *County Integrated Development Plan 2018-2022*. Nairobi: County Government of Nairobi City.
- Department of Treasury & Finance [DTF] (2006). *Public procurement reforms in West Australia*. Canberra: DTF.
- Department of Treasury & Finance [DTF] (2012). *Procurement reforms in West Australia*. Canberra: DTF.
- Dza, M., Fisher, R. and Gapp, R. (2013). 'Procurement Reforms in Africa: The Strides, Challenges, and Improvement Opportunities'. *Public Administration Research*, 2(3), pp. 49-57.
- Embeli, S.J, Iravo, M.A., Biraori, O.E., & Wamalwa, W.R. (2014). Factors affecting the use of Public Procurement and Disposal Act of 2005 in public secondary schools - a survey study of Trans-Nzoia County in Kenya. *International Journal of Recent Research in Commerce Economics and Management*, 1(3), 29-38.

- European Commission [EC] (2016). EU Public Procurement reform: Less bureaucracy, higher efficiency: An overview of the new EU procurement and concession. Brussels: EC.
- European Union [EU] (2015). Public Procurement- Study on Administrative Capacity in the EU: Hungary Country Profile. Brussels: EU.
- European Union (2017). *European Directives on Procurement and Concessions Status of Transposition Process*. Accessed on 12/10/2018 from http://www.linklaters.com/pdfs/mkt/paris/Transposition_of_European_Directives_on_Procurement_and_Concessions.pdf
- Fagan, J. (2005). *Transparency through electronic procurement: Canada's approach*. Ottawa: Inter-American Development Bank.
- Frizzo, H. & Oliveira, P. (2014). *Public procurement in Brazil: Overview*. Rio-de-Janeiro: Trench, Rossi e Watanabe Advogados.
- Garson, G.D. (2009). 'Reliability Analysis'. *Journal of Modern Applied Statistical Methods*,6(1), pp. 21-29.
- Gelderman, J.C., Ghijsen, W.P., & Brugman, J. M. (2006). Public procurement and EU tendering directives-explaining non-compliance. *International Journal of Public Sector Management*, 19(7), 702-714.
- Gliner, J. G., Morgan, G. A. & Leech, N. L. (2009). *Research methods in applied settings: An integrated approach to design and analysis (2nd ed)*. New York: Routledge.
- Government of Kenya (2006). *The public procurement and disposal regulations, 2006*. Nairobi: National Council for Law Reporting.
- Government of Kenya (2010). *The public procurement and disposal act: Chapter 412C*. Nairobi: National Council for Law Reporting.
- Government of Kenya (2013). *Basic Education Act*. Nairobi: National Council for Law Reporting.
- Government of Kenya (2015). *The Public Procurement and Asset Disposal Act, 2015*. Nairobi: Government Printer.
- Government of Tanzania (2015). *Progress in Public Procurement Reform in Tanzania: A Pilot Joint Review by the HOAP Group*. Dar-es-Salaam: Public Procurement Regulatory Authority.
- Himmie, E. L. (2010). *The Benefits of Effective Procurement Planning*. Retrieved

on 23/8/2018 from <http://goxi.org/profile/HimmieEugeneLangford.html>

Houlden, J. and Jackson, C. (2014). *Public Procurement in UK (England and Wales): Overview*. Practical Law, Multi-Jurisdictional Guide 2014/15. Global.practocallaw.com/8-525-0631.

Hunja, R. R. (2003). *Obstacles to Public Procurement Reform in Developing Countries*. Cape Town: Kluwer Law International.

Hussey, J. and Hussey, R. (1997). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. Basingstoke: Macmillan.

Institute of Policy Analysis & Research [IPAR] (2007). *Making public secondary education affordable*, Occasional publication issue 3. Nairobi: IPAR.

Inter-American Development Bank [IDB] (2014). *Efficiency and Transparency in the Public Sector. Advances in Public Procurement in Latin America and the Caribbean 2002–2012*. Rio de Janeiro: IDB.

Jones, D.S. (2007). 'Public Procurement in Southeast Asia: Challenge and Reform'. *Journal of Public Procurement*, 7(1), pp. 3-33.

Jones, D.S. (2014). *NSW Government: Procurement case studies*. Sydney: NSW Government.

Karp, J. (2012). *Best practices: Procurement reforms in public schools*. Retrieved from <http://www.asbointl.org>

Kavula, M.J., Kalai, J.M. and Migosi, J. (2014). 'Determinants of implementation of public procurement regulations in Kenya's secondary schools'. *International Journal of Educational Research and Reviews*, 2(1), pp. 009-016.

Kavuva, B. and Ngugi, K. (2014). 'Determinants of Procurement Performance of Rural Electrification'. *European Journal of Business Management*, 1(11), 361-377.

Kenya Institute of Public Policy Research & Analysis [KIPPRA] (2006). *Public procurement policy in Kenya: The need for a coherent policy framework. Policy Brief, No. 3/2006*.

Kenya Institute of Public Policy Research & Analysis [KIPPRA] (2005). *A review of the 2004/05 budget: Special report*. Nairobi: KIPPRA.

Komakech, R.A. & Machyo, J. (2015). *Public Procurement Reforms: A Disaster*

for Public Secondary Schools in Uganda: Paper presented at the International Conference on Good Governance and Service Delivery in Developing Economies, held from 24th to 28th August, 2015 in Kampala, Uganda.

Kucharsky, J. (2009). Procurement in Brazil: Electronic procurement as anti-corruption reform. *The International Journal of Policy Solutions*, 10, 1-14.

Lynch, J. (2014). *Procurement Planning and the Procurement Plan: Why are they Important?* Retrieved on 23/8/2018 from <http://www.procurementclassroom.com/procurementplanning-and-the-procurement-plan-why-are-they-important/> .

Mahmood, S.A.I. (2010). Public procurement and corruption in Bangladesh: Confronting the challenges and opportunities. *Journal of Public Administration and Policy Research*, 2(6), 103-111.

Maliganya, C.E. (2015). *The next age of public procurement reforms in Tanzania: looking for the best value for money*. Washington, DC: The George Washington University.

Mamiro, R.G. (2010). *Value for Money: The Limping Pillar in Public Procurement*. *Procurement Journal*, 4(5), pp. 1-8.

Ministry of Education, Kenya (2015). *Programme Database of Public Schools in Kenya*. Nairobi: Ministry of Education.

Miriti, J.M. and Moses, N.W. (2014). 'Financial Management: Training Needs of Public Secondary School Principals in Machakos County, Kenya'. *Research on Humanities and Social Sciences*, 4(13), pp. 2224-5766.

Mlinga, R.S. (2014). 'Basic Elements of Public Procurement Act 2011 and Public Procurement Regulations 2013'. *Tanzania Procurement Journal*, 7(13), pp. 1-8.

Morgan, G. A., Leech, N. L., Gloeckner, G. W., & Barrett, K.C. (2007). *IBM SPSS for introductory statistics: Use and interpretation* (4th ed). New York: Routledge.

Muchiri, H.W.K. (2017). *Strategies for Addressing the Rising Demand for Secondary School Education in Nairobi City County, Kenya*. A Thesis Submitted to the Department of Educational Administration and Planning for the Degree of Doctor of Philosophy in Economics of Education, University of Nairobi.

Mugenda, O.M. & Mugenda, A.G. (2003): *Research methods: Quantitative and*

qualitative approaches. Nairobi: ACTS Press.

Mugo, H. (2013). Determinants of procurement regulatory compliance by Kenya Electricity Generating Company. *International Journal of Social Sciences and Entrepreneurship*, 1(7), 1-28.

Musa, S.J., Success, B.E. & Nwaorgu, I.A. (2014). The public procurement reforms in Nigeria: Implementation and compliance challenges. *Journal of Asian Business Strategy*, 4(11), 149-162.

Mutahi, K. (2003). *The management of procurement-related expenditure in public secondary schools, Kenya*. Speech delivered at the Kenya Secondary Schools Heads Association national conference on 27th June, 2003, at Aga Khan Sports Centre, Mombasa.

Nachmias, C.F. & Nachmias, D. (1996). *Research Methodology in Social Sciences*. (5th Ed.). London: St. Martin's Press.

National Research Council (2013). *Nonresponse in Social Science Surveys: A Research Agenda*. Washington, DC: The National Academies Press.

New Zealand Government (2015). *Quick Guide to Emergency Procurement: Policy Brief*. Auckland: Ministry of Finance.

Nurmandi, A. (2013). 'What is the status of Indonesia's e-procurement?' *Journal of Government and Politics*, 4(3), pp. 350-394.

Obure, M.J. (2002). *Data analysis using SPSS for windows*. Nairobi: MODE Experts.

Odhiambo, T.O. (2012). *Influence of Procurement Planning on Management of Schools in Kenya. A Case Study of Public Secondary Schools in Rachuonyo North District. Homa Bay County*. Nairobi: JKUAT.

Odhiambo, W. & Kamau, P. (2003). *Public procurement: Lessons from Kenya, Tanzania and Uganda: Working paper No. 208*. Paris: OECD Development Centre.

Ogachi, J. (2006). The case for regulation of procurement personnel in Kenya. *Procurement News*, 2(3), 42-43.

Ondore, J.O., Odoyo, C.O., Obura, J.M., Kobiero, J.O., Odondo, A., and Okello, S. (2015). 'Effect of Different Strategies on Procurement Efficiency in Public Secondary Schools: A Survey of Public Secondary Schools in Ndhiwa District, Kenya'. *American Journal of Business, Economics and Management*, 3(2), pp.104-112.

- Onyinkwa, J. (2012). *Factors Influencing Compliance to Procurement Regulations In Public Secondary Schools in Kenya: A Case of Nyakach District, Kisii County*. A Project Submitted To the Department of Entrepreneurship and Procurement in the School of Human Resource Development for the Degree of Master of Science in Procurement and Logistics of Jomo Kenyatta University of Agriculture and Technology.
- Otieno G. (2004). *Report on Promotion of Accountability*. Presented during a workshop for Public Accounts Committee of the Eastern Africa. Mombasa Serena Beach Hotel, 20-22, February 2004.
- Organization for Economic Cooperation & Development [OECD] (2001). *Strengthening partner country procurement capacities: A needs assessment*. Paris: Crown Agents.
- Organization for Economic Cooperation & Development [OECD] (2008). *Improving school leadership: Volume 1 policy and practice*. Paris: OECD.
- Organization for Economic Cooperation and development [OECD] (2016a). *Economic Issues in Public Procurement: Policy Brief 2*. Paris: Sigma.
- Organization for Economic Cooperation and development [OECD] (2012). *Public Procurement: Preventing Waste*. Paris: OECD, CleanGovBiz.
- Organization for Economic Cooperation and development [OECD] (2016b). *Preventing Corruption in Public Procurement*. Paris: OECD.
- Ozorio de Almeida, M. (2005), *E-procurement by Brazilian federal government*. Retrieved from <http://www.comprasnet.gov.br>
- Paote, D., Harnett, P., Ahmed, I., Vega, M. and Velasquez, J.L. (2012). *Joint Evaluation of Support to Anti-Corruption Efforts: Nicaragua Country Report*. Oslo: Norwegian Agency for Development Cooperation.
- Perry, C. (2011a). *Procurement in education in other jurisdictions: Research Paper, No. 118/11*. Dublin: Research and Information Service, Northern Ireland Assembly.
- Perry, C. (2011b). *Procurement in education*. Dublin: Research and Information Service, Northern Ireland Assembly
- Pillay, K. & Erasmus, J. (2015). *Understanding Corruption in Tenders*. Johannesburg: Corruption Watch.
- Price Waterhouse Coopers [PWC], London Economics and ENCORYS (2011). *Public Procurement in Europe: Costs and Effectiveness*. London: PWC.

- Polit, D.E. & Beck, C.T. (2006) *Essentials of Nursing Research*, (6th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Public Procurement Oversight Authority [PPOA] (2007). *Assessing Procurement Systems in Kenya Report*. Nairobi: Public Oversight Authority.
- Public Procurement Oversight Authority [PPOA] (2009a). *Compliance report*. Nairobi: PPOA.
- Public Procurement Oversight Authority [PPOA] (2009b). *Public procurement manual for schools and colleges*. Nairobi: PPOA.
- Public Procurement Oversight Authority [PPOA] (2009c). *The Long Term Policy Framework for Public Procurement in Kenya*. Nairobi: PPOA.
- Public Procurement Oversight Authority [PPOA] (2010). *Guidelines for potential bidders*. Nairobi: PPOA.
- Queen's University (2016). *Strategic Procurement Services*. Retrieved on 13/3/2016 from <http://www.queensu.ca/procurement>
- Ramadhani, K. & Kibet, Y. (2015). 'Factors Affecting Implementation of Public Procurement Procedures and Practices in Elgeyo-Marakwet County'. *International Academic Journal of Procurement and Supply Chain Management*, 1 (5), pp. 121-135.
- Rindfleisch, A., Malter, A.J., Ganesan, S. & Moorman, C. (2008). "Cross-sectional Versus Longitudinal Survey Research". *Journal of Marketing Research*, 45(3), 1-23.
- Rondinelli, D.A. (1981). Government decentralisation in comparative theory and practice in developing countries. *International Review of Administrative Science*, 47 (2), 133-147.
- Sale, J.E.M., Lohfeld, L.H. and Brazil, K. (2002). 'Revisiting the quantitative-qualitative debate: implications for mixed-methods research'. *Quality and Quantity*, 36, pp. 43-53.
- Schultz, J. and Søreide, T. (2006). *Corruption in Emergency Procurement: U4 ISSUE 7:2006*. Bergen, Norway: U4 Anti-Corruption Resource Centre, Chr. Michelsen Institue (CMI).
- Scottish Parent-Teacher Council [SPTC] (2011). *A simple outline of devolved school management*. Edinburgh: SPTC.

- Senzu, E.T. and Ndebugri, H. (2017). *Evaluating the Effectiveness of the Procurement Acts in public Financial Administration; the Case Study in Ghana*. Accra: Cape Coast Technical University.
- State Department of Finance (2010). 'Procurement Planning Policy Guidelines'. *SCM*, 3(1), pp. 3-61.
- Strobo, G. & Leschinsky, D. (2009). The Canadian public procurement regime. In R.H. García (ed.) *International public procurement: A guide to best practice*. London: Globe Law and Business Publishing.
- Swick, B.C. & Tétrault, M. (2014). *Public procurement in Canada: Overview*. London: Thomson Reuters.
- Tatrai, T. and Nyikos, G. (2013). 'The Uses and Abuses of Public Procurement in Hungary'. Retrieved on 16/11/2018 from <https://www.researchgate.net/publication/264310514>
- Thai, K.V. (2001). Public procurement re-examined. *Journal of Public Procurement*, 1(1), 9-50
- Thai, K.V. (2008). *Corrupt Schools, Corrupt Universities: What can be done?* Paris: International Institute for Educational Planning, UNESCO.
- Transparency International [TI] (2005). *Annual report – 2005*. New York: TI.
- Trionfetti, F. (2000). Discriminatory public procurement and international trade. *The World Economy*, 23(1), 57-76.
- United Nations Educational, Scientific & Cultural Organisation [UNESCO] (2004). *Quantitative research in education: A guide for education managers*. Geneva: UNESCO.
- United Nations Educational, Scientific and Cultural Organisation [UNESCO] (2014). *Teaching and Learning: Achieving Quality for all*. Paris: UNESCO.
- United States Office of Federal Procurement Policy [USOFPP] (2013). *Improving the Collection and Use of Information about Contractor Performance and Integrity*. Access on 16/11/18 from www.whitehouse.gov/sites/default/files/omb/procurement/memo
- Vaidya, K., Yu, P. & Soar, J. (2002). *Measuring e-procurement performance in the Australian public sectors: A preliminary approach*. Retrieved from <http://www.researchgate.net/publication>

- Welsh Assembly Government (2010). *Improving Schools Procurement – Getting Better Value for Money through 'buy4wales*. Access on 16/11/18 from <http://wales.gov.uk/topics/educationandskills/schoolshome/fundingschools/schoolfunding/improvingschoolsprocurement/;jsess>
- Werner, S., Praxedes, M. & Kim, H. (2007). The reporting of non-response analyses in survey research. *Organizational Research Methods*, 10(1), 287-95.
- Wescott, C.G. 2008. *World Bank Support for Public Financial Management: Conceptual Roots and Evidence of Impact: Background Paper to Public Sector Reform: What Works and Why? An IEG Evaluation of World Bank Support*, Washington D.C.: The World Bank.
- Winkler, D. (1989). *Decentralisation in education: An economic perspective*. Washington, DC: World Bank.
- Woolcock, S. (2008). *Public Procurement and the Economic Partnership Agreements: assessing the potential impact on ACP procurement policies*. Commonwealth Secretariat.
- World Bank (1995). *Guidelines: Procurement under IBRD loans and IDA credits*. Washington, DC: World Bank.
- World Bank (2002). *Revised country procurement assessment report procedures*. Washington, DC: World Bank.
- World Bank (2003). *Country procurement assessment report, Ghana*. Washington, DC: World Bank.
- World Bank (2004). *Cambodia: Country Procurement Assessment Report*, Report No. 29950 KH. Bangkok, Thailand: The World Bank.
- World Bank (2005). *Philippines Country Procurement Assessment Report: 2nd Update*. Washington, DC: World Bank.
- World Bank (2009). *An overview of public expenditure management*. Washington, DC: World Bank.
- World Bank (2013). *The World Bank and Public Procurement—An Independent Evaluation*. New York: Independent Evaluation Group, World Bank.

APPENDICES

Appendix I: Transmittal Letter

Eric Kibinu Kinuthia,
P.O. Box 30197 – 00100, NAIROBI.
Email: kibinu.eric@gmail.com
Tel: +254721367521

12th February 2015.

Dear Sir/Madam,

RE: ACADEMIC RESEARCH

I am a PhD learner at the University of Nairobi. As part of the requirements of the Doctor of Philosophy degree in Educational Administration, I am conducting a research that aims at determining the effect of procurement reforms on the management of procurement-related expenditure in public secondary schools in Nairobi County. Its purpose is to influence pertinent policy discourses, expenditure management practices in public secondary schools, as well as stimulate relevant research, not only in Kenya but also in other developing countries.

You have been selected as one of the participants of the study. Kindly complete the questionnaire attached or choose a date for an interview as per the schedule attached. Your decision to participate is highly appreciated; however, you may withdraw from the study at any time in the course of your participation before submitting the questionnaire.

The research is for academic purposes only and thus, the information you provide will be kept confidential. Do not indicate your name or name of your school on the questionnaire. No information identifying you shall be reported in the Thesis or publications arising therefrom. You are requested to provide your responses with as much honesty as possible. Thank you for participating in the exercise.

Yours sincerely,

Eric Kibinu Kinuthia,
PhD Candidate

**Department of Educational Administration and Planning,
UNIVERSITY OF NAIROBI**

Appendix II: Authorisation Letter from NACOSTI


**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. _____ Date: **22nd June, 2015**

NACOSTI/P/15/5228/5869

Eric Kibinu Kinuthia
University of Nairobi
P.O Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“The effect of procurement reforms on expenditure management in public secondary school in Kenya Nairobi County,”* I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for a period ending **30th June, 2016.**

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

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


SAID HUSSEIN
FOR: DIRECTOR-GENERAL/CEO

Copy to

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

**COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666**

Noted
24 JUN 2015
Red for

National Commission for Science, Technology and Innovation | ISO 9001:2008 Certified

Appendix IV: Questionnaire for Deputy Principals

1.0	INTRODUCTION	RESPONSES	SKIP/INSTRUCTIONS
1.1	Date of interview: ____ / ____ / 2015		
1.2	Type	Boarding 1 Day 2 Day & Boarding 3	<i>Circle the most appropriate</i>
1.3	Category	National 1 County 2 Sub-county 3	<i>Circle the most appropriate</i>
1.4	Location	High-income zone 1 Low-income zone 2	<i>Circle the most appropriate</i> <i>Based on County Government classification</i>
1.5	Sub County	
1.6	Learner Population	1999 _____ 2000 _____ 2001 _____ 2002 _____ 2003 _____ 2004 _____ 2005 _____ 2006 _____ 2006 _____ 2007 _____ 2008 _____ 2009 _____ 2010 _____	<i>Kindly use school records or annual reports</i>
1.7	State the amount of money spent in procurement of goods, services, and works for the reference period.	1999 _____ 2000 _____ 2001 _____ 2002 _____ 2003 _____ 2004 _____ 2005 _____ 2006 _____ 2007 _____ 2008 _____ 2009 _____ 2010 _____	

2.0	INSTITUTIONAL STRUCTURE		SKIP/INSTRUCTIONS
2.1	How many members are in your school's tender committee?	_____	
2.2	Who appoints the committee members?	_____	
2.3	From which sectors are the tender committee members drawn?	_____ _____ _____	<i>Indicate if committee members are drawn from community, private sector, public service etc.</i>
2.4	What criteria are used to guide appointment of members into the committee?	_____ _____ _____	<i>For instance, minimum education level etc</i>
2.5	What is the tenure of the tender committee?	_____	<i>Duration of service before a new one is sworn in.</i>
2.6	What measures are in place to control conflict of interest among committee members?	_____ _____ _____	<i>Indicate measures that ensure that bidders do not win contracts because they are associated to some committee members</i>
2.7	Indicate the average number of meetings your committee holds in a quarter.	_____	
2.8	What is the quorum?	_____	
2.9	How often were the committee meetings postponed due to lack of quorum?	Never..... 1 Occasionally 2 Always 3	<i>Circle the most appropriate</i>
2.10	How often do you receive communication from the Directorate of Public Procurement on new developments?	Never..... 1 Occasionally 2 Always 3	
3.0	REGULATIONS GOVERNING PROCUREMENT PROCESS		SKIP/INSTRUCTIONS
3.1		Yes 1 No 2	<i>Circle the most appropriate</i>

	Has your school procured goods or services in the past one year?		<i>If No, skip to 3.3</i>
3.2	If Yes, a) Indicate the goods procured in the past on year?	_____ _____ _____	
	b) Indicate the services procured in the past on year?	_____ _____ _____	
3.3	If No, give reasons why	_____ _____ _____	<i>For instance, issues with funds, self-sufficiency etc</i>
3.4	Indicate two most commonly applied tendering method in your school.	Open tendering 1 Restricted..... 2 Quotations/Thesis 3 Single sourcing 4	<i>Circle two most appropriate</i>
3.5	How often does your committee advertise tenders?	Never 1 Occasionally 2 Always 3	
3.6	State three most commonly used media for tender advertising in your school.	_____ _____ _____	<i>List in order of importance</i>
3.7	What is the average period given to bidders to submit their applications?	_____	
3.8	Who prepares tender documents?	_____ _____	<i>Indicate whether it is a collective responsibility or individual's</i>
3.9	Does your committee have standard guidelines for preparing tender documents?	Yes 1 No 2	<i>Circle the most appropriate</i> <i>If No, skip to 3.11</i>
3.10	If Yes, how often are tender documents prepared in accordance with the guidelines?	Never.....1 Occasionally.....2 Always3	<i>Circle the most appropriate</i>
3.11	What measures have you instituted to ensure that tender	_____ _____ _____	<i>Also indicate if such measures do not exist</i>

	documents remain confidential till advertisements are sent out?		
3.12	How much do you charge for issuance of tender application documents?	_____	
3.13	How often does the committee resort to emergency procurement , where rules are sometimes abandoned?	Never.....1 Occasionally.....2 Always3	<i>Circle the most appropriate</i>
3.14	Does your school have a procurement plan?	Ye1 No2	<i>Circle the most appropriate</i> If No, skip to 3.17
3.15	If Yes, who prepares the plan	_____ _____ _____	<i>Indicate whether it is a collective responsibility or individual's</i>
3.16	How often are tenders split into small lots, which fall within the threshold for unilateral approval?	Never.....1 Occasionally.....2 Always.....3	<i>Circle the most appropriate</i>
3.17	What measures have been instituted to ensure that the prices of goods, services, and works are not inflated?	_____ _____ _____	<i>Also indicate if such measures don't exist</i>
4.0	TENDER COMMITTEE CAPACITY TO MANAGE THE PROCUREMENT PROCESS		SKIP/INSTRUCTIONS
4.1	No. of members with training in procurement management?	_____	

4.2	How would you rate the adequacy of procurement management skills among committee members?	Very adequate 1 Adequate 2 Fairly Adequate 3 Inadequate 4 Very Inadequate 5	<i>Circle the most appropriate</i>
4.3	Which other skill areas should the committee members be trained on to improve their competence?	_____ _____ _____	<i>List in order of priority</i>
5.0	UTILISATION OF STANDARD PROCUREMENT DOCUMENTS		SKIP/INSTRUCTIONS
5.1	List all the documents that are often used in the procurement process in your school.	_____ _____	<i>Hint: purchase requisition form, local procurement order</i>
5.2	In your view, what are the factors impeding regular use of standard procurement documents in your school?	_____ _____ _____	
6.0	MEASURES TO UPHOLD TRANSPARENCY		SKIP/INSTRUCTIONS
6.1	What is the maximum threshold of your school?	_____	
6.2	What measures are in place to ensure that the evaluation process remains confidential?	_____ _____ _____	<i>Also indicate if such measures don't exist</i>
6.3	What factors are considered in the bid evaluation process?	_____ _____ _____	<i>Factors reflecting qualifications and competence</i>

6.4	What measures do you have in place to ensure that goods or services procured meet the desired standards?	_____ _____ _____	<i>Technical skills to verify</i>
6.5	What factors do you take into account when opening bids to ensure transparency?	_____ _____ _____	<i>For instance, minimum No. of members to carry out the exercise</i>
6.6	How long does it take the committee to evaluate the bids?	_____	
6.7	How do you ensure that bidders do not influence the evaluation process, through bribery, lobbying etc?	_____ _____ _____	<i>For instance, limited interaction, canvassing etc</i>
6.8	How do bidders get to know the outcomes of the evaluation process?	_____ _____	<i>Indicate the methods</i>
6.9	Do you notify unsuccessful bidders too?	Yes.....1 No2	<i>Circle the most appropriate If No, skip to 7.1</i>
6.10	If Yes, why is it important for you to inform them?	_____ _____	
7.0	LEVEL OF INDEBTEDNESS		SKIP/INSTRUCTIONS
7.1	How much money in total is owed to suppliers, contractors and other creditors?	Suppliers (KES) _____ Contractors (KES) _____ Others (KES) _____	<i>Kindly refer to the school records or annual reports</i>
7.2	For how long has the school owed suppliers, contractors, and other creditors?	Suppliers _____ Contractors _____ Others _____	<i>Provide the longest duration in each case</i>

7.3	How much money is owed to the school in fees arrears?	KES _____	<i>Kindly refer to the school records or annual reports</i>
8.0	CHALLENGES FACING THE REFORMS PROCESS		
8.1	What challenges hinder the efforts to improve efficiency of the procurement process in your school?	<hr/> <hr/>	
8.2	Suggest appropriate measures that should be taken to address the challenges.	<hr/> <hr/>	
THANK YOU			

Appendix V: Interview Guide for BoM and PA Members

1.0 INTRODUCTION

1.1 Date of interview: ___/___/ 2015

1.2 How would you describe the efficiency of the procurement system in your school, in terms of the amount of resources spent in procuring goods, services, and works?

2.0 INSTITUTIONAL STRUCTURE

2.1 What do you feel are shortfalls in the composition and operations of the tender committee in your school?

2.2 What is your opinion about the measures for regulating conflict of interest among committee members?

3.0 REGULATIONS GOVERNING PROCUREMENT PROCESS

3.1 How effective are the regulations governing procurement activities in your school?

3.2 Do you think the Tender Committee operates within the regulations governing procurement activities?

3.3 Suggest appropriate measures to improve management of the procurement system in your school.

4.0 TENDER COMMITTEE CAPACITY TO MANAGE THE PROCUREMENT PROCESS

4.1 Do you think the Tender Committee members have adequate skills to run procurement activities effectively?

4.2 Which other skill areas do you think the committee members should be trained on to improve their competence?

5.0 MEASURES TO UPHOLD TRANSPARENCY

5.1 What is your view about the level of transparency in operations of the Tender Committee?

5.2 What kind of irregularities have you witnessed from the procurement system in your school?

5.3 What measures would you suggest to improve the efficiency of the procurement system in your school?

6.0 CHALLENGES FACING THE REFORMS PROCESS

6.1 Do you think the Tender Committee is on track with procurement reforms as required by the law?

6.2 What in your view are the impediments to implementation of the public procurement reforms in your school?

6.3 Suggest appropriate measures that should be taken to address the impediments.

THANK YOU

Appendix VI: Multiple Linear Regression Output

Multiple Linear Regression Model 1

```

GET
  FILE='C:\Users\user\Desktop\Kibinu 2015\Data set222.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='C:\Users\user\Desktop\Kibinu 2015\Data set222.sav'
  /COMPRESSED.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT q1.8variation
  /METHOD=ENTER q4.1 q3.4dummy q3.5$1 q2.7 q3.13$1 q3.16$1.
  
```

Regression

[DataSet1] C:\Users\user\Desktop\Kibinu 2015\Data set222.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	How often are tenders split into small lots, which fall within the threshold for unilateral approval? , How often does your committee advertise tenders?, Indicate the average number of meetings your committee holds in a quarter., Frequency of open tendering application, How often does the committee resort to emergency procurement, where rules are sometimes abandoned?, No. of members with training in procurement management? ^b	.	Enter

a. Dependent Variable: variation in the level of procurement-related expenditure after and before reforms

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786 ^a	.618	.537	12726.809

a. Predictors: (Constant), How often are tenders split into small lots, which fall within the threshold for unilateral approval? , How often does your committee advertise tenders?, Indicate the average number of meetings your committee holds in a quarter., Frequency of open tendering application, How often does the committee resort to emergency procurement, where rules are sometimes abandoned?, No. of members with training in procurement management?

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7347894355.980	6	1224649059.330	7.561	.000 ^b
	Residual	4535206827.563	28	161971672.413		
	Total	11883101183.543	34			

a. Dependent Variable: variation in the level of procurement-related expenditure after and before reforms

b. Predictors: (Constant), How often are tenders split into small lots, which fall within the threshold for unilateral approval? , How often does your committee advertise tenders?, Indicate the average number of meetings your committee holds in a quarter., Frequency of open tendering application, How often does the committee resort to emergency procurement, where rules are sometimes abandoned?, No. of members with training in procurement management?

Coefficients^a

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-32502.931	17298.223		-1.879	.071
	No. of members with training in procurement management?	-912.369	1950.896	-.063	-1.468	.084
	Frequency of open tendering application	-6412.200	5523.280	-.146	-1.161	.255
	How often does your committee advertise tenders?	-10054.879	4140.135	-.300	-2.429	.022
	Indicate the average number of meetings your committee holds in a quarter.	-2047.684	1861.853	-.138	-1.100	.281
	How often does the committee resort to emergency procurement, where rules are sometimes abandoned?	12206.465	4701.163	.352	2.596	.015
	How often are tenders split into small lots, which fall within the threshold for unilateral approval?	9285.571	3689.381	.357	2.517	.018

a. Dependent Variable: variation in the level of procurement-related expenditure after and before reforms

Multiple Linear Regression Model 2

```
GET
  FILE='C:\Users\user\Desktop\Kibinu 2015\Data set222.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='C:\Users\user\Desktop\Kibinu 2015\Data set222.sav'
  /COMPRESSED.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT q1.8variation
  /METHOD=ENTER q4.1 q3.4dummy q3.5$1 q2.7 q3.13$1 q3.16$1 q1.7popvariation q1.5dummy
q1.4dummy q1.3dummy.
```

Regression

[DataSet1] C:\Users\user\Desktop\Kibinu 2015\Data set222.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
2	School type, Indicate the average number of meetings your committee holds in a quarter., Frequency of open tendering application, School location, How often does your committee advertise tenders?, How often does the committee resort to emergency procurement, where rules are sometimes abandoned?, Average variation in learner population, No. of members with training in procurement management?, How often are tenders split into small lots, which fall within the threshold for unilateral approval? , School category ^b	.	Enter

a. Dependent Variable: variation in the level of procurement-related expenditure after and before reforms
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.832 ^a	.692	.563	12358.996

a. Predictors: (Constant), School type, Indicate the average number of meetings your committee holds in a quarter., Frequency of open tendering application, School location, How often does your committee advertise tenders?, How often does the committee resort to emergency procurement, where rules are sometimes abandoned?, Average variation in learner population, No. of members with training in procurement management?, How often are tenders split into small lots, which fall within the threshold for unilateral approval? , School category

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	8217226521.713	10	821722652.171	5.380	.000 ^b
	Residual	3665874661.830	24	152744777.576		
	Total	11883101183.543	34			

a. Dependent Variable: variation in the level of procurement-related expenditure after and before reforms
 b. Predictors: (Constant), School type, Indicate the average number of meetings your committee holds in a quarter., Frequency of open tendering application, School location, How often does your committee advertise tenders?, How often does the committee resort to emergency procurement, where rules are sometimes abandoned?, Average variation in learner population, No. of members with training in procurement management?, How often are tenders split into small lots, which fall within the threshold for unilateral approval? , School category

Coefficients^a

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	-33320.200	18255.131		-1.825	.080
	No. of members with training in procurement management?	-869.058	2138.482	-.060	-1.406	.088
	Frequency of open tendering application	-2989.587	6169.232	-.068	-.485	.632
	How often does your committee advertise tenders?	-11237.357	4258.411	-.335	-2.639	.014
	Indicate the average number of meetings your committee holds in a quarter.	-304.344	1994.883	-.021	-.153	.880
	How often does the committee resort to emergency procurement, where rules are sometimes abandoned?	15841.415	4889.540	.457	3.240	.003
	How often are tenders split into small lots, which fall within the threshold for unilateral approval?	10560.257	3993.200	.406	2.645	.014
	Average variation in learner population	-1.240	2.787	-.061	-.445	.660
	School location	-550.933	5208.724	-.014	-.106	.917
	School category	-16742.816	7497.154	-.397	-2.233	.035
	School type	-6218.567	6368.789	-.165	-.976	.339

a. Dependent Variable: variation in the level of procurement-related expenditure after and before reforms