PUBLIC PROCUREMENT SYSTEM AND ITS INFLUENCE ON THE BUILDING CONTRACT PERFORMANCE DURING PROJECT IMPLEMENTATION: THE CASE OF NAIROBI-COUNTY

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Public Procurement System and its Influence on the Building Contract Performance during Project Implementation: The Case of Nairobi-County

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DECLARATION

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

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

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DEDICATION

This thesis is dedicated to my parents: Kiiru (late) and Muthoni Kiiru, who not only cared for me but also brought me up.

“To my wife Rose for her patience, love and encouragement”

‘To my three wonderful children: Victor, Edwin and Megan, hope this inspires them to pursue their education and lead a successful life”

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Finally, I would like to absolve all the individuals and institutions mentioned above for any error of omission and /or commission in this piece of work. For any of these, the researcher remains solely responsible.

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LIST OF ABBREVIATIONS/ACRONYMS

AWP Annual Works Programme

CPAR Country Procurement Assessment Report

CPI Compliance Performance Indicator

DAC Development Assistance Committee

EU European Union

GPA Government Procurement Agreement

GDP Gross Domestic Product

ISO International Organisation for Standardisation

IBRD International Bank for Reconstruction and Development

OECD Ogarnisation of Economic Co-operation and Development

PEs Public Entities

PP Public Procurement

PPOA Public Procurement Oversight Authority

PPDA Public Procurement and Disposal Act

PPPs Public Private Partnerships

PPS Public Procurement System

PPOAB Public Procurement Oversight Advisory Board

PPARB Public Procurement administrative and Review Board

RoK	Republic of Kenya
SPSS	Statistical Package for Social Science
STD	Standard Tender Document
SD	Standard Deviation
TQM	Total Quality Management
UK	United Kingdom
UNCITRAL	United Nations Commission on International Trade Law
USA	United States of America
WB	World Bank
WTO	World Trade Organisation

ABSTRACT

Public procurement system account for significant percentage of GDP and has a direct impact on Kenya economy. Indeed, the Kenya government has used public procurement system to meet development objectives such as the provision of infrastructure for instance public building projects. Public procurement system is regulated by Public Procurement Act which specifies the rules under which the public procurement system can be performed and set conditions of award procedures of public contracts. Moreover, the law aims at strengthening the procurement process in order to achieve: trasparency, cost effectiveness, competitiveness, fairness and equity with primary focus to support contract performance. Therefore, the quality of performance is affected by the irregularities in the selection process of contractor thereby influencing the contract performance. Acompanying the foregoing, cost effectiveness(budget) allocation, time, quality, and client satisfaction must show success of the project.

However, despite the enactment of the law, various studies have found that contract management of projects was weak providing multiple opportunities for transgression in contract implementation. The study aimed at coming up with applicable works manual for procurement of public building works in Kenya. Towards the realization of this objective, a descriptive research based study using a cross-sectional survey design on 48 randomly sampled projects in Nairobi. This research is a survey of knowledge and information through semi-structured questionnaires and interview schedules where primary data was collected from procurement officers, project supervisors, and contractors. Data was analysed for reliability, descriptive statistics, correlation and multiple linear regression.

The study recommends that cost effectiveness and transparency procurement related factors should be addressed so as to improve building contracts performance. The study findings will not only contribute to body of knowledge and the improved works manual will also be simulated in the current PPOA Works Manual as a way of enhancing

procurement procedures. The study concluded that, all the identified public procurement-related factors are significant in predicting contract performance at early stages of project procurement as well as at implementation.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Public procurement system has been utillised as an important tool for achieving economic, social, and other objectives (Arrowsmith, 1998). Public procurement system is broadly defined as the purchasing, hiring or obtaining by other contractual means of goods, construction works, and services by the public sector (Kipchilat, 2006). However, it's a complex system with a set of rules that guide governments purchasing of construction works and services. Indeed, governments have used public procurement to meet development objectives such as the provision of public buildings and other services (Rege, 2003 as cited in Mutava, 2012). In Kenya, public procurement system accounts for 60% of its budget expenditure (Aketch, 2005). Public procurement plays a critical role in the Kenyan economy and is an important factor in economic growth (Kadima *et al.*, 2013). The Kenyan economy at the moment is experiencing growth with the public as well as the private sectors being engaged in numerous development building and construction projects with expected socio-economic and governance impacts (Republic of Kenya., 2014). Public building works completed in main towns increased from 86.9% in 2012 to 103.7% in 2013 (Republic of Kenya., 2014). Since the public procurement of projects contributes a significant proportion of a country's economic growth in terms of jobs creation, capital formation and provision of infrastructure services, non-performance in terms of cost, time and quality to completion results in delayed economic growth (Baradyna, 2008). Kenya procurement system continuous transformation is expected to address inefficiency in public building projects delivery among others in the country but this has not been the case (Juma, 2010). Moreover, public procurement is full of evidence of poor project procurement practices, (Owegi & Aligila, 2006) as cited in Langat (2012). Munano, (2012) indicates

that, only 34.9% of contracted public building projects were completed in the financial year 2007 to 2011, the rest 65.1% have stalled or are experiencing delays, and cost overrun. Afred (2008) affirmed that public procurement of works suffers from irregularities in the selection process of contractor that could be linked to, stalled projects, delay in project completion, cost overrun, and poor quality of work. Odhiambo and Kamau (2003) asserts ,the root cause for these inefficiencies over many years is persistent lack of compliance with procurement procedures that ensure competition, fairness, cost effectiveness, and transparency in the procuring process. It is therefore evident from various studies that, despite the enactment of Public Procurement and Disposal, 2005 Act (PPD, 2005) (Republic of Kenya, 2005) and Regulations 2006 public building projects are marred with irreguraties in the contractor selection. Consequences of this underperformance have attributed to delay in project completion, cost overrun and poor quality. It's therefore worth noting that, contract performance can be achieved by identifying public procurement-related factors and describing them at early stages of project procurement (pre-tender/contract award process) thus creating a conducive performance during project implementation as predictors of contract success.

1.2. Statement of the Problem

The adoption of Public Procurement and Disposal Act (PPDA) of 2005 and the Regulations of 2006 introduced procedures for public procurement system to allow for efficient procurement of building works. It additionally aimed at strengthening the procurement process in order to achieve: trasparency, cost effectiveness, competitiveness, fairness and equity with primary focus to support projects delivery on budget, time schedule, required quality, and to client satisfaction.

Despite the enactment of the PPD Act, the building projects performances are replete with: delay in project completion, cost overrun, and poor quality of work as established by various studies (Munano 2012; Langat, 2012, Afred 2008; Büchner, Freytag,

González, , & Güth,. 2008; Owegi and Aligila 2006). Munano, (2012) affirmed that, only 34.9% of contracted public building projects were completed in the financial year 2007 to 2011, the rest 65.1% have stalled or are experiencing delays, cost overrun and a number of these projects may be linked to irregularities in contractor selection. Study commissioned by Public Procurement and Oversight Authority (PPOA), it was established that contract management of projects was weak, providing multiple opportunities for transgression in contract implementation (Organisation of Economic Co-operation and Development, 2007). Further, the legal framework and procedures that support success performance of project during implementation were not adhered to, thereby affecting and influencing contract performance (PPOA, Annual Reports and Accounts, 2010).

The literature reviewed by the researcher did not identify such study in construction project management that examines the public procurement-related factors that influence the building contract performance. This study endeavors to find whether public procurement-related factors contribute to inadequate contract implementation and performance of public building projects in Nairobi County.

1.3. Objectives of the Study

The main objective of the study is to evaluate the influence of public procurement system on contract performance of public building projects during implementation.

1.4 Specific Objectives:

i. To examine the public procurement factors that have significant influence on building project contract performance.

ii. To assess the extent to which the public procurement indicators of success influence the contract performance.

iii. Evaluate the relationship between the public procurement predictor of success factors and contract performance.

iv. Make recommendations for improved works manual to be simulated to current PPOA work manual.

1.5 Research Questions

The researcher will address the following questions:

1. What are the Public procurement-related factors that have significant influence on contract performance during public building project implementation?
2. Are there other factors that affect contract performance during public building project implementation other than public procurement-related factors?
3. To what extent do the public procurement-related indicators of success influence the contract performance?
4. What is the relationship between the public procurement-related factors and contract performance during public building project implementation?
5. Do public procurement-related factors predict success in contract performance?
6. What are the key project performance indicators of success?

1.6 Study Justification

In almost all developing countries, public procurement constitutes the largest domestic market (Akech, 2005). Further Aketch (2005) asserts that, depending on how it is managed, the public procurement system can thus contribute to the economic development of these countries. Indeed, public procurement is the means through which

governments meet development needs such as public building projects and other facilities (Akech, 2005).

However, Kenya like other developing countries have used the public procurement system to fund numerous development building and construction projects with expected socio-economic and governance impact. Successful public project performance is therefore important because it has a direct impact on attainment of the objectives of the government such as Vision 2030. Since the public procurement of projects contributes a significant proportion of a country's economic growth in terms of jobs creation, capital formation and provision of infrastructure services, non-performance in terms of cost, time and quality to completion results in delayed economic growth (Baradyna, 2008).

Kenya procurement system is based on the UNCITRAL model Law; embrace the principles of sound public procurement (Akech, 2005). Their declared purpose is "to ensure that public procurement procedures are conducted in a transparent, competitive, cost-effective, fair and equitable manner thereby contributing towards a conducive business climate.

Several studies have acknowledged that public building procurement have problems such as irregularities in the selection process of contractor that could be linked to, stalled projects, delay in project completion, cost overrun, and poor quality of work (Munano 2012; Langat, 2012, Afred 2008; Büchner, Freytag, González & Güth, 2008; Owegi and Aligila 2006). The underperformance of building contracts as noted by the various researchers mentioned, has informed the call to this study to examine the influence of public procurement-related factors on the building contract performance during project implementation.

1.7 Significance of the Study

The study will contribute valuable knowledge to Construction industry policy makers; the government especially the procuring entities may use the study to develop or improve their policy on building project procurement; improve contractor selection and; other researchers will use the same in future research for literature review and for further studies in Kenya.

An effective and efficient public procurement system is important in evaluating the performance of government (Hunja., 2001). This is because deficiencies in procurement system contributed to huge losses in public procurement. For instance, the deficiencies led to poor public building projects and other physical infrastructure (Akech, 2003). This study's result and recommendations will contribute to improved procurement work manual, which shall be simulated to current public procurement, works policy manual.

1.8 Assumptions of the Study

The assumption of the study was that the respondents involved in the implementation of ongoing building in public entity namely: procurement officers, project supervisors, and contractors would be willing and committed to respond to enquiry. Additionally, it was assumed that, what was researched in the sampled government public building projects should also happen to other public building projects not mentioned. Finally, inadequate documentation of project prior to tendering among other factors are held constant i.e. the assumption made is that the documentation was adequately done and thus no effect on the project's success indicators.

1.9 Scope

This study investigates the influence of public procurement-related factors on contract performance. The variable covered includes public procurement-related factors and the contract performance. The study covered the public procurement process of the public building projects under implementation in Nairobi procured between January 2009 and

December 2013 two years after operationalisation of the legal framework and regulations in 2007. Two years later was a good grace period for project implementers to acquaint themselves with the new law. Additionally, study focused on building works procurement carried out by procuring entities as open tenders in Class A and B procuring entities as provided in First Schedule of the Regulations (PPOA, 2009). The Regulations allow for threshold of works expenditure for procurement methods (PPDA, 2005). The researcher focused on works with level of expenditure above 20million requiring use of open tendering.

1.10 Limitations

A major limitation was that some public procuring entities denied the researcher permission to accessing information. In some instances the permission was granted then access to information denied citing sensitivity of the project. The research was limited to evaluation of public procurement and its influence on contract performance of building projects in Nairobi -Kenya.

1.11 Thesis Organisation.

The study report is organized in five chapters:-

Chapter 1 comprises background of study, problem statement for which the study is to be conducted, aim and objectives of the study. It also includes the study justification, scope ,significance and limitations of the study and finally the assumptions of the study and definition of terms; Chapter 11 contains the literature review which details the various aspects of public procurement system, social and economic responsibility of public procurement, factors influencing performance, contract formulation, and theoretical framework; Chapter 111, discusses the research methodology which include research design, nature and source of data, target population and sampling frame, sampling methods, method of data collection, instruments and method of data analysis; Chapter 1V of the study present data analysis and results observed and; Finally Chapter V present the summary of findings, the conclusion drawn from chapter four and the recommendations based on the conclusions.

1.12 Definition of Terms

The following are the definitions of the basic technical terms used in this study:-

Procurement*:* Refer to the process of acquiring goods, works and services in the award of contracts under which payments are made in the implementation of projects (Hibberb, Merrifield, & Taylor, 1990).

Contract*:* is an agreement between two or more persons or entities in which there is promises to do something in return for a valuable benefit known as consideration (The Aqua Group 1999).

Performance*:* is defined as, the outcome of a process or an activity (Turban, 2001). For this study the main project performance parameters is limited to time, cost, quality, and client satisfaction.

Project implementation*:* The execution of a project through construction operations (Bennett, 2003).

Project success: is measured both in terms of product success (objectives and purposes) and project management success (input and output) (Bacarini, 1999).

Contract Management*:* is the process that enables both parties to a contract meets their obligations in order to deliver the objectives from the contract (The Aqua Group 1999). .

Construction: is defined as ′the mobilization and utilization of capital and specialized personnel, materials, and equipment to assemble materials and equipment on a specific site in accordance with drawings, specifications, and contract documents prepared to serve the client (Merrit, Loftin, & Ricketts, 1996).

Public entity*:* The government or any department of Government (PPDAct 2005).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher reviewed work done by other researchers on the subject under study. The chapter is organized in several broad areas, which include definition of public procurement system, public procurement process, and institutional framework, social and economic responsibility of public procurement, effect, and outcome on performance, contract formulation and finally theoretical framework that cites variables in this area of study.

2.2 Public Procurement System

2.2.1 Definition

Public Procurement system is broadly defined as the purchasing, hiring or obtaining by other contractual means of goods, construction works, and services by the public sector (World Bank 1995 as quoted by Kipchilat, 2006). The public procurement of construction projects is characterised with a process flow starting with procurement planning and proceeding in sequence to project design, advertising, invitation to bid, prequalification, bid evaluation (broken down further into technical and financial evaluation), post-qualification, contract award and contract implementation (Büchner, Freytag, González & Güth, 2008).

However, it's a complex system with a set of rules that guide governments purchasing of construction works and services. Indeed, it is an activity of all states and is done with public money to benefit the public. Goods, works and services so procured are generally provided by private enterprise (Stephanus, 2009). However, procurement process

extends to ultimate disposal/decommissioning of property at the end of its useful life(Water, 2004). Therefore, for the purpose of this study the project procurement covers up to project closure.

2.2.2 Public Procurement Legal Framework

Public procurement system has grown especially in the last decade. Stephanus (2009) argues that, Worldwide this growth has become a very important socio-economic factor and has been described as a procurement revolution. Many countries have adopted a number of regional and international agreements designed to eliminate discrimination against foreign products, construction works, and suppliers in procurement. The most important of these agreements is the World Trade Organisation (WTO). These developments have been supported by the adoption of United Nations Commission on International Trade Law (UNCITRAL) of a Model Law on Procurement of Goods, Construction and Services (UNCITRAL, 1994).

The Model Law has become an international benchmark in public procurement law reform (Garcia, 2009). Enacting states are not required to inform UNCITRAL when they adopt the Model Law as it is used for local legislation in several states that include developed to developing countries, such as Kenya, Albania, Azerbaijani, Croatia, Estonia, Gambia, Kazakhstan, Poland, Romania, and Tanzania. The Model Law is a suggested text for legislators to perhaps use or tailor to their own local procurement legislation, not a binding prescriptive text. Legislators are free to amend various provisions or adopt them as a whole (Garcia, 2009). The objectives of this Law according to this Garcia (2009) are to maximize competition, fair treatment to contractors bidding to government work, enhance transparency, cost effectiveness in procurement and curb abuses. Nicholus, (2010) concurs with Garcia on the objectives of the public procurement model law through his six main principle factors that are set out in UNCITRAL preamble namely: promoting competition among suppliers and contractors for the supply of goods, or services to be procured; providing

for the fair and equitable treatment of all suppliers and contractors, transparency in the procedures relating to procurement, promoting the integrity, fairness, public confidence in the procurement process and; cost effectiveness in procurement. Adopting provisions based on the Model law can also help states accede to international trade agreements for opening up procurement (Nicholus 2010).

In the European Union (EU) for example, public procurement legal framework set out the rules under which contracts must be awarded. It has its roots in principles set out in the Treaty of Rome of 1957 (Mathews, 2010, 2012). Under this treaty primary provisions as well as secondary provisions (directives and regulations) rule public procurement. According to EU rules, public sector procurement must follow transparent open procedures ensure fair conditions of competition for suppliers (Guidi, 2010).

Ghana like many other developing countries has problems in her public procurement system (Anvuur, 2006). Huge and unsustainable foreign debt, excessive budget deficits, huge contractual payment arrears, poor construction performance, corruption, and pressure from international financial institutions are major problems that have forced the government to commit to a reform of public procurement system. This culminated in the passing of the Public Procurement Act, 2003(Act 663) (Anvuur, 2006). Similarly, Nigeria followed a World Bank Country Procurement Assessment Report (CPAR) conducted in 1999. The report established the link between the weak public procurement procedures and corruption. The report established that the weak public procurement system had far reaching negative consequences' on national development especially in the area of public construction projects in Nigeria. Following this, there was a growing public demand that the reforms are sustained and institutionalized with legal backing. Public Procurement Bill was there after enacted in to law in 2007(Nongo, 2012).

2.2.3. Public Procurement System Evolution in Kenya

Public procurement system in Kenya evolved from a crude system with no regulations to an orderly legally regulated procurement system. Table 4:1 shows a summary of the evolution of Public procurement system in Kenya.

Table 2:1: Evolution of Public Procurement System

1955-1963	Crown Agents ,Central Tender Board, Procurement and Supplies
1963-1970	Crown Agents ,Central Tender Board and Supplies Branch
1978- 1983	Supplies Manual; Central Tender Board, Treasury Circulars, and Supplies Branch
1983- 2001	Supplies manual, Central Tender Board , District Focus for Rural Development strategy, and Supplies Branch
2001-2007	Exchequer and Audit (Public Procurement) Regulations(2001) and Supplies Branch
From 2007	Public procurement and Disposal Act 2005
2010	Public Procurement anchored in the New Constitution under Article 227
2013	Preference and Reservations
2013	Public Private Partnerships (PPPs)

Source: Adapted from PPOA Journal No.5 of 2011 and Mokaya (2015)

Kenya achieved its independence in 1963 from British Empire. Nevertheless at independence the supplies services continued as during pre-independence days in the colonial; period whereby Crown Agents organised overseas procurement for the government until the seventies (Mokaya, 2015). Central Tender Board (CTB) was also established through treasury circular issued in 1955 (Mokaya, 2015). CTB was to handle all government tenders. In 1959, Procurement and Supplies Unit was established under the Ministry of Public Works to handle common-user goods and services. However, in 1960, Supplies Branch went through further restructuring and the Chief Storekeeper became the chairman and the chief Purchasing Officer became his Secretary (Mokaya, 2015). It should be appreciated that during this period the

government organisation was small and therefore Procurement and Supplies was centralized.

After Kenya achieved its independence in 1963, the supplies services continued as they were during the pre-independence days. The public procurement system at the time was done by the Crown Agency Company Limited (CACL) on behalf of the government up to 1970, because local firms lacked capacity to service the government with its needs mostly from the foreign sources at the time (Ochiri, 2011). However, in 1974 there was a major shift when CTB was placed under the Treasury from the Ministry of Public Works (Mokaya, 2015). Another major introduction was the Supplies Manual in 1978. The manual supplemented by occasional Treasury Circulars governed the public procurement system in Kenya based on 1978 Supplies Manual. The emergence of the public procurement reforms abolished the CTB in 2001 but Supplies Branch exits to date but with much reduced mandate (Ochiri, 2011).

Assessment conducted in 1997 by the public procurement Assessment Reform and Enhanced Capacity (PPAREC) project revealed serious shortcomings in the Kenya public procurement system. The assessment unearthed the centrality of public procurement in the economy and laid ground for the Public Procurement Reforms launched in 1998 whose pillars of strengths were transparency, accountability and value for public money (PPOA, Public Procurement Reform in Kenya., 2010).

With the official launch of Public Procurement Reforms, the country set on the path in the area of public procurement system by first putting in place a unified and legal regulatory framework to guide the reforms. This was realized through the gazettement of the Exchequer and Audit (Public Procurement) and regulations, 2001, which harmonized all treasury circulars and manuals governing procurement of the public sector. An institution to oversee development and implementation of the public procurement policy in Kenya and improve transparency was put in place. This was realized through the creation of the Public Procurement Directorate (PPD) which was

mandated to oversee the public procurement process in Kenya and the Public Procurement Complaints, Review and Appeals Board (PPCAB) which was to handle tendering disputes.

Despite this being, a huge stride towards the reforms, an Independent Procurement Review (IPR) in the World Bank (WB) Countries Procurement Assessment Report (CPAR), indentified weaknesses in the public procurement system. A top was the need for fundamental principles in the procurement process to be anchored in an Act of parliament rather than being relegated to Regulations (Public Procurement Authority., Public Procurement Reform in Kenya., 2010). The WB and other donors in particular sought to "to harmonise the national procurement system with global procurement best practices through adoption of United Nations Commission on International Trade Law (UNCITRAL) principles in order to make the processes more efficient and to devolve procurement to local entities" (Akech., 2005).

Additionally, competitiveness, transparency, fairness, and cost effectiveness in the public procurement procedure are essential determinants of success performance of public building project. A milestone was achieved in this area with the enactment of Public Procurement and Disposal Act, 2005 and Public Procurement and Disposal regulations, 2006. This Act is anchored in the new Constitution of Kenya {(Promulgated in 2010; Section 227(1) and (2)} on procurement of public goods and services (Republic of Kenya, 2010).

In line with the country's public procurement reforms agenda, Kenya, in 2006 was among the 22 countries that participated in pilot testing a new methodology for the Assessment of National Procurement System (version 4). The methodology was developed by the Organisation of Economic Corporation and Development-Development assistance Committee (OECD-DAC) Joint Venture for Procurement. In 2005 the Public Procurement and Disposal Act was gazetted and became operational in

2007 forming the legal and regulatory framework of the public procurement system in Kenya.

The PPD Act 2005 clearly establishes the procurement methods to be applied and all relevant procedure for procurement (OECD-DAC & WB, 2007). Additionally, the law covers construction works and services for all procurement using national funds. In section 9(c) (i), of the Legal framework, the PPOA is mandated to assist in the implementation and operation of the public procurement system (Republic of Kenya, 2005). In endeavor to fulfill this mandate, as far as public building projects implementation is concerned it has prepared manuals and standard tender documents to be used in connection with procurement by public entities.

2.3 Public Procurement Process

The enactment of the PPDAct, 2005, Public Procurement Regulations 2006, has put in place a sound and comprehensive legal framework for public construction procurement process with clear hierarchical distinction. The act, clearly establishes the procurement methods for public building works, ranging from open tendering to alternative procurement procedures and how they would be applied (Republic of Kenya, PPD Act, 2005).

Figure 1 shows the many steps involved in public procurement process such as: procurement planning and needs identification; budgeting and fund sourcing strategy; review and once satisfied approve procurement plan; procurement methods as outlined by procurement law; tender evaluation and award; contract administration and project handover.

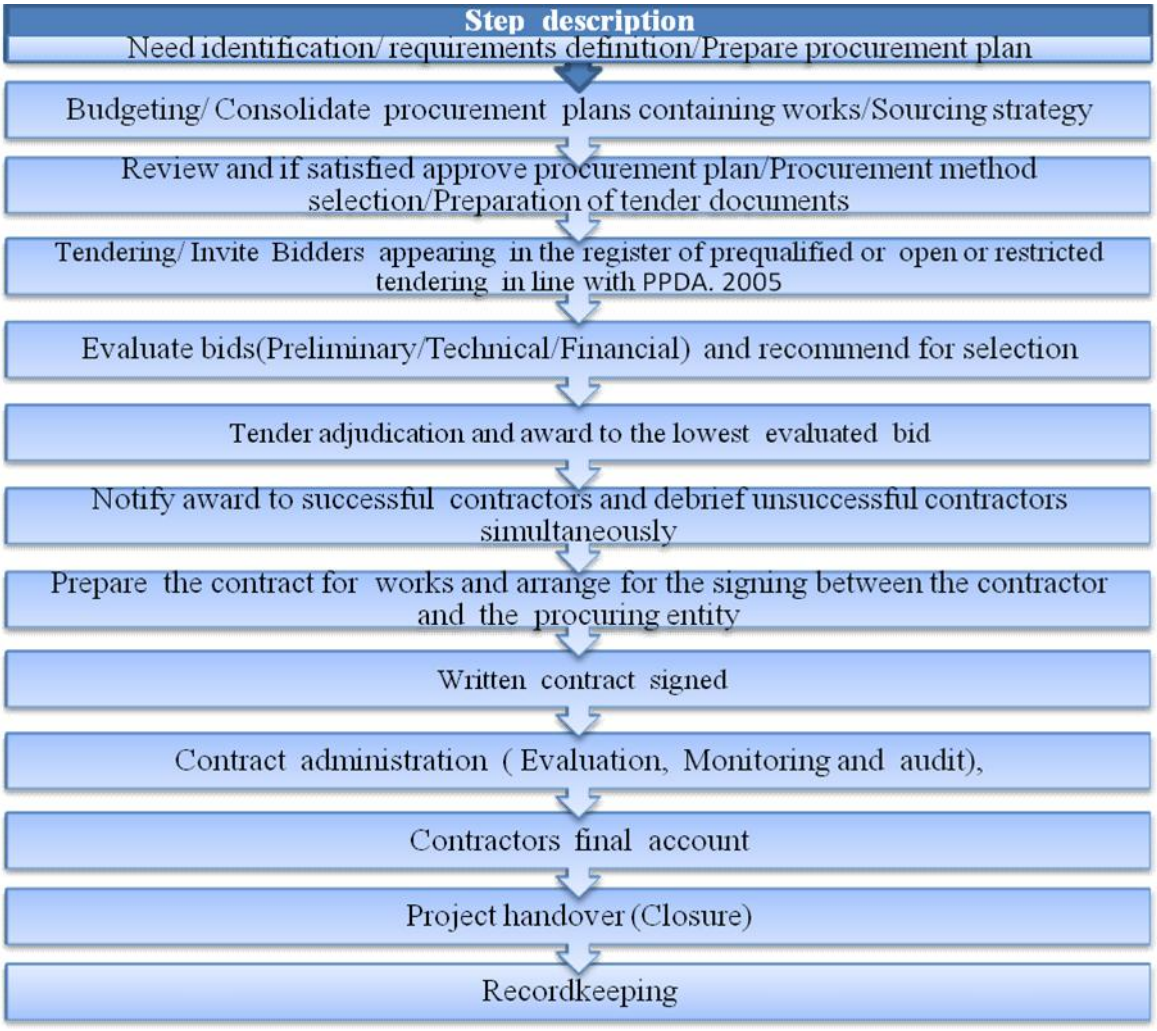


Figure2: 1: Steps in Public Procurement Process

Source: Derived from PPOA Procurement Manual for works (2009) and Mutava (2012)

2.4 Institutional Framework

The Legal framework established Public Procurement Oversight Authority (PPOA), and the Board of the Authority. PPOA has clear responsibilities, which include ensuring that procurement procedures for building project procurement are complied with and assisting in implementation and operation of the procurement system.

The current legal framework provides for a fully decentralized procurement process, leaving the full responsibility of undertaking procurement unit at the level of the individual procuring entities. This decentralization of decision-making authority represents a milestone in the reform process towards a sound and efficient procurement system, and hence a key asset to Kenya procurement system. All public building projects procurement processes are handled at public institutions level (WB, 2007). Control mechanisms, including an effective control and audit system, an efficient appeals mechanism, in case of review of building projects contract award. The Appeals Review Board (ARB) constitutes the first avenue of complaints, and the PPDA provides for ARB decisions which are based on information relevant to the case, which is balanced and unbiased and can be subjected to judicial review. Transparency of public procurement system relies on a number of control mechanisms, including an efficient appeals mechanism (ARB) and an effective control and audit system (PPOA, 2007).

2.5 Social and Economic Responsibility of Public Procurement

Public procurement accounts for a significant percentage of GDP and has a direct impact on economy. According to estimations drawing from National Account Data, governments in OECD member countries spend an average of twelve percent of their GDP on public procurement (excluding procurement state-owned utilities). For instance, the National Accounts Data for 2008 showed that, the Netherlands, the Czech Republic, and Iceland spent over fifteen percent of their GDP by way of public procurement transactions, which are the largest shares amongst OECD countries. Furthermore, public procurement is also a significant activity in the developing world with a study of 106 developing countries finding that the purchases of their governments accounted for approximately 5.1 percent of their combined output (Evenett & Hoekman, 2005). From development point of view, public procurement policies are significant. Reducing poverty and attaining infrastructure, health, education, and other objectives among the citizenry requires that the limited public funds available for public procurement of goods, services and works are properly managed. The

government procurement system is part of conversion process, from the collection of funds to the successful implementation of projects (Hui, Othman, Normah, Rahman, & Haron, 2011 (Hui *et al.,* 2011). Kipchilat (2006) quoting a Comesa report (2004), noted that procurement absorbs 60% of government expenditure and this means that the accountability at all times is important. The procurement process has the potential to deliver very significant public value payoffs to community. They also contend that the procurement of construction projects in the forms of office, hospitals, schools, and courthouses enables government to deliver services in the areas of services, health, education, and justice. The enormous amounts of money involved in government procurement and the fact that the money comes from the public demands accountability and transparency, which are not only national issues, but are also common issues (Hui *et al*., 2011). Generally, the efficient, effective and professional application of public procurement law can contribute towards sound management of public expenditure (Hunja, 2003).

In Kenya for instance, public procurement accounts for 60% of its budget expenditure (Aketch, 2005). The total value of public procurement in Central Government is currently estimated at 10% of the Gross Domestic Product (Juma, 2010). The Kenyan economy at the moment is experiencing growth with the public as well as the private sectors being engaged in numerous development projects with expected socio-economic and governance impacts. The driving philosophy behind this buoyed economic upturn is the Vision 2030, which on its own has enlisted over 120 flagship projects in order to put the country in a new socio-economic and political pedestal (Republic of Kenya, 2007). Therefore, there is need for the various players involved in project development and implementation to enhance the quality of their capacity. This enhancement is reflected in the quality of construction projects and efficiency of implementation.

Public procurement system is therefore fundamental to successful performance construction project during implementation. Actually, public procurement has come to play a major role in making the society better, and thus, there has been much research in

public procurement and its efficient operations. Again, many governments use public procurement to support the development of domestic industries, overcome regional economic imbalances, and support minority or disadvantaged. Evidence shows that an effective procurement system could save government approximately 25% of its expenditure (TI, 2014). Further, public procurement has important economic and social implications, ensuring that the process is economical and efficient. This requires that the whole process is well understood by all the actors (the government, the procuring entities, contractors and suppliers) and the other stakeholders including professional association, academic institutions and the public.

Moreover, this calls for developing countries to put in place appropriate social-economic and political environments characterized by bourgeois democracy, a strong civil society, and public transparency and accountability, for public procurement to work. The process so far is still shrouded with secrecies, inefficiencies, corruption and undercutting resulting to significant waste of resources (Aketch, 2005).

2.6 Effect and outcome on performance in public procurement system

Public procurement system represents a major share of any country's GDP and public expenditure budget. According to Mahmood (2010), public procurement represents 18.42% of the World GDP. These levels of expenditure alone provide sound reasons for analyzing effect and outcome on performance of public procurement system. The overriding objective of a state's public procurement system is to deliver efficiency and "value for money" in public use of public fund (OECD, 2011). Performance in public procurement system is about seeking to answer the fundamental question of whether the procurement system delivers in accordance with the main objectives set.

2.6.1 Factors influencing performance

Procurement is a process that usually starts long before the start of the construction process and ends, with project completion or project closeout, operation and

maintenance (Mubarak, 2010). The procurement team must work in close coordination with the project management team as a whole. Furthermore, the Procurement Manager works independent of the Construction Project Manager (Mubarak, 2010). The public procurement system is built on four pillars-procurement laws and regulations, procurement world force, procurement process and methods and procurement structure. This system is mostly determined by the government and influenced by its economic, cultural, legal, political and social environment (Thai, 2009). Although procurement procedures need to be tailored to enhance the fulfillment of different project performance objectives (Wardani, Messner, & Horman, 2006), clients tend to choose those procurement procedures that they have a good knowledge of and have a habit of using it regardless of any differences between projects (Love, Skitmore, & Earl, 1998). For a new procurement procedure to be implemented, clients need to feel confident on how to use it and have positive attitude towards its effects on outcome (Tysseland, 2008). However, Eriksson and Westerberg (2010) indicated that, procurement procedure (tendering, bid evaluation, subcontractor selection, and contractor self control) generally has a positive influence on project performance (cost, time, and quality).

In Kenya, conflict of interest, bribery, embezzlement, kicks backs, tender manipulation and fraud are observed corrupt practices in the infrastructure projects delivery and procurement system, which have seen the suspension of cabinet Secretaries, Governors, and Parastatals Executive Officers (Aketch, 2005; PPOA, 2007). The severity of corruption practices has intensified the search for more innovative means of delivering infrastructure projects that will achieve value for money. To address these challenges it would require the constitution of sound public procurement system and pro social equity policies that would foster transparency, competition, fairness and cost effectiveness, in public expenditure.

The PPD Act 2005 is anchored in the new Constitution, of 2010 article 227(1) of Kenya, which sets standards concerning procurement requiring the public procurement

system to adopt the principle factors namely: transparency, competition, fairness and cost effectiveness. Indeed it should be noted that, procurement Act must be amended to conform to the constitution (Article 227) which states that "a public entity contracting works, goods, and services, it shall do so in accordance with a system that is fair, equitable, transparency, competitive and cost-effective' (Transparency International, 2014). The principle factors can be said to contribute to public procurement performance success and this is the focus of this study.

2.6.2 Fairness and equitability

Fairness entails that the process of offer and acceptance is conducted without bias, providing timely access to same information to all parties (Watermeyer, 2000). However, according to Allison, (2007), fairness in public procurement context refers to procedural fairness. Procedural fairness has two requirements: *audi alteram partem* (the right of parties to be heard) and *nemo iudex in sua causa* (rule against bias). This relates to the relationship between the public entity and the contractors in relation to each other.

The first relationship requires that sufficient access to the procurement process be provided by procuring entity and that tender opportunities should be publicly available. In addition, a contractor should be familiar with all rules applicable to the process. With regard to the second relationship, the procuring entity should treat tenderers fairly in relation to each other meaning that no tenderers should have an advantage over another. One case in point whereby this regulation was violated is when National Social Security Fund (NSSF) altered a tender for the construction of Nairobi tallest skyscraper to favour Chinese firm (Business Daily, 2015). The advertised tender had condition requiring bidders to provide evidence of having constructed 2No. 40 storey buildings in the past five years, automatically locking out local contractors because in Kenya we have none. Public procurement in the context of procedural fairness is based on administrative law.

Fairness is intertwined with the principle of equity and therefore equitable means “fair and impartial.”

However, Watermeyer,(2004) describes an equitable system as one where the only grounds for not awarding a contract to a tenderer who satisfies all the requirements are “blacklisting”, lack of capability or capacity, legal impediments and conflict of interest. Stephanus,(2009) describes equitableness as the equaling of desperate groups. There exists no test or formula to determine what is equitable. The circumstances to be taken into account include but are not limited to the nature of the parties’ rights and interests as well as those of the state and the public in general. Equity does not necessarily mean that all people or groups should be treated equally and can include, public procurement, measures to address the inequalities. Moreover, the concept is broader than just redress of desperate groups (under preference and reservations, PPOA Act,2013), and needs to be interpreted by taking into account the obligation of fairness and the rights of participants in the procurement process to be treated equally.

According to, Stephanus,(2009) elements that contribute to fairness and equitability in public procurement performance success are namely: (i) Fair, objectively justifiable and non-discriminatory selection specifications and procedures to be used to evaluate tenders; (ii) the compulsory provision and publishing of information in adequate time provided that it does not preclude competition;(iii) the possibility that if in the public interest, procuring entities need not award a tender and may exclude abnormally low tender; (iv) clarification of tenders by procuring entity on request of participants ; (v) a code of conduct enforcing ethical standards for all role players (integrity) and ; (vi) the requirement that tenderers fulfill their tax and socio-economic obligations to the state in order to qualify to participate.

2.6.3 Transparency

The Concise Oxford Dictionary defines “transparent” as easily seen through; evident; obvious; easily understood; free from affection or disguise; frank. However in theory,

transparency could mean visibility within an agency (Schooner, Gordon, & Clark, 2008). The concept of transparency is important in public procurement regimes and is mentioned as one of the principle factor of the Model Laws. Transparency and accountability are mutually reinforcing. Transparency enhances accountability by facilitating monitoring and accountability enhances transparency by providing an incentive for agents to ensure that the reasons for their actions are properly understood (Arrowsmith *et al.*, 2009).

Transparency means decision taken and their enforcement is done in a manner that follows procedures (Osafo, 2003). It also means that information is freely available and directly accessible to those who will be affected by the decisions and their enforcement. In the context of this study, it means that information concerning tender documents at pre-tender stage and at construction stage must be known and accessible to all who participate in the project implementation.

Efficiency in public is an important issue in cases where public procurement account for a large portion of economic activity, example in construction projects. Ensuring transparency in the construction projects procurement procedures is an essential determinant of efficiency, as it enhances the competitiveness of public projects procurement. Opaque and discretionary construction procurement practices reduce incentives for firms to enter the market, and often endanger the relationship between government officials and contractors (Ohashi, 2009).

Ohashi, further in his study reveals that, contractors bid more aggressively under a transparent practice than a discretionary one. Other research work by Evenett and Hoekman, (2003,2004), assume that a competitive bidding environment, improves transparency in construction projects procurement procedure with two effects: (i) with regard to demand, the improved transparency diverts government expenditure away from construction works that could involve bribery; (ii) with regard to a contract, it increases the number of contractors involved in the bidding process.

Watermeyer,(2003) describes a transparent system as one, which the procurement process and criteria upon which decisions are to be made is published. The decision, include decision made during the procurement process and decision to finally award the tender. All information is publicly available giving reasons for the decision. This is possible to verify that the criterion was applied in evaluation. Watermeyer (2003), further indicated that, public building projects procurement is considered to be transparent if: (i) the Terms of Reference (TOR) upon which the building procurement process are to be conducted and the criteria upon which any decisions are to be made are properly documented and made available to public (Watermeyer,2003); (ii) the eventual procurement contract award decision, and where appropriate, any intermediate decisions, are made publicly available as are the reasons given for these decisions and; (iii) is possible to verify that the documented procedures and criteria were indeed applied.

Transparency serves as performance indicator of another objective of the procurement system- integrity. The widely accepted assumption is that, when transparency increases, corruption decreases. It is for this reason that the World Bank promotes transparency as a key objective in public procurement reforms in developing countries. Thus, transparency should be seen in every stage of building project procurement process. Public procuring entities rely upon publication- providing notice to the public as away to achieve transparency. Today, internet has reduced the cost and effort of promoting transparency, and some developing countries, such as Chile and Mexico have developed web-based systems that enhance sharing construction projects procurement–related information. With regard to public building projects procurement, transparency must be ensured through all the stages of the process namely: (i) compilation of the tender requirements; the invitation to tender; the processing and evaluation of the tender (Preliminary, technical and financial); (ii) the contract award, the review procedures and; (iii) the contract administration, monitoring and evaluation. However, transparency in construction projects procurement can be improved upon through (Almeida, 2004 and

Stephanus, 2009): (i) the capturing key information in an electronic data base and the use of web-based information technology to publish information on procurement opportunities and awards of contracts; (ii) the harmonizing of procurement processes, procedures and methods within a country; standardisation of procurement documentation such as Standard Tender Document (STD); (iii) the introduction of challenge procedures in the form of adjudication where procurement processes, procedures and methods are comprehensively documented; (iv) providing that the criteria for evaluating tenders are specified; providing for a right to be present at the opening of tender; (v) providing for reasons for the award and rejection of a tender; (vi)providing for the obligation to keep a record of the proceedings and;(vii) requiring publication of invitation to participate in tenders and providing that information on modifications or alterations to tenders is given at pre-tender stage (Almeida, 2004 and Stephanus, 2009). Transparency in public building projects procurement process can be regarded as transparent when the terms of reference (TOR) and conditions are clear and available to all tenderers and when after the decisions are made adherence to them before mentioned terms and conditions can be verified (Stephanus, 2009).

2.6.4 Competition

In public procurement systems, competition is seen as a way to obtain the best value as an outcome, which is an objective of public procurement systems. Competition is more accurately seen as a means to achieve other public procurement goals. Individuals and private companies may not talk or think in terms of competition, though they are more likely to talk and think about process for choosing contractor as “shopping round” or conducting market research (Schooner *et al.*,2008).

Allison,(2013) indicates that, the principle of competition is said to be intertwined with cost-effectiveness and involves the achievement of value for money. In construction procurement sphere, the two aspects of competition are usually combined and government invites bids and tells the contractors that they are in competition with

others. Akech (2005) asserts that, the principle of competition entails contracts being awarded by holding a competition between a number of competitors to establish which one of them can offer the most favourable terms that may deliver government's project. Akech (2005) further asserts that, competition not only ensures that government obtains value for money but is also important in maintaining the integrity of public procurement system. Competition is a means to fight corruption, allowing more contractors to compete for work that has regularly gone to long-term contractor may disrupt "cozy" relationship between the incumbent and the acquisition staff. Competition improves transparency and accountability. Unsuccessful contractor may have an interest in demanding public information why he did not obtain the contract; bid protests, that can inject transparency and accountability in public procurement system.

As Schooner *et al.,(*2008) point out, competition is also a restraint on efficiency. Competition is often at odds with, or at least perceived to be at odds with efficiency because it slows things down. Schooner notes further that, efficiency is often at odds with competition, transparency, and best value. There are, situations in which procuring entity is needlessly and justifiably inefficient and in such cases, it can be improved without compromising any of the goals. However, improving efficiency carries a price, in terms of losing some competition, transparency, and risk avoidance. Competition is a key factor in ensuring that governments, and their citizens, receive best value for money in their construction projects procurement. There are at least three avenues through which competition predict desirable performance in building projects procurement. First the free entry and absence of collusion, prices will be driven towards marginal costs. Secondly, contractor will have an incentive to reduce their operational costs over a time. Thirdly, competition serves as an important driver of innovation (United Nations, 2011).

However, competitive approach in tendering lend to cut-throat price competition and inadequate profitability benefit no-one (Prescott, 1998). According to Stephanus,(2009) the competition elements that contribute to procurement performance success are

namely: (i) the use of open tender procedures as far as is practical;(ii) the setting of realistic time frames; (iii) the provision of and accessibility of relevant information; provision of clauses on how to deal with abnormally low tenders; (iv) the exclusion of tenders on the basis of fraud, corruption, mal-performance, and false declaration;(v) the disclosure of the evaluation criteria, which must be objective and quantifiable, and to relevant weight to be attached thereto, for the award of the tender and; (vi) the availability of alternative methods of procurement should the circumstances so requires (Stephanus,2009).

2.6.5 Cost-effectiveness

Allison, (2007) argue that, cost effectiveness should be applied throughout the project procurement process from, project identification, formulation, the contract administration, evaluation, monitoring and audit. However, procurement system should be standardized as far as possible and provided with sufficient flexibility (Watermeyer, 2004). This is to facilitate the attainment of best value procurement in terms of quality, schedule and cost, using the least amount of resources necessary to effectively manage and control the building procurement process. Stephanus (2009) differs from the researchers discussed above and indicated that, cost-effectiveness does not entail preferring the lowest evaluated tender only, but should involve other factors. These factors include promptness' of delivery, the quality, future-operating costs of the space and similar factors. Stephanus (2009) notes further that, particular circumstances need to be taken into account as emergencies, for instance, may require non-competitive methods to be used such as negotiated tendering method. Efficiency need to be taken into account as part of cost-effectiveness.

Cost-effectiveness must be ensured during the building project contract administration and management phase. This should be put into consideration when drafting agreement and conditions of contract. In particular, proper procedure and methodology of contract administration, dispute avoidance, and resolution mechanism are essential in large

construction projects. For public building projects procurement to be effective, Stephanus (2009) proposes several provisions; (i) the keeping of a record of proceedings such as tender meeting, and site meeting; (ii) provisions on how to deal with abnormally low evaluated tenders; (iii) measures put in place to ensure effective contract evaluation, monitoring and audit; (iv) strict time frame adhered to at tendering stage and; (v) predictable cash flow from the procuring entity.

2.7 Project success performance

According to Greer (1999), a project is successful if it satisfies all the three legs of the triple constraints, namely: quality cost and time. Although the causes for project success and failure have been the focus of many researchers, there has been no consensus on the issue. Other researchers make a distinction between project success and project management success (De Wit, 1998, Pinto & Slevin 1988). Pinto and Slevin (1988) argue that in spite of extensive research there has not been convergence on the components and causes of project success. For instance, they contend that project success is measured by comparing the project outcomes to the overall objectives of the project; whereas project management success tends to be measured against the traditional measures of performance, namely, cost, time and quality. Cooke-Davies (2002) indicated that, delivering project success is more difficult than delivering project management success, because it predictably involves aspects which may be beyond the control of the project team. Identifying critical success factors and potential pitfalls in project at the front-end (knowing beforehand as much as possible and how to respond) will help project manager to minimize risks and ad hoc approach in managing uncertainties (Torp, Austeng, & Mangensha, 2004) (Pinto and Kharbanda, 1995) as cited in (William, 2009). In Israel, William (2009), used 127 projects executed and identified three different factors namely: (i) factors, which are independent of the project characteristics; (ii) factors which are solely influenced by uncertainty and; (iii) factors which are solely influenced by scope. However, Belassi and Tukel (1996) differs from the other researchers discussed above and identified a framework to helping

project managers to understand the intra-relationships between factors in different groups. The factors related to project, the project manager, the project team, the clients' organisation and the external environment. However, framework looks more convincing and its strength lies in the fact that it opens itself up to several other factors that could be relevant based on the context of the project (see Table 4: 2 below).

Table 2: 2: Group of Performance factors

No	Performance Factor	Factors
1	Factors relating to the project Manager	Ability to delegate authority, ability to trade-off , ability to coordinate, perception of his role & responsibilities, competence, commitment
2	Factors relating to the Project Team members	Technical background, communication skill, trouble shooting, commitment
3	Factors relating to the Project	Size and value, uniqueness of project activities, density of a project, life, urgency
4	Factors relating to the organisation(firm)	Top management support, project organisational structures, functional manager' support, project champion
5	Factors relating to the external environment	Political environment, economic environment, social environment, technical environment, nature, client, competitors, subcontractors

Sources: Belassi and Tukel, (1996) as cited in William (2009).

Furthermore, measure of time, cost and quality for many years have been used to evaluate the performance of building projects (Chan, Scott, & Lam, 2002). In his work (Artkinson, 1999) has named these criteria "*the iron triangle"*. But Schenlar and Levy (1997) takes a contrary opinion by pointing out that the traditional measure (time, quality and cost) were not really one homogeneous dimension. Shenhar *et al.,* (1997) notes further that while meeting project resource constraints (time and cost) is one thing, meeting specification (quality) is another. Indeed, Artkinson basic criteria are not

appropriate for continuous improvement because they are ineffective in identifying the causes of productivity and quality loss argued (Alarcon, 1998).

Additionally, a number of researchers identified the importance of procurement-related factors (Walker and Vines 2000; Kumaraswamy and Chan 1999 and Pocock 1997). Dissanayaka and Kumaraswamy (1999) defined the scope of procurement as the framework within which construction is brought about, acquired, or obtained. Therefore, one attribute is used to measure this factor namely procurement method (procedure adopted for the selection of the project team and in particular the main contractor).

2.7.1 Performance indicators

Key Performance Indicators (KPIs) is a compilation of data measure used to assess the performance of a construction operation (Coax, Issa, & Ahren, 2003). Coax *et al., (*2003) further asserts that, different participants think differently while they analyse the performance of a project. KPIs give information on the range of performance being achieved on all construction activities. Chan and Chan (2004) have proposed two groups of key performance indicators for construction project success. The first group was objective measures, which were the issue of cost, time, safety, and environment. The second group was subjective measures, which comprised of quality, functionality, and satisfaction of different project participants. In this regard, it could be possible to deploy effective construction project management through the project as a temporary organisation and to ensure good monitoring and controlling of those critical factors that impact on the building project performance in identifiable criteria. In UK best practice programme (BPP) launched the “key performance indicators” (KPIs) for construction (Prescot, 1998). These KPIs give information on the range of performance being achieved on all construction activity as shown in Table 2:3:

Table 2:3: Best practice programme (BPP) key performance indicators

Key performance indicators (Bprc 1998)
Client satisfaction – product
Client satisfaction-services
Defects
Predictability-cost
Predictability-time
Profitability
Productivity
Safety
Construction cost
Construction time

Sources: UK best practice (1998)

However, there are many attempts to explore other concept of success indicators and to develop different frameworks for measuring the success of construction projects. For example (Lim & Mohammed, 1999) have looked at construction project success from the macro and micro view-points. The micro viewpoint related to the project construction phase, where the project goals like time, cost, performance, quality, safety were taken into consideration. While the macro viewpoint dealt with the users and stake holders' satisfaction. Lima and Mohamed have highlighted the importance of completion and satisfaction criteria; however, they have failed to take into account the viewpoint of strategic goals of the construction company. Some researchers have merged the strategic impact of project with other dimensions of project success. For example (Bacarini, 1999) as cited in Samiaa *et al.,* (2010) has separated project success into two components. The first one is project management process; and stakeholders' satisfaction. The second component is product success which comprises of owners' strategy, users satisfaction, profitability and market share. However, he has not distinguished the strategic dimension of project success.

The problem with the traditional performance measures is that, most of the measures are only capable of reporting on performance after they have occurred (William, 2009). Moreover, the KPIs do not offer the opportunity to change; and that they are designed as post results "lagging" (Beathan, Anumba, & Thorpe, 2004) as cited in William. Beatham *et al.*, describe the two variants of KPIs as dimensions of assessment under "lagging" or "leading" dimensions/measures. For example, if client satisfaction is measured after completion, it is considered a lagging measure. Hence, in evaluating the public procurement system and its influence on the contract performance during project implementation, it's important to understand that KPI evaluate contract performance at the closure of the project. However, this study focuses on project performance predictors at the early stages of project procurement.

2.8 Contract Formulation

The process of making the contract is divided into three parts: (i) selecting the contractor; (ii) establishing the contract price or how the price will be arrived at (The Aqua Group,1999) and; (ii) deciding on the type of contract and the particular terms and conditions under which the works will be carried out. Client in the light of advice he receives from his professional advisers will normally make the choice of the type of contract, and the particular terms and conditions, under which the work will be carried out. The choice must be made at early stage, as it will affect the way in which the contract document is prepared. If competitive tendering is to be involved, the type of contract and the actual conditions to be used must be defined before contractors are invited to tender (The Aqua Group,1999). However, a range of contracts available to choose from is considerable and within each general type of contract a choice can be made as to the particular terms and conditions which are most suitable to circumstances. For instance, Contract Agrrement-1970 Edition inherited from colonial government, had vested all procurement of building works to the Ministry of Land, Housing and Urban Development. Currently all public procurement entities are supposed to use the Standard Tender Documents (STD) as provided by the PPOA and the documents are of

three versions: (i) for building and associated civil works ;(ii) for civil engineering works and; (iii) for small works whose value does not exceed 5million. PPOA STD for building and associated civil works is the version used in formulation public building projects (Republic of Kenya, 2009).

2.8.1 Selection of the contractor

The purpose of any tendering procedure is to identify a suitable contractor, at a time appropriate to the circumstance, and to obtain from him/her at the proper time an acceptable tender or offer upon which a contract can be let (The Aqua Group,1999). In fact, the purpose of tendering is the selection of the contractor and obtaining of the tender or offer. Although any tender must take account of the conditions of contract under which the work will be performed, the tendering procedure is not dependent on the type of contract to be used. The contract conditions have the same significance as, for example; contract drawings and bills of quantities, which together make up the total contractual arrangements. Consequently, considering the purpose of tendering, one must think in the broadest terms. A tenderer quotes not just a price but also a standard of quality and time in which to complete the work. Public procurement law requires that construction for public works projects to be procured using a competitive sealed bidding process and awarded to the responsible bidder submitting the lowest evaluated bid. The majority of public sector construction contracts continue to be awarded solely based on the lowest price. Along standing concern expressed by public owners, however, is that low bid, while promoting competition and a fair playing field, may not result in the best value for money expended or the best performance during and after construction. The practice of awarding contract based on the lowest bids, which is prevalent in all agencies, was considered the major cause for poor quality inputs and outputs (Riswan & Syed, 2008). Nguyo (1988) alludes to unprofessional practices, which result in awarding of contracts to incompetent contractors who can cause delays in completion of works. Talukhaba (1998) in his study concludes that the method of tendering is a factor

in time overrun. He suggests that contract periods often determined during tendering process often give an illusion of project delay when this is not scientifically determine.

Indeed, under legislation guiding procurement in Kenya provides for various kinds of tendering procedures to be followed in the tendering process up to the signing of tender. Under Legislative and regulatory framework pillar, the PPD Act 2005, establishes the procurement methods to be applied namely: open tendering, international tendering, and alternative procurement procedures such as restricted tendering and direct procurements. Public procurement of building works follows a carefully established procedure under the Public Procurement and Disposal Act 2005. The act empowers the public procurement and disposal regulations 2006 (Republic of Kenya 2007). The regulations include entities and the roles of the entities in the tendering processes that include tender committees, evaluation committees among others. The Table 2:2 shows stages involved in the tendering process.

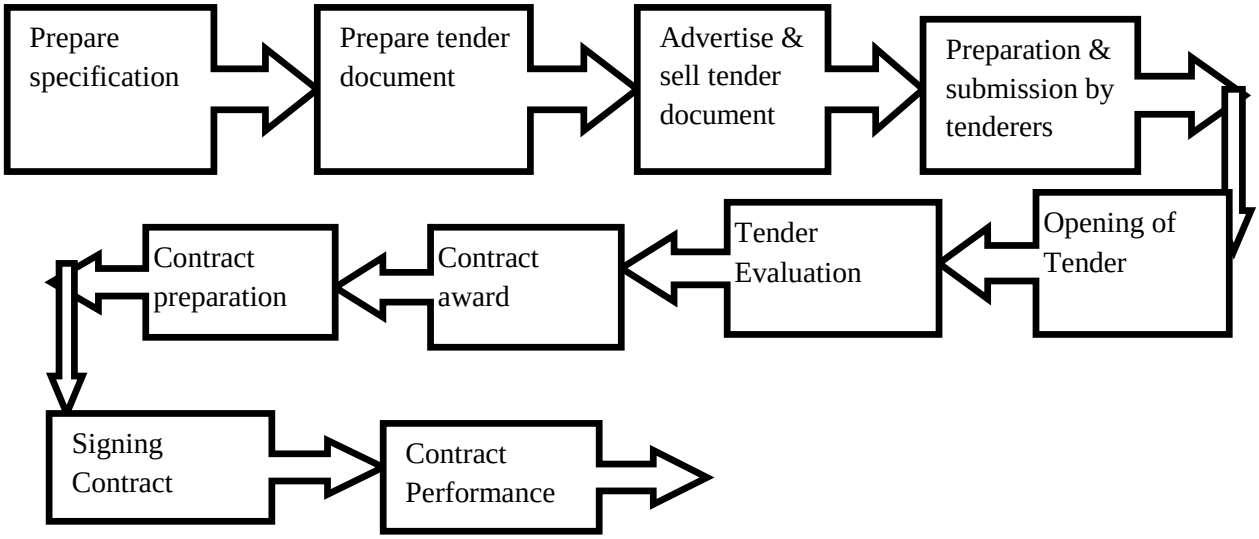


Table 2:2: Stages in tendering procedure

Source: Mwangi, PPOA Bulletin (2009)

2.8.1 Evaluation of Tender

According to (Sidik., 2010) contractor evaluation is the process of measuring project specific attributes. Sidik (2010) further assert that, once the bids are declared valid, the actual point's evaluation procedure can begin in what is referred to as technical evaluation. Technical committee conducts the technical evaluation. The assessment of the non-price criteria is to be documented before moving onto the next stage of the evaluation (Sidik., 2010). Once tenders have been assessed against the technical criteria, a financial evaluation of prices tendered or quoted can be undertaken. The results of the financial assessment are to be documented before moving to the next stage of the evaluation. Finally, having separately assessed tenders against technical and financial criteria, a comparison of the 'technical worth' and 'price', is undertaken in accordance with the criteria established in the tender document, to determine the lowest evaluated tender(PPOA,2009). This stage will establish the final ranking of the tenders.

2.8.2 Awarding the contract

Moreover, once the evaluation of the bid is over, secretary of the evaluation committee prepares all the required documentation after which the final ranking is established, and the contractor with the highest total (lowest evaluated bidder) is awarded (PPOA, 2009). Once the award approval is granted, the contracting authority notifies the successful tenderer in writing that the tender has been accepted for contract award. Successful bidder must reply in writing within the 14 days that he has accepted the award (PPOA, 2009).

2.8.3 Mandatory standstill period and contract conclusion

Finally, contracting authority must notify all tenderers and candidates of the contract award decision before it concludes the contract with winning tenderer. Section 68(2) of the Act provide for notification followed by the 'mandatory standstill period' of 14 days

(PPOA, 2005). Once the mandatory standstill period has expired, and if no complaint has been received, the contracting authority may proceed with the conclusion of the contract, using the contract template and contract conditions that were included in the tender documents and completed by the successful tenderer with its tender.

2.8.4 Project implementation

There is a clear transition from contract award, project mobilization to construction operations. The construction operation is the stage referred to as project implementation. Public procurement general manual for works refer to this as contract supervision and administration (PPOA, 2009). During project implementation, it is essential that actual performance be compared with planned performance in all of these areas and action taken to remedy any indicated deficiencies. The responsibility is termed as monitoring and control. This ensures that cost effectiveness is applied throughout the procurement process (Bolton, 2007). Additionally, public building projects are public properties, requiring that all the process of monitoring and control are transparent as possible through documenting for scrutiny by public through audit. With the start of construction operations in the field, the project takes on a different focus and the contractor is called upon to perform a variety of responsibilities. These responsibilities are within five main levels namely (PPOA, 2009): time control, quality control, cost control, finishing, and usage, monitoring and evaluation.

Time control: this involve periodically, perhaps monthly, when the contractor will compare schedule progress with that shown on the project programme. The purpose is to determine whether the various activities that were planned to be active during the previous period were actually active, the extent of their progress and especially the anticipated project completion date based on progress to date (Bennett, 2003). Bennett further asserts that, the other purpose of the update is to incorporate any new information about already planned activities, to add information about new job not

previously planned for. This will help to determine their impacts on other activities and on the overall project completion date.

Cost control: This involves the implementation and completion of the project within the contract price (PPOA, 2009). According to Bennett (2003), there three purposes of construction cost systems namely:- 1) to provide a means for comparing actual with budgeted expenses and thus draw attention; in timely manner, to operations that are deviating from the project budget; (2) to develop a database of productivity and cost performance data for use in estimating the cost of subsequent projects and; (3) to generate data for valuing variations and changes to the contract and potential claim for additional payments. However, the most important purpose is the monitoring and controlling of costs during the construction operation phase as a key aspect of cost effectiveness, based on whatever system was established during project mobilization. The following are expected outcomes from periodic monitoring of cost: - (i) identification of any work item whose actual costs are exceeding their budgeted costs, with subsequent actions to try to bring those cost into conformance with the budget and; (ii) estimating the total cost of project at completion, based on the cost record so far and expectations of the cost to complete finished items. PPOA regulations require the close monitoring and cost control to be done under the following aspects: bill of quantities; variations; payment certificates; timely processing, approval of certificates; price adjustments, securities and; penalties/compensations. Finally to control physical variations that have the tendency of increasing the contract price and extending the contract duration which should be kept to the barest minimum (not to exceed 15% for a works contract) (PPOA, 2009).

Quality management: first, what is quality? There are many definitions. The Institute of quality Assurance (2002) says this about quality: in its broadest sense, quality is a degree of excellence: the extent to which something is fit for its purpose. In the narrow sense, product or service quality is defined as conformance with requirement, freedom from defects or contamination, or simply a degree of customer satisfaction. The Kenya,

public procurement manual for work, (2009) define quality as involving the execution of the project in conformance to technical specifications under various aspects the contract namely: tests; identifying defects; correction of defects during: construction period; defect liability period; remedying of uncorrected defects. The contractor's activities in assuring quality are said to involve both quality assurance and quality control. Bennett (2003) distinguishes between quality assurance and quality control. He argues that quality assurance is a planned and systematic actions focused on providing the members of the project team with confidence that components are designed and constructed in accordance with applicable standards and as specified by contract'. On the other hand he views control, as ' the review of services provided and completed work, together with management and documentation practices that are geared to ensure that project services and work meet contractual requirements. Thus, a contractor's quality assurance programme should be transparent and includes all activities that 'ensure quality' including (but certainly not limited to) selection of subcontractors, training of the workforce, use of proper methodology and the various testing activities. Quality control is one aspect of quality assurance, the aspect that (1)'reviews' work done to determine whether it conforms to requirements(the monitoring function) and (2) brings it into conformance if the examination identifies defects(the control function). Moreover, total quality management (TQM) has taken on increasing importance throughout all industries worldwide during the past twenty years. Many contractors subscribe to its philosophy and their quality assurance/quality control programme derives directly from its basic tenets (Bennett, 1996). Although TQM is a series of statistical techniques for measuring and controlling quality, it really includes a management philosophy and approach that goes well beyond these techniques, as the definition suggest. From this study the researcher has chosen to treat quality management mainly on project implementation which is an issue throughout the project's life cycle. Traditionally descriptive specifications have been stipulating the process the contractor must follow; performance specifications now govern many construction operations. The method utillised to achieve the required performance is left

to the contractor. During the project implementation phase, the contractor is usually required by the contract to furnish and abide by a quality plan.

2.8.5 Works Manual

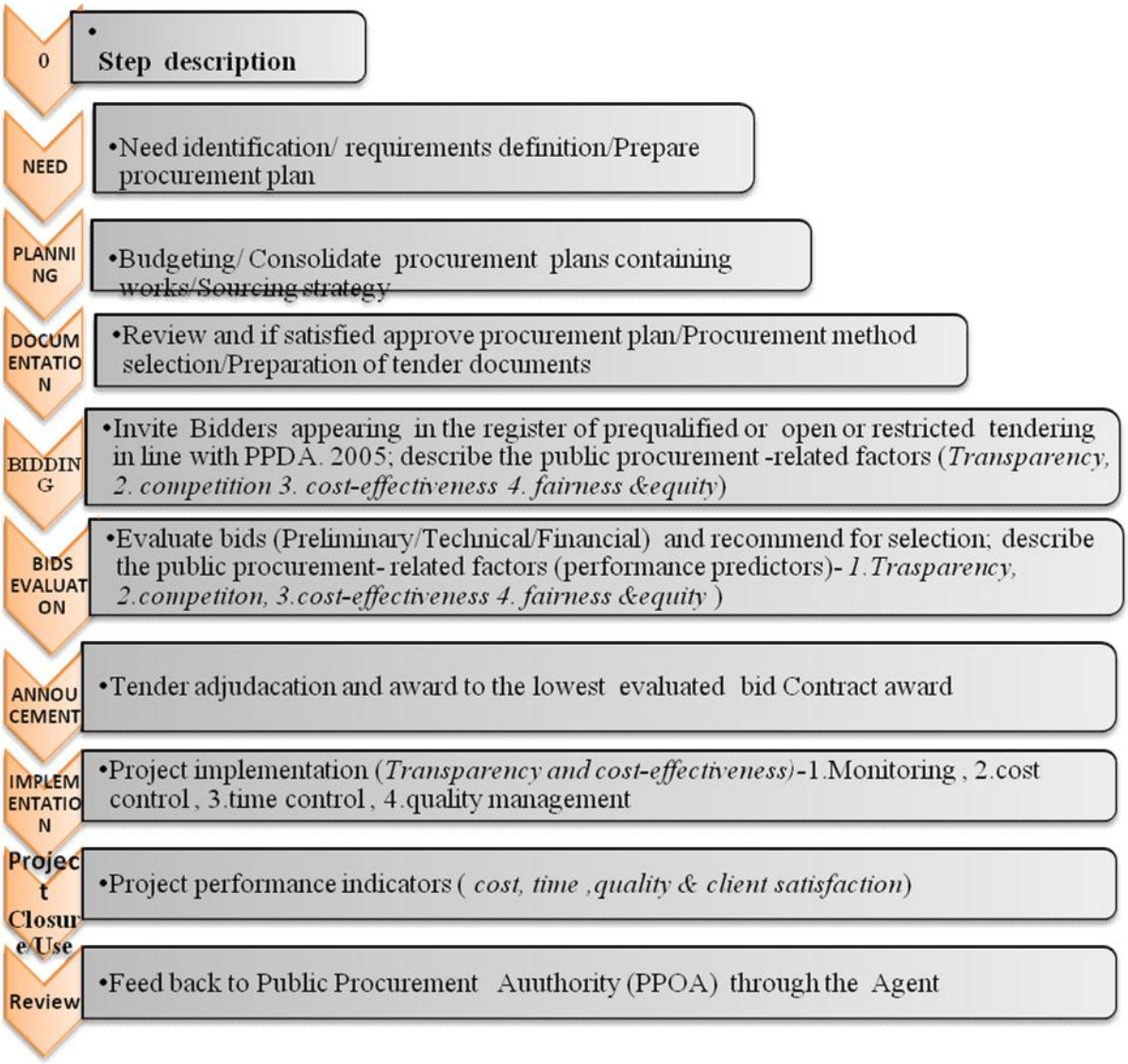


Figure 2.3: Works manual

Source: Adapted from PPOA Procurement Manual for works (2009) and Mutava (2012)

PPD Act 2005 stipulates the legal and regulatory framework from the highest level (Act and Regulations) down to the more detailed operational procedures, guidelines, model tender documents, and standard conditions of contract. Indeed, the act provides procurement manuals as guidelines and systematic procedures to assist procuring entities to understand public procurement system in accordance with the law. The manual incorporate policy provisions and procedures for the operation, management and reporting of works procurement.

The manual details the standards and procedures to be followed in the procurement of works. These standards, policies, and procedures are meant to: ensure transparency, competition, cost-effectiveness, fairness, and equity in all operations with aim of promoting consistent application of procurement practices and international standards and; provide uniform procedures for the procurement of works. The manual is expected to be subjected to continuous review by the PPOA to reflect the changing needs and improved procedures and practices. However, the manual as applied to the procurement of works need to be more broad and purposive in their interpretation of the principles of public procurement system. The interpretation is generalized and it is more on procurement of goods and services as opposed to works. This study finding intends to collect the views of the sampled population concerning the public procurement factors that influence public building projects during implementation with view to enrich policy manual by describing the factors.

The Table 2:3 shows work manual that shows procurement process with public procurement-related factors as predictors of contract success performance namely: transparency, competition, cost-effectiveness, fairness, and equity.

2.9 Conclusion to the Literature Review, Research Gap, Theoretical Framework and Conceptual Framework

2.9.1 Conclusion to the Literature Review

Public procurement is the epicenter where government budget get translated into services largely through the governments purchase of construction works, services and goods. Furthermore, public procurement must be transacted with considerations in mind, beside the economy. These considerations include transparency, competition, cost effectiveness, equity and fairness. Procurement procedures used in procuring public building projects are found in the PPDAct2005. The public procuring entities are bound by the Act, which is anchored in the new Constitution of Kenya section 227(1), therefore the procedures used must be fair, equitable, transparent, competitive and cost effective.

Undesirable public building contracts performance results in Kenya have been well documented in various studies. Identified in various forms as delays, cost overrun, poor quality and poor project performance has been noted as ban of public building projects in Kenya. Various scholars have had a great interest in the area of public procurement-related factors and whether the factors contribute to building contract performance. Researchers therefore need to develop a body of knowledge on the public procurement-related factors. Determine which factors that predict contract performance; describe them in a building works manual for use by public entities for successful contract implementation. This body of knowledge on performance predictors at the early stages of project procurement in Nairobi-Kenya includes cost effectiveness, transparency, competition fairness and equitability. Studies that purpose to provide better understanding as to why there are undesirable public building contracts performance results (cost overrun, and poor quality) despite legal framework and regulations, would be of interest to scholars, public procuring entities who built buildings to provide services and other strategic objectives. It is of great benefits to further understand the

influence of public procurement system on performance of public building project and how the system can be used as performance predictor at early stages of project procurement.

2.9.2 Research gap

The public procurement system influence on contract performance of projects reviewed in this chapter covers public building projects. The study indicates that specific research has not identified public procurement-related factors that influence contract performance. However, current public procurement system has greatly affected contract performance during project implementation. Therefore, there is need to addresses the public procurement-related factors that predict project success performance.

2.9.3 Theoretical Framework

Theories concerning public procurement system can be described as special case theories of public sector. Several theories put forward by various scholars provide a theoretical basis for public procurement system. Reimarova (2011) cited in Coase (1998) begins with the theory of transaction cost and stress that transaction costs are influenced by the institutional system of a given country. The institutional system is one of the most important aspects which influence the performance of an economy. Reimarova (2011) defines transaction costs as any costs that arise from a contract (building contract).

Similarly, the principal agent theory is also relevant to the study. The theory is based on the relationship between the principal and agent, where the principal influences performance of some tasks by the agent in favor of the principal (Health & Norman, 2004). In the context of this study, the government of Kenya (Principal) engages Procuring Entities (Agents) and PPOA to undertake public procurement of building projects and enforcing the Public Procurement Act (2007) to influence the performance of the projects. With this relationship, the principal engages the agent who acts and

makes decisions on behalf of the principal { (Bergen, Dutta, & Walker, 1992) (Eisenhardt, 1989) }. Agency theory, according to Eisenhardt, (1989) is directed at the ubiquitous agency relationship in which one party (the principal) delegates work or tasks to another party (the agent) who performs the work. Agency theory describes this type of relationship using the metaphor of a contract (Jensen & Meckling, 1976).

However, theory concerning project implementation/performance includes management theory of project management and production management. Project management is founded on three theories planning, execution, and control (Koskela & Howell, 2000a). Arguably, it holds that production is a transformation of inputs to outputs- this is a theory of project management. Regarding planning in project implementation, the convectional theory, management as planning, implies that planning is a core task of management. Execution is conceptualized as one-way communication (orders), within classical communication theory. For control, the thermostat model suggests changing the performance level for achieving a predetermined goal in case of deviation. The predetermined objective is the completion of project on time, using the projected cost to attain the specified quality for client satisfaction. On the other hand, Taylor (1911) considered management a process and one that “if approached scientifically” would lead to success. His principles of scientific management initiated the concept of breaking a complex task down into a number of subtasks, and optimizing the performance of each task. The public procurement-related factors that may influence the contract performance of building projects are quite diverse. The specific variables considered for this study were transparency, competition, cost-effectiveness, fairness, and equity. The variables were seen as possibly predicting successful performance of public building project in Nairobi-Kenya.

2.9.4 Conceptual Framework

The study derives its conceptual framework from various theories based on public procurement system and performance: transaction costs, project management, and

management theory. Consequently, study variables explained within the context of transaction costs and principal agent theories includes the public procurement system as independent variable while contract performance of public building projects is the dependent variable explained from the context of management theory. This is indicated by this study's conceptual framework as shown in Table 2:4.

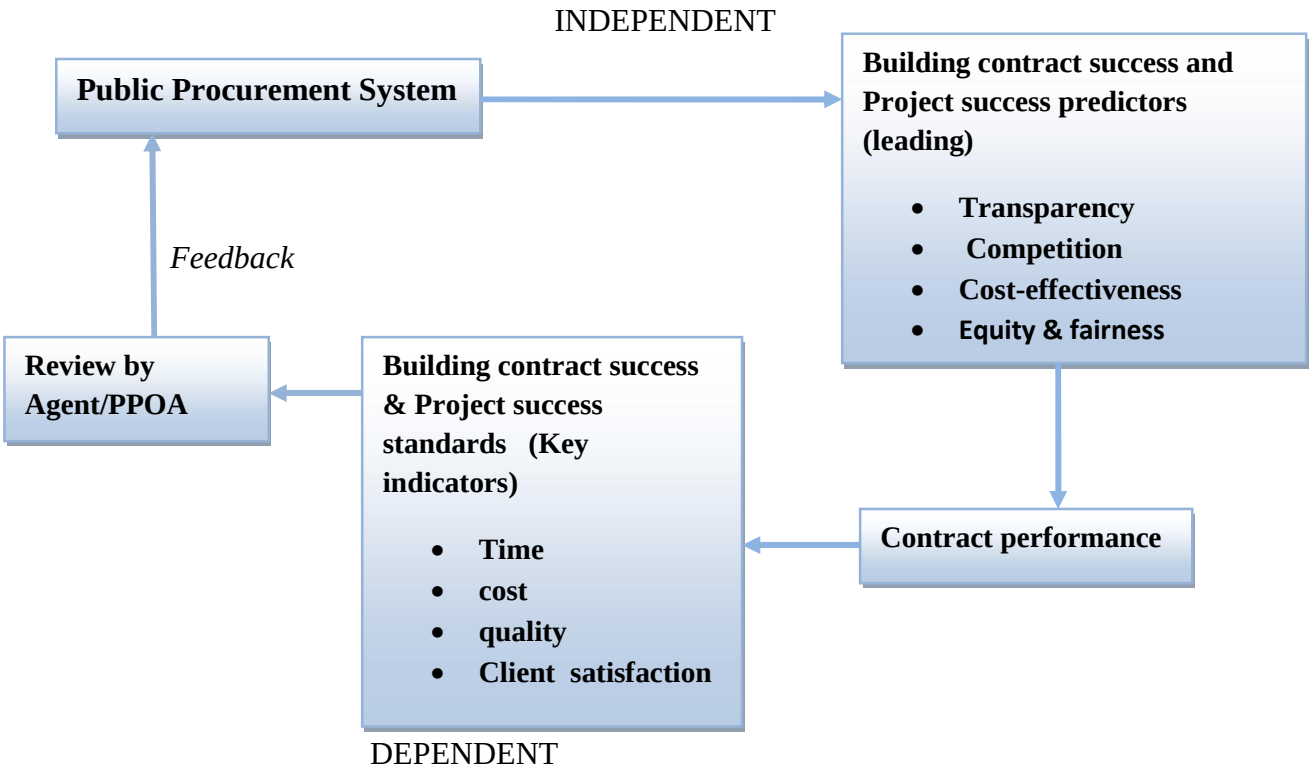


Figure 2.4: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this chapter is to address the methods used in this research study. Items addressed include: - Research design, strategy, study area, study population, nature and source of data, and sampling, sample size, methods of data collection and instruments used finally the methods of data analysis and presentation.

3.2 Research design

Research design is a representation plan, the structure and the strategy of investigation that is used to gather, analyse, and answer the research questions. A research design provides a framework for collecting and analyzing the data (Bryman, 2004). The study is a survey knowledge and information which the Public Procuring Entities have on influence of public procurement system on the building contract performance during project implementation. Therefore, the Study sought to explore for information from public entities in Nairobi City.

A descriptive research based study was used using a cross-sectional survey design. Bryman, (2004) indicated that, cross-sectional design entails collection of data on more than one case at a single point of time so as to collect a body of data in connection with more than one variable which is then looked at to detect patterns of connection. Additionally descriptive research is a method of collecting information by administering questionnaire or interviewing to sample of individuals (Orodho, 2004) and it may be used when collecting information about people's attitude, opinion, habits, education or social issues. Questionnaire and interview schedule was used to collect primary data from three groups namely; procurement officers, project supervisors (Project Managers, Engineers, Quantity Surveyors, Architects) and contractors. The questionnaire had four

parts and the data sought include: Part A bio data for the respondents, value of project, Part B public procurement-related factors that influence performance, extent of public procurement factors influence, Part C other factor that affect performance of public building project Part D the respondent asked to score and rank the building projects performance indicators at Likert Scale1-5, finally open questionnaire where the respondent were to make recommendations. Additionally, face to face interview was conducted to 11 interviewee. The data ranged from, impact of public procurement-related factors, performance indicators, and impediments to effective to public procurement system on performance of public buildings during implementation. The qualitative data was analysed and used in the recommendations.

3.3 Research Strategy

The research strategy for this study is both qualitative and quantitative. This is a research strategy that employs narrative and quantification in the collection and analysis of data as observed (Bryman, 2004). This strategy was preferred since the aim of the research was to collect information from sampled respondents using questionnaires and interview and later quantitative techniques used in data analysis.

The questionnaire administered was first subjected to a pilot study of 11 respondents. Based on the feedback from pilot study respondents; corrections were effected on the research instrument in form of questionnaires for mass distribution. Authority to collect data was necessary and this was applied for and granted from the National Council for Science and Technology on 24th April 2014. A copy of the research clearance permit and authorization letter is included in appendix H.

3.3.1 Study Area

This study was conducted in Nairobi County. Nairobi County occupies an area of about 700 sq. km (Mitullah 2003) with a population size of over 3,375,000 (Republic of Kenya 2009). Nairobi City was selected from other cities due to its status of being the

Seat of Government, the Capital of Kenya and having the highest concentration of building construction activities in the country (Republic of Kenya, 2014).

3.4 Study Population

Population refers to an entire group of individuals, events, or objects having a common observable characteristic (Mugenda & Mugenda, 2003). The target population for this study was public procuring entities with ongoing building projects in Nairobi in the last five years since 2009. PPOA classify public procuring entities in three categories (Republic of Kenya, 2009). Based on classification the researcher used procuring entities in category A and B leaving C. This was informed by the fact that, studying all the projects being implemented by public procuring entities in category A, B and C (see Table 3:) was prohibitive in both time and money for the researcher, and the participants. Table 3: 4 shows the classification of public procuring entities.

Through internet search, the study identified 145 state entities in Nairobi out of 262 state corporations in Republic of Kenya as per the list of the presidential Taskforce on Parastatals Reforms (2013). A list of target population and sample population is included in appendix E. Through internet search to locate their head office and physically visiting the offices in Nairobi, the researcher identified 55 state entities with ongoing building projects with value ranging in cost Kshs 20million and above. According to PPDA 2005 Section 45(1), Procuring and Disposing Entities (PDEs) are supposed to keep their procuring and disposal records for up to six years. Data on project start dates, expected completion dates, projects estimates were extracted (see Appendix F). The period (2009 to 2014) chosen is convenient, considering that the legislative and regulatory framework (PPDAct 2005 and Regulations 2006) became operational in 1st January 2007 and therefore public building projects implemented within the period complied with the enacted law.

Table 3: 4: Current Classification of each of the Procuring Entities

Category A	Category B	Category C
Ministries	City councils of (Nairobi,	Other Local Authorities
State corporation	Mombasa, Kisumu)	Schools
	Co- operative Societies.	District, Sub district
	Universities and Colleges.	Hospitals, Health centers,
	Judiciary.	dispensaries ,CDFs
	Commissions	Voluntary
	Parliament.	organisation/institutions
	Provincial hospitals	
	Semi-Autonomous Agencies	

Sources: Compiled from PPOA Gazette notice No719 & Manual (2009)

3.5 Sample and Sampling Techniques.

The target population was 147 Public Entities in Nairobi, but not all had ongoing building projects. The researcher identified 55 public entities among 147 having building projects on implementation. The study then uses the formula for determining the sample size (Mugenda & Mugenda, 2003). This was accomplished by first serializing all the 55 procuring entities and then subjecting to Microsoft Excel Version 2010 random sampling formula to pick the 48 numbers representing the 55 no. procuring entities. The following formula was used to determine the sample size of study.

$$\mathbf{n}= \frac{z^2 p\, q}{d^2} \qquad \text{and } n_a = \frac{nN}{N+n}$$

Where,

n is desired sample size when target population is large, preferably greater than 10,000. (= 384)

N is the estimated population size. (=55 for this study)

Z is standard normal variate at the required confidence level (=1.96) for confidence level of 95%.

P is the proportion in the target population estimated to have the characteristics being measured. (=0.5)

q= 1-p (=0.5)

d is the level of statistical significance (=0.05)

Therefore,

$$n = \frac{(1.96)^2(0.50)(.50)}{(0.05)^2} = 384$$

This gives a sample of 384, which can be adjusted when population is less than 10,000 using the following relationship.

$$n_f = \frac{384}{(1+384)/55} = 48.1 \text{ (say 48)}$$

n_f Is the desired sample size (=48)

The sample size of study was 48 state entities in Nairobi that comprised of 48 procurement officers, 48 project supervisors, and 48 contractors. List of sample population is included in appendix E. However, studies on construction projects have worked with small sample size for various reasons. For example, Mbatha (1993), analysed building procurement systems features and conception of an appropriate project management system for Kenya based on (32) respondents spread in seven categories, ranging from (2) to maximum of (9), Talukhaba (1999), investigated causes of project delay in high-rise buildings based on (38) projects

3.6 Source of Data

Data was sourced from client state entities procurement officers, project supervisors'/consultants and contractors. Further data was sourced from internet, written theses, and journals.

3.6.1 Primary Data

The data for the study was obtained from both primary and secondary sources. According to (Leed & Ormrod, 2005) data is said to be primary if it is collected first-hand by inquirer for a determinable purpose. The primary data was obtained directly from respondents through administration of self-completion questionnaires and interviews. The primary data provided first hand information to this study about evaluation of public procurement system and its influence on contract performance during projects implementation and other issues necessary for this research.

3.6.2 Secondary Data

Secondary data was obtained from literature review obtained from written theses, journal papers, textbooks, newspapers, and literature on procurement of construction projects. The aim of the secondary source was to interpret, offer commentary, analysis and draw conclusions about events described in primary sources.

3.7 Variables

The variables to the study are public procurement principle factors (competition, transparency, cost effectiveness, equity, and fairness) and contract performance of building project in implementation. The dependent variable is contract performance success of building project during implementation with the other being independent variable. Table 3: 8 illustrates the variables.

Table 3: 5: Summary of study Variables

Type of variable	Variable Name(5No)	Indicators of Performance
Dependent Variable	Contract outcome during implementation.	Timeliness in completion, completion at projected Cost, and Quality of product
Independent Variables	Transparency	Integrity; Openness; Decisions properly documented; criteria for evaluating tenders; right to be present at the opening of tender; information on modifications or alterations to tenders
	Fairness and equity	Procedural fairness; Timely access to same information; Tender opportunities publically available; non discriminatory; ethics and professionalism
	Cost-effectiveness	Promptness; Flexibility; predictable cash flow; Methods standardised; Value for money; Strict time frame adhered to at tendering stage; effective contract evaluation, monitoring and audit at implementation stage
	Competition	Reduced corruption; Best value outcome; open tendering; realistic time frames; accessibility of relevant information; exclusion of tenders on the basis of fraud, corruption; how to deal with abnormally low tenders; alternative methods of procurement

3.8 Methods of Data Collection and instruments

Primary data were collected for the purpose of this study, from 12th May to 26th August 2014. This was after being issued with Research Clearance Permit by National

Commission for Science and Technology and an introductory letter from department of Construction Management in School of Architecture and Building Science. The introductory letter reassures respondents that all the information given will be treated with a lot of confidentiality and no information collected in this study will be used for any other purpose than stated above.

The method of data collection was determined by research design adopted; descriptive research using cross-sectional design. Descriptive research use questionnaires and interview as instruments to collect information and this is what study applied.

Given the nature and sensitivity of this research, the researcher had first to apply formally through the Chief Executive Officer(CEO) of the state entity in order to know whether they had ongoing building projects and then issued with an approval letter marked procurement the host department or section. Some requests were turned down though not many, despite having ongoing project(s) hence reducing the number of respondents for this study. The researcher treated them as not received questionnaires. The researcher used several procedures in data collections namely; (i) sending online/email questionnaire to respondents to respond to enquiry; (ii) physically visiting the work place with an approved letter and drop the questionnaires with the management in procurement department. Then advised on how to get the respondents (procurement officers, supervisors/consultants and contractor). The researcher could administer the questionnaire immediately after delivering and in other cases agree with the respondent on the date to pick the duly filled questionnaire. Date and time for the interview was agreed between the interviewer and interviewee.

3.8.1 Questionnaire

The questionnaire was developed whose purpose was to obtain data of primary nature. The questionnaire comprised of close-ended and a few open ended questions. The questionnaire had three parts; part A of the questionnaire contained general information (status of the respondent, experience and value of project) on respondents and the

details of the project under study, while part B contained public procurement factors influencing performance of building projects during implementation, extent to which they influenced public procurement part C contained other factors affecting performance of public building projects during implementation, finally part D contained building projects performance indicators and recommendation on how to improve PPS. The target respondents comprised of: 48 procurement officials, 48 projects supervisors and 48 Contractors. The research questionnaire to contractors was slightly different under public procurement system factors. Copies of questionnaire in three sets are included in appendix E.

3.8.2 Interview

The personal interviews were conducted using structured questionnaires as a guide to the researcher when asking questions. This method was effective and facilitated easy communication between the researcher and the interviewee. It also afforded an opportunity to ask probing questions as a follow-up to answer that the researcher would consider unsatisfactory or unconvincing. The interview provided the opportunity to solicit specific verbal responses in the form of questions. This created face-to-face relationship between the researcher and the interviewee allowing an interaction between the two parties to be more effective. Structured questionnaire were used in the interviewing, in which eleven (11) respondents participated who were selected through convenient sampling. A copy of interviewees who participated, respondent validation, and interview schedule are included in appendix A1, and A2 respectively.

3.8.3 Pilot Survey

The research instrument was pre-tested. The pilot survey formed the basis of modifying the instrument for subsequent full-scale survey. This was done by identifying misunderstanding, ambiguities and inadequate items in the instruments. The desirability of pilot survey is also to ensure that the research instruments as a whole function well (Bryman, 2004). It also provides the researcher with some experience of

using it and gives the researcher confidence in conducting actual research. Preliminary analysis using the pre-test data collected enabled the researcher to amend the questionnaire and it revealed that the questionnaire was too wordy and some variables were not important, requiring amendments. The pilot survey was administered to eleven (11) respondents, procurement officers, contractors, and projects supervisors who are involved in projects implementation from the target population. Figure 7 indicate the percentages and frequency of the respondents.

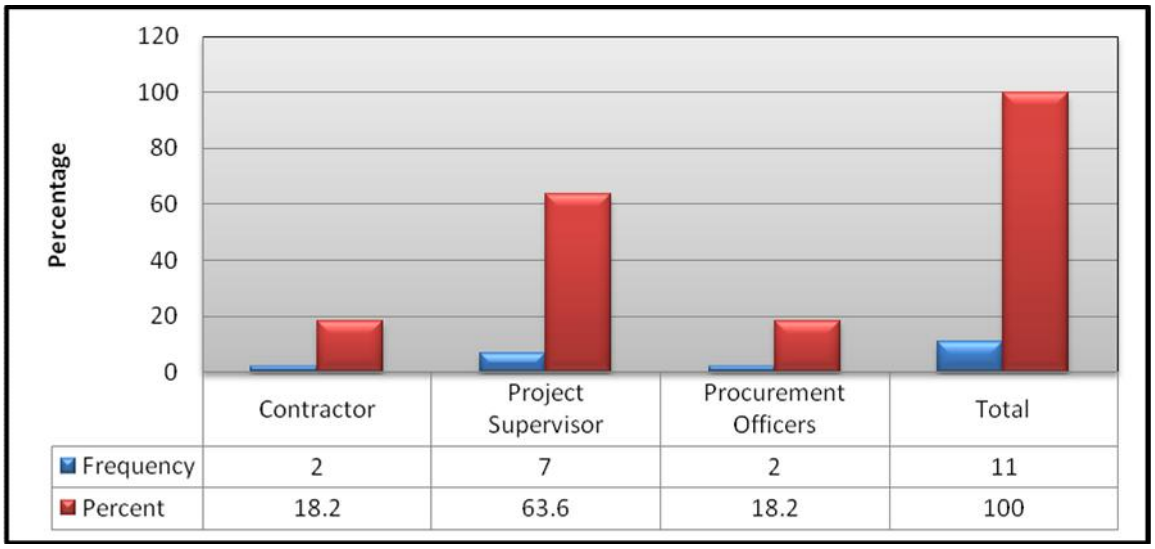


Table 3:5: Pilot Survey

Source: Research survey data, 2014

3.8.4 Data Validity

Validity has to do with how accurately the data obtained in the study presents the variables of the study (Mugenda and Mugenda, 2003). If such data is true reflection of the data variables, the inference based on such data will be accurate and meaningful. In this study, during the questionnaires construction, validity was ensured through:

i. Construct validity that was maintained through restricting the questions to conceptualization of the variables and ensuring that the indicators of a particular variable fall within the same construct.
ii. Face validity, where the instrument was subjected to the people with experience in the field (example, my supervisors) to check whether it measures what it was intended to measure or whether the measures is getting at the content. It was ensured that each question was appropriate for a particular variable construct.

Additionally validity of the data was enhanced by adopting a large sample population that is 68 % (filled and returned questionnaires) of the sample population is representative enough, meaning the results can be generalized. The use of respondent validation/member validation by providing the interviewee with an account of what he or she had said to the researcher in the interview.

3.8.5 Instrument Reliability

Reliability is the extent to which data collection technique yield consistent findings and those similar observations would be made or conclusions reached by the researcher (Lewis, Saunder, & Thornhill, 2007). According to Mugenda & Mugenda (2003), reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. The duo contends that as random errors increases, reliability decreases. The errors are due to factors that have not been addressed by researcher effectively mainly due to poor instruments design, interviewer bias and inaccurate coding entry. In a research study the reliability coefficient can be computed

to indicate how reliable data is. However, errors will always exist regardless of the procedures used in the study. The survey instrument was assessed by internal consistency technique, where the data was obtained from a single test administered by the researcher, to a sample subject. A coefficient of 0.80 or more implies that there is high degree of data reliability (Mugenda and Mugenda, 2003). Nunnaly (1978) as cited in Schumacher (2004) has asserted that a reliability coefficient of 0.70 or higher is considered acceptable in most social sciences research situation and less than 0.70 is generally seen as inadequate. Reliability was tested by use of Cronbach's coefficient Alpha in which twenty three (N23) and seven (N=7) variables from question four part B (independent variables) and question seven part D (dependent variables) from the questionnaire were used to determine the reliability of the instrument. From the examples, we can see Cronbach's alphas are 0.765 and 0.826, which indicates a high level of internal consistency. This was done by using SPSS computer programme to determine how items correlated among themselves, Table 3: 9 and 10 illustrate reliability test.

Table 3: 6: Reliability Statistics (Independent variables)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.765	0.816	23

Source: Research data, 2014

Table 3: 7: Reliability Test (Dependent Variables)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.832	7

Source: Research data, 2014

Other strategy used by the researcher to enhance reliability was through sample population which constituted experienced respondents with adequate experience to respond to enquiry (see Table 3: 11).

3.8.6 Replicability or Practicability

In this study, the instruments were designed in such a way that it was easy to administer in the shortest time possible considering the budget at hand. The questionnaire with clear detailed instructions (illustrated by examples), detailed instructions for administering, and scoring keys well bolded, to enhance interpretability and hence accuracy in data collection.

3.8.7 Data Analysis and Presentation

According to Kothari (2004), data analysis involves editing, coding, classification, and tabulation of collected data so that it can be analysed easily. There were two kinds of

field data, namely data obtained from questionnaire and interview schedule. The data were subjected to both qualitative and quantitative analysis techniques through use of Statistical Package for Social Science (SPSS) Version 16. The raw data was edited, and then entered in the SPSS computer programme by assigning symbols in a process referred to as coding. Thereafter, generate relevant frequencies, descriptive, charts and graphs. The responses from closed-ended questions were categorized as numerical data and open-ended questions categorized as string (text) data.

3.8.7.1 Descriptive Analysis

This study adopted descriptive analysis after reliability test. The descriptive analysis is statistical procedure that is used to describe the population one is studying. The descriptive statistics use graphical and numerical summaries to depict a data set. The importance of descriptive statistics, rest in the utility as tools for interpreting and analyzing the data. Data is presented in form of graphs, tables, and percentages depicting standard deviation, percentages, and frequency count to profile sample characteristics and major patterns emerging from data. This study used descriptive statistics to analyse the closed-ended questionnaires. In this case, the collection and analysis of the data proceeded in tandem, repeatedly referring and constantly comparing the data to see which concepts they best fit with (grounded theory) (Bryman, 2004).

3.8.7.2 Pearson's Correlation

Correlation is the technique used to analyze the degree of relationship between two variables. It helps in determining the strength and direction of the association between two variables, thus forming the basis for selecting variables for further statistical analysis such as regression analysis. Mugenda and Mugenda (2003) have emphasized that, the computation of a correlation coefficient yield a statistic that ranges from -1 or 1 the statistics is called a correlation co-efficient.

The study used Pearson's correlation coefficient (r) technique to analyse the degree of relation between independent (competition, cost effectiveness, transparency, equity and fairness) and dependent (contract performance) variables. From Table 3: 20 shows the Pearson's correlations coefficient between transparency/competition, transparency/cost effectiveness, transparency/fairness, competition/cost effectiveness, competition and fairness, transparency/ performance and cost effectiveness /performance are 0.429, 0.687, 0.173, 0.376, 0.373, 0.442, and 0.480 respectively. The correlation coefficient tells the researcher the magnitude and direction of the relationship between two variables and the bigger the co-efficient, the stronger the association between the two variables. The correlation analysis was done by use of SPSS computer programme.

3.8.7.3 Multiple Linear Regression Model

The study adopted multiple linear regressions to formulate a suitable model to evaluate the relationship between the public procurement predictors of success factor and contract performance in public building project. The model indicates the most significant predictor (independent variables). The model was adopted since the study had more than one variable. Mugenda and Mugenda,(2003) assert that, multiple linear regression analysis attempts to determine whether a group of variable together predicts a given dependent variable. Multiple linear regression model separates each individual variable from the rest allowing each to have its own coefficient describing its relationship to the dependent variable. Previous studies done based on performance of building projects, advocating for multiple linear regression models include; William, (2009, pp.110-113), Long Le-Hoi *et al.,* (2013,pp.2-5), Mbiti, (2008), Moore, (1998), Walker,(1994, pp.27-35). The general multiple linear regression models for this study:

$$Y=\beta_0+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\beta_4 X_4+\varepsilon \qquad \textit{Equation. 1}$$

Where;

Y= Dependent Variable, (contract performance of public building project during implementation)

β_0= Is a constant, which is value of dependent variable when all the independent variables are zero

β_i Is the coefficient for X_i (1, 2, 3, and 4)

Independent variable (Core Principles of public procurement system)

X_1 = Transparency Index

X_2= Competition Index

X_3= Fairness and Equity index

X_4= Cost-Effective Index

ε= is the error

3.8.7.4 ANOVA

In this study ANOVA test was used to determine the impact of the independent variables on the dependent variables in the model. The SPSS computer programme was used in this study, to analyse the variance and establish whether the whole model was a significant fit of the data.

ANOVA is a data analysis procedure that is used to determine whether there are significant differences between two or more groups or samples at a selected probability level (Mugenda & Mugenda, 2003).

3.9 Data Analysis Tools per Objective

Table 3: 11 below indicates the research objectives, type of variable, the type of data, and source of data statistical technique of analyzing the data.

Table 3: 8: Data analysis tools per objective

Research Objective	Independent variable	Type of Data	Source of Data	Dependent variable	Statistical Test/Analysis
1.Determine the public procurement factors that have significant influence on contract performance in public building project during implementation	Transparency; Competition; Fairness & Equity; Cost-effectiveness	Interval(continuous); ordinal (Likert scale1-5)	Procurement officials, projects supervisor's, and contractors	Contract performance	Descriptive statistics(Descriptive &Frequencies) Mean, standard deviation; frequency count, percentages,
2. Assess the extent to which the public procurement indicators of project success influence the contract performance.	Transparency; Competition; Fairness & Equity; Cost-effectiveness	Interval(continuous) (Likert scale1-5)	Public entities procurement officials, projects supervisor's and contractors	Contract Performance	Descriptive statistics(Descriptive &Frequencies) Mean, standard deviation; frequency count, percentages,
3. Evaluate the relationship between the public procurement predictors of success factors and contract performance in building project	Transparency; Competition; Fairness & Equity; Cost-effectiveness	Interval(continuous)	Public entities procurement officials, projects supervisor's and contractors	Contract Performance	Multiple Linear Regression ANOVAs, Pear man's correlation coefficient

Source: Research data, 2014

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

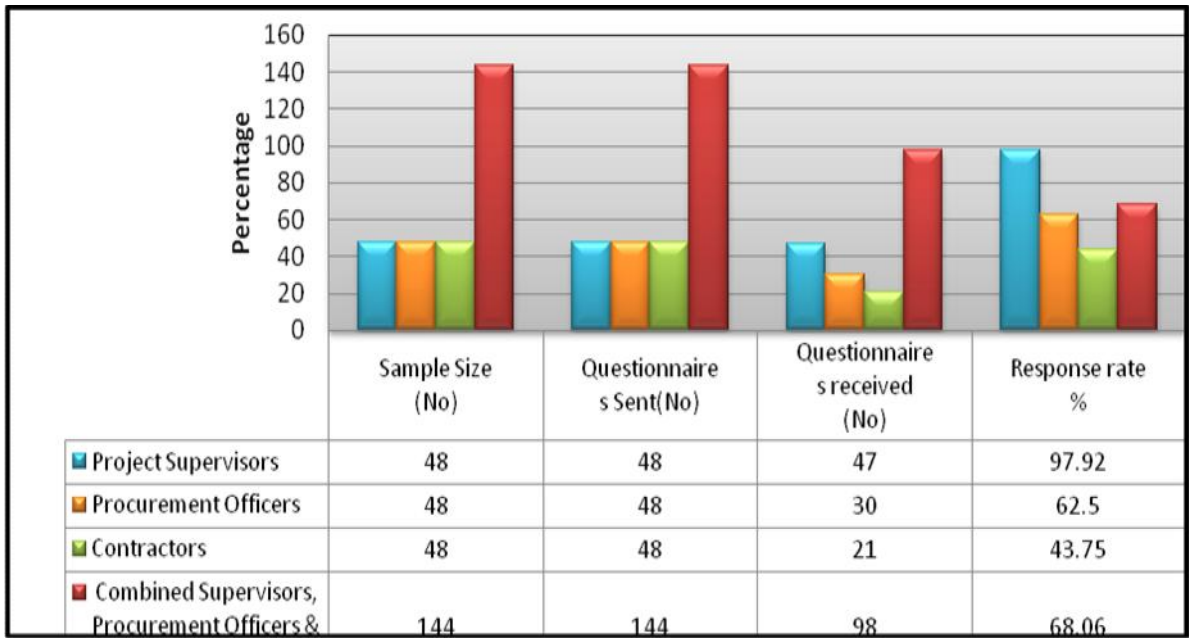
The main objective of this study was to evaluate the public procurement system and its influence on contract performance of public building projects during implementation in Nairobi County. Therefore, this chapter focuses on presenting the field results of the study. First, it presents the descriptive statistics of the sample. The descriptive analyses focus on: the data collected on public procurement factors influencing building projects (independent variables) are presented as: descriptive statistics, statistical distribution, and the discussion. Secondly, the data collected regarding public procurement factors, other factors affecting the public building projects, and building projects key performance indicators such as; construction time, client satisfaction, construction cost, and predictability (cost and time) are presented. Thirdly, the data of study's independent variables namely; transparency, competition, cost-effectiveness, fairness, equity, and relationship between contract performances of public building project are presented. The factor analysis used include; descriptive statistics, correlation and regression.

4.2 Respondents Data and Type

4.2.1 Response Rate

The study distributed three sets of questionnaires to each of the 48 No. sampled procuring entities. The respondents were namely: procurement officer, project supervisor and contractor. Out of total 144 questionnaires sent out, 98 were duly filled and returned while 46 did not return the questionnaires. This represents 68% of the sample population. In terms of the response rate from the different respondents in the entities, twenty one point four percent (21.4%) of the questionnaires were completed by

the contractors, forty eight percent (48%) by the project supervisors and thirty point six percent (30.6%) by the procurement officers. The analysis is shown in Table 3:7.



	Sample Size (No)	Questionnaires Sent(No)	Questionnaires received (No)	Response rate %
Project Supervisors	48	48	47	97.92
Procurement Officers	48	48	30	62.5
Contractors	48	48	21	43.75
Combined Supervisors, Procurement Officers &	144	144	98	68.06

Table 4.1: Response Rate

Source: Research survey data, 2014

This was commendable response which was due to consistent data collection, where the researcher personally administered questionnaires by delivering to the respondents physically, and waited for respondents to fill, and in most of the cases, the researcher would make calls, send messages and emails to confirm when to pick the questionnaire once duly filled and this took a period of four months (May-August). The response rate demonstrates a willingness by respondents to participate in the study.

4.2.2 Current Position

Table 4: 9 Statistics of Current positions of the respondents

	Category		Frequency	Percent
1	**Project Supervisors**	Project Manager	9	19.1
		Project Architect	11	23.4
		Project Engineer	12	25.5
		Project Quantity Surveyor	12	25.5
		Facility Manager	2	4.2
	Total		**47**	**100**
2	**Contractor**			
		Director	4	19.1
		Contract Manager	7	38.2
		Architect	1	4.8
		Engineer	1	4.8
		Quantity Surveyor	1	4.8
		Estimator/Purchaser	2	9.6
		Site Agent	3	14.3
	Missing system		1	4.8
	Total		**21**	**100**
3	**Procurement Personnel**	Director	2	6.7
		Manager	16	53.3
		Senior Supplies officer	12	40
	Total		**30**	**100**
Combined Total			**98**	**100**

Source: Research survey data, 2014

Table 4: 5, illustrates current positions of the respondents in three categories namely: project supervisors, contractors and procurement officers. The conclusion drawn from the table is that the procurement officers were ranging from director procurement, procurement managers, senior chain supplies officers. The project supervisors all ranged from project managers, project architects, quantity surveyors, and project Engineers, all are able seniors who gave reliable information. Finally, in the category of contractors the position ranged from Directors of the company, contract managers,

engineer, architect, quantity surveyor, estimators and site agents all in senior positions able to respond to enquiry. However, the study found that, project supervisors determine the contract performance success as can be seen in Table 4: 10.

Table 4: 10: ANOVA

Category	Model		Sum of Squares	df	Mean Square	F	Sig.
Contractor	1	Regression	2.815	4	.704	2.084	.134[a]
		Residual	5.067	15	.338		
		Total	7.883	19			
Project Supervisor	1	Regression	6.331	4	1.583	4.388	.005[a]
		Residual	14.788	41	.361		
		Total	21.119	45			
Procurement Officer	1	Regression	.502	4	.125	1.067	.394[a]
		Residual	2.941	25	.118		
		Total	3.443	29			

a. Predictors: (Constant), Fairness and Equity, Cost effectiveness, Competition, Transparency

b. Dependent Variable: Y

Source: Research data,2014

The F critical at 5% level of significance was 2.60. Since F calculated is greater than the F critical (Value=4.388), this shows that the overall model was significant. From Table 4: 10, the significance value is less than 0.05 thus the model is statically significance in predicting how supervisor determine contract performance of project.

4.3.3 Respondents Years of Experience

Table 4: 11 illustrates the respondents' years of experience in the construction industry and revealed that the mean year to be 10.8 years; this indicates that the respondents have adequate experience to respond to enquiry.

Table 4: 11: Combined Respondents' Years of Experience

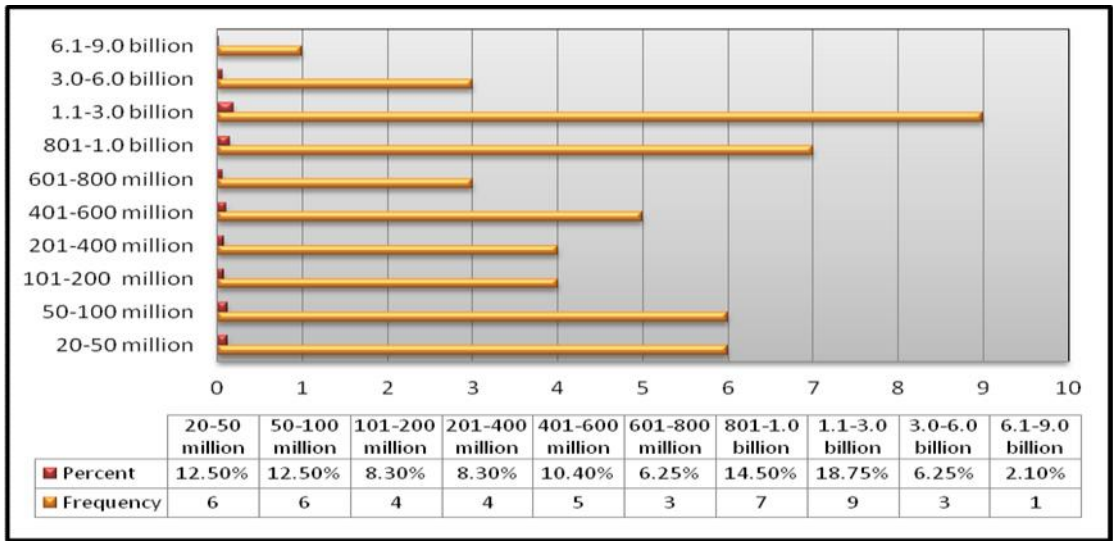
Years	Mid Value (X)	Frequency	F(X)
Less than 5	2.5	24	60
6-10	7.5	30	225
11-15	12.5	18	225
16-20	17.5	10	175
21-25	22.5	5	112.5
Above 25	25	10	250
Total		**97**	**1047.5**

Mean Year of experience $\frac{\sum F(X)}{\sum (F)} = \mathbf{10.8}$

Source: Research data, 2014

4.3. 4 Project size

Table 3:6; indicate the statistics of approximate value of projects at the time of study. Most of the project value ranged between Kenya shilling 1.1-3.0million 18.75%, 801-1.0 billion 14.5%, 50-100 million 12.5%, 20-50million 12.50%, 401-600million 10.40% 201-400 million 8.3%, 101-200million 8.3%, 601-800million 6.25%, 3.0-6.0billion 6.25% and 6.1-9.0billion 2.1%. Table below illustrate the approximate value of projects.



	20-50 million	50-100 million	101-200 million	201-400 million	401-600 million	601-800 million	801-1.0 billion	1.1-3.0 billion	3.0-6.0 billion	6.1-9.0 billion
Percent	12.50%	12.50%	8.30%	8.30%	10.40%	6.25%	14.50%	18.75%	6.25%	2.10%
Frequency	6	6	4	4	5	3	7	9	3	1

Figure 4.2: Statistics of Approximate value of the ongoing construction projects (2009-2014).

Source: Research data, 2014

From the statistics data, most of the 48 projects studied had a value of Kshs 50million and above. This is an indication that, the projects were large and complex to warrant special attention in terms of the human resources such experienced procurement personnel to oversee procurement, experienced project supervisors and reputable contractors for project implementation.

4.3 Public procurement factors

Figure 4.3, .. and 4.4 shows descriptive statistics for the first three most significant indicators of project success. Specifically, the tables show responses from the three categories of respondents namely: contractor, supervisor, and procurement officer.

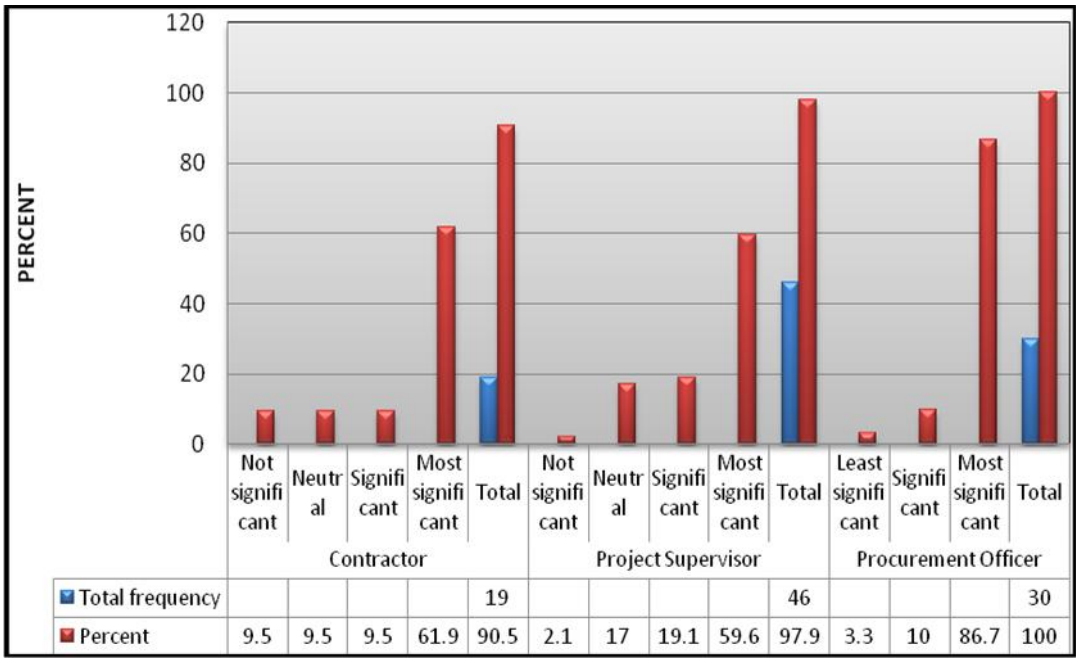


Figure 4.3: Advertisement of the tender for works (Transparency)

Source: Research data, 2014

Figure 4.3 shows that 69.4% on average indicated that advertising the tenders in the local daily press, internet, and web based systems is the most significant indicators of project success contract. The figure demonstrates that, 86.7% of procurement officers claim the indicator is most significant, 61.9% of the contractors believe the indicator is most significance while 59.6% of the supervisors claim it is most significant. The procurement officers are more concerned with publicity of the tender and belief it has influence on performance of the project during implementation and this is strongly supported by the data. The contractor supports this because they can only know about tenders through advertisement.

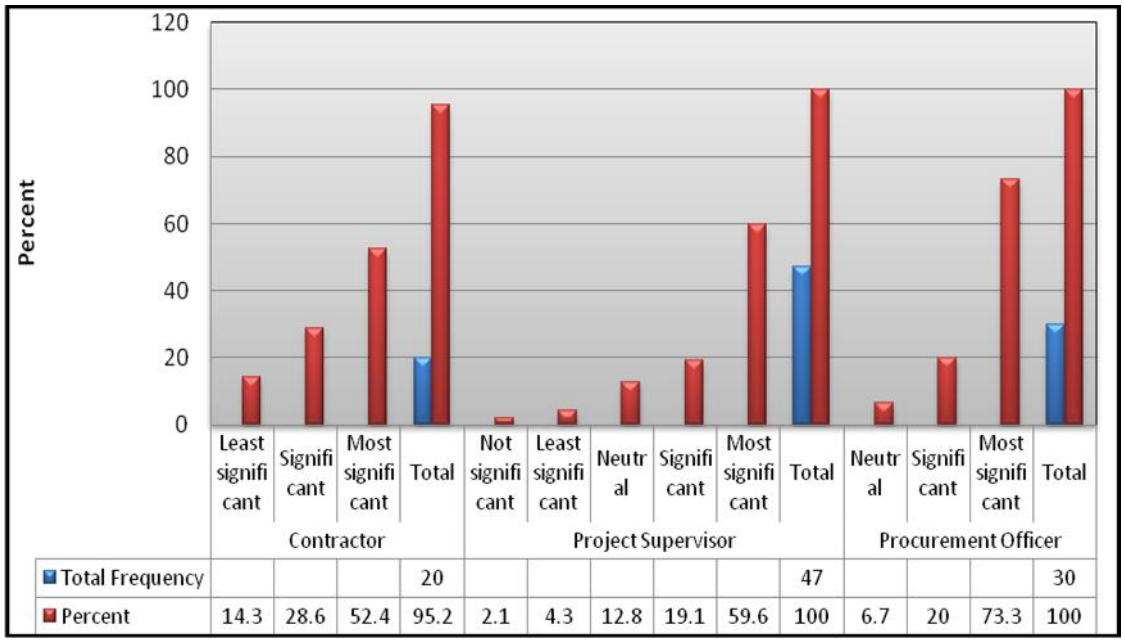


Figure 4. 4: Value for money (cost effectiveness)

Source: Research data, 2014

Figure 4. 4 above shows that, 61.8% on average indicated that the value for money for the project was considered in terms of whole life cost, time and client satisfaction factors had the most significant influence on the project. This result demonstrates "value for money" as indicator of project success that has significant influence on building project implementation. From Figure 4. 4, 73.3 %, value for money for the project had the most significant influence as claimed by the procurement officer; the procurement officers are more concerned with value for money. While the supervisors slightly indicate a 59.6% of its respondents indicating most significant and finally the contractors shows pantry 52.4% most significance. The contractors do not seem to support cost effectiveness seriously compared to the other respondents. This may be supported by the fact that, the contractors mindset is in profit margin to gain from the project, as opposed to cost effectiveness though no empirical data to support this. Award of building contracts should use other criteria not just the lowest price, emphasis should be put on other soft parameters (Choi and Fong, 2000), and indeed cost-effectiveness can be achieved as far as building projects implementation is concerned.

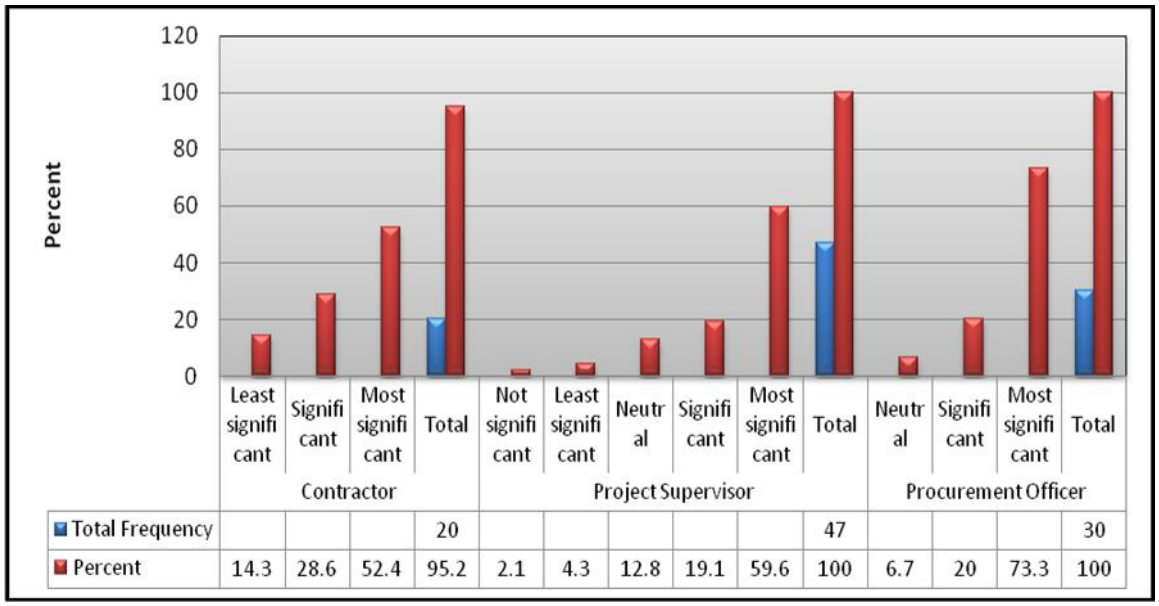


Figure 4. 5: Notification of the tenderers (Transparency).

Source: Research survey 2014

Figure 4. 5 reveals that, notification of the award of successful contractor and informing unsuccessful participants as a indicator of project success that has significant influence contract performance during the public building project implementation. From the Figure 4. 4, the procurement officer indicated 73.3% most significant, supervisors 59.6%, while contractors 52.4% significant. On average 61.8% of the respondents agreed the factor is significant. Notification to award the winner of the contract and too all participants is a significant for it gives a window of opportunity to seek review in case of aggrieved and therefore had an influence on performance of the project.

4.3.1 Combined respondents assessment of public procurement-related factors

Table 4: 6 shows descriptive statistical analysis of the combined weighted means of the procurement officers, supervisors, and contractors. The respondents were asked to identify and score all the public procurement factors in order of their level of influence on a measure of five point Likert scale ranging from one (1) to five (5).

Table 4: 12: Combined respondents assessment of public procurement factors (indicators of contract performance success)

	N	Min.	Max.	Mean	Std. Dev.	Rank
Procuring entity publicly advertised the tender in the local daily press or in the internet or web based system	95	1.000	5.000	4.4842	.95498	1
The value for money for the project was considered in terms of whole life cost, time and satisfaction of the client	96	1.000	5.000	4.4167	.92528	2
Successful contractor was notified and participating tenderers were notified as well	95	1.000	5.000	4.3474	1.04950	3
The criteria for evaluating tenders were specified	95	1.000	5.000	4.3368	1.01699	4
Procuring entity officials are accountable for their decisions and accept responsibility for their actions	95	2.000	5.000	4.3263	.89255	5
All contractors were able to access relevant information	94	1.000	5.000	4.2766	1.06159	6
The procurement due process as outlined in the public procurement regulations were adhered to	96	1.000	5.000	4.2604	1.02849	7
Measures are put in place to ensure effective contract administration/evaluation, monitoring and audit	95	1.000	5.000	4.2421	.97540	8
All contractors were able to access information at the same time during tendering process	96	1.000	5.000	4.2396	1.03359	9

Any clarification of tenders by procuring entity on request was done without discrimination	96	2.000	5.000	4.2292	1.07095	10
Open tendering method was used as far as is practical	96	1.000	5.000	4.2292	1.07095	11
Time frame at tendering stage was realistic	96	1.000	5.000	4.0625	1.02405	12
Unpredictable cash flow of the client affect project delivery	95	1.000	5.000	3.9474	1.24941	13
Strict realistic time frame was adhered to at tendering stage	95	1.000	5.000	3.8737	1.24834	14
In public interest, procuring entity did award tender with lowest sum	93	1.000	5.000	3.4301	1.50649	15
All contractors were present at the opening of tenders	94	1.000	5.000	3.2872	1.36486	16
All contractors signed a code of conduct enforcing ethical standards	92	1.000	5.000	3.1739	1.49438	17
In public interest, procuring entity disqualified tender(s) with abnormally low tender sum	92	1.000	5.000	3.0435	1.54716	18
Minutes/records of proceedings for the project are accessible to public	94	1.000	5.000	3.0319	1.54817	19
Information on modifications or alterations to tenders	93	1.000	5.000	2.6774	1.63628	20
The client failed to put in place provisions on how to deal with abnormally low tenders	93	1.000	5.000	2.6237	1.51021	21
Discriminatory and non quantifiable criterion was used for evaluating tenders for the project	91	1.000	5.000	2.5934	1.66652	22
There was exclusion of tender(s) on the basis of corruption, collusion and false declarations	91	1.000	5.000	2.5385	1.60767	23

Source: Research data, 2014

Therefore, from the Table 4:12, the combined weighted means of the three groups, level of significance of public procurement factors that influence contract performance on projects during implementation ranges between 4.48 and 4.23. This shows all identified factors are significant to the contract performance.

Procuring entity publicly advertising for tender was the most significant with mean of 4.48, indicating a high degree of agreement between the respondents in their views and with low standard deviation of 0.95 indicating high degree of consistencies in respondents' opinions. This factor is a sub-factor of core principle transparency. Kenya public procurement system provides that, if the procuring entity does not have a website, they may publish on the PPOA website or mandatory publication in at least one national newspaper of wide coverage.

Value for the money for the project was considered in terms of whole life cost and time while client satisfaction was ranked second overall with mean score of 4.42 indicating participants in agreement on the issue spread between least significant (1) to most significant (5) Likert scale, with SD of 0.925 the views were very closely spread.

The table shows that, there were 95 respondents who responded to the factor; the successful contractor was notified and participating contractors were debriefed as well with a mean of 4.35, SD of 0.925 this was rated third overall. Fourth factor, 95 responded on criteria for evaluating tenders with a mean of 4.34, SD 1.02.

The question on whether all contractors were able to access relevant information from procuring entity on request by contractor as a PPS factor has significant influence on contract performance of building project had 94 who responded and had mean score of 4.28 spread between two (2) to most significant (5) Likert scale, with SD of 1.06 indicating their views were slightly widely spread. The factor is sub-factor of fairness and equity a principle of public procurement system.

In conclusion, the top five most significant as indicated on Table 4: 12 are: Procuring entity publicly advertised for tender was the most significant influential factor with the highest mean score of 4.48; Value for the money for the project was considered in terms of whole life cost, time and client satisfaction (4.42); successful contractor informed and participating contractors notified as well , with a mean of 4.34; contractors were informed the criteria for evaluating tenders had a mean of 4.33; and contractor were able to access relevant information from procuring entity on request by contractor (4.27). The result shows low values for the standard deviations in the first two positions, which indicate high degree of consistencies in the respondents' opinions, while the third and forth high degree of inconsistence in respondent opinion. In conclusion, the ranked first and second factors which are transparency (4.4842) and cost effectiveness (4.4167) public procurement core factors. The results show low values of standard deviations, which indicate high degree of consistencies in respondents' opinions.

4.4 Other factors of contract performance success

Table 4: 13 below shows descriptive statistical analysis for respondent's views on other factors that have an effect on contract performance of building project under implementation. The respondents were asked to agree or disagree with the statement in a Likert scale ranging from 1(agree) to 5(strongly agree).

Table 4: 13: Other factors that affect contract performance

Other Factors	N	Min.	Max.	Mean	Std. Dev.	Rank
Delay of dispute resolutions has very high impact on project timely delivery	98	2.00	5.00	4.5816	.64093	1
Delay in honoring payment certificates highly affects time performance	98	2.00	5.00	4.5612	.62699	2
Technical and managerial expertise has an impact on performance	97	2.00	5.00	4.5464	.64583	3
Defective design influence time performance	96	1.00	5.00	4.4896	.87051	4
Variation between estimated and actual completion time impact on time performance	96	3.00	5.00	4.4062	.62539	5
Frequency of variations greatly influence cost performance	96	2.00	5.00	4.3958	.76060	6
Actual times for completion of planned tasks against schedule influence time performance	96	2.00	5.00	4.3750	.68441	7
Bureaucracies greatly influence time performance	96	1.00	5.00	4.3021	.83502	8
Communications with parties greatly influence time performance	97	2.00	5.00	4.2577	.69639	9
Frequencies of rework greatly affect time performance	96	2.00	5.00	4.2500	.76777	10
Regularity of site meetings greatly influences time performance	96	1.00	5.00	4.2292	.76060	11
Uniqueness of the project affects cost performance	93	2.00	5.00	4.0215	.92052	12
Lengthy post-award negotiations influence time performance negatively	96	1.00	5.00	3.8854	1.04499	13
Source of funding affects time performance	96	1.00	5.00	3.8750	1.09784	14
Actual commencement time influence time performance	97	1.00	5.00	3.7526	1.10897	15
Traditional procurement method greatly influences time performance	97	1.00	5.00	3.6598	1.19797	16
Selection of domestic sub-contractors has least impact on quality performance	96	1.00	5.00	2.6979	1.14358	17
Fluctuation costs have least implication on project cost	96	1.00	5.00	2.6042	1.37251	18

Health and safety measures have least impact on cost performance	97	1.00	5.00	2.4742	1.18227	19
Risk management has least effect on cost performance	95	1.00	5.00	2.4000	1.01478	20

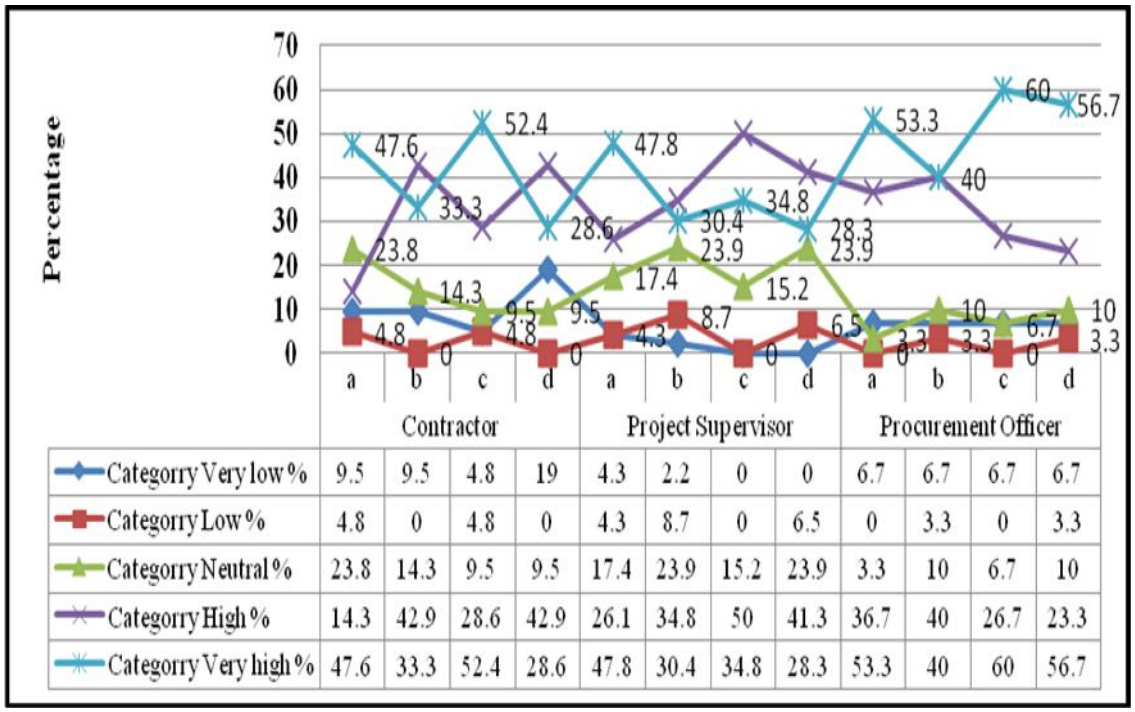
Source: Research data, 2014

The table reveals descriptive statistical analysis for respondent's views on other factors that have an effect on contract performance of building project under implementation.. From Table 4: 13, there were a maximum of 98 to a minimum 93 respondents who responded to the question. The first top 10 factors that have an effect are:- delay in dispute resolutions had very high impact on project timely delivery, a mean of 4.5816, SD of 0.64093; delay in honouring payment certificates highly affects time performance 4.5612, SD 0.62699; technical and managerial expertise has an impact on performance mean 4.5464, SD 0.64583; defective design influence time performance mean4.4896, SD 0.87051; Variation between estimated and actual completion time impact on time performance mean 4.4062, SD 0.62539; frequency of variations greatly influence cost performance mean 4.3958, SD 0.76060; Actual times for completion of planned tasks against schedule influence time performance mean 4.3750, SD 0.68441; bureaucracies greatly influence time performance mean 4.3021, SD 0.83502. From the findings, delay in dispute resolutions has very high impact on performance of the project, followed by delay in honoring payment certificates also highly affects time performance. Although there are mechanisms for dispute resolution as outlined in PPOA standard tender document the mechanism need to be improved so as to resolve disputes as quickly as possible to reduce effect it has on contract performance.

The top three most significant as depicted on the table are namely: Delay in dispute resolutions has very high impact on project timely delivery (4.58); delay in honouring payment certificates highly affects time performance (4.56); and Technical and managerial expertise has an impact on performance mean (4.54). The result shows low values for the standard deviations, which indicates high degree of consistencies in the respondents' opinion.

4.5 Influence to contract performance during implementation

The respondents were to rank the factors based on arithmetic mean value scores in a Likert scale ranging from 1 to 5. From the scale, the mean scale of 1 indicates "very low ", 2 "low ", 3 "neutral", 4 "high", 5 "very highly".



	Contractor				Project Supervisor				Procurement Officer			
Categorry Very low %	9.5	9.5	4.8	19	4.3	2.2	0	0	6.7	6.7	6.7	6.7
Categorry Low %	4.8	0	4.8	0	4.3	8.7	0	6.5	0	3.3	0	3.3
Categorry Neutral %	23.8	14.3	9.5	9.5	17.4	23.9	15.2	23.9	3.3	10	6.7	10
Categorry High %	14.3	42.9	28.6	42.9	26.1	34.8	50	41.3	36.7	40	26.7	23.3
Categorry Very high %	47.6	33.3	52.4	28.6	47.8	30.4	34.8	28.3	53.3	40	60	56.7

Key: a=Transparency, b=Cost-effectiveness, c=Competition, d= Fairness and equity

Figure 4. 5: Influence to contract performance during implementation

Source: Research data, 2014

a. Transparency: The contractors were requested to indicate the extent of influence on public procurement system core principles (transparency, competition cost-effectiveness, fairness, and equity) on project they were involved in. Among the contractors, 47.6% transparency very high influence, 14.3% high influence, 23.8% neutral and 14.3% on average low influence. The project supervisors asserted as follows; 47.8% very high influence, 26.1% high influence, 17.4% neutral and 8.6% low

influence. Majority of procurement officers indicated, 53.3% very high influence, 36.7% high influence, 3.3% neutral and 6.7% very low influence. This implies that transparency in procurement procedures had high influence on performance of building project. Figure 4. 5 summaries the findings.

b. Cost effectiveness: Figure 4.5 illustrates the contractors, project supervisors, and procurement officer responses on the extent of public procurement system factors influence on the project they were involved in. 33% of contractors indicated very high influence high, 42.9% high influence, 14.3% neutral, 9.5% low influence. From the study finding, project supervisors indicated 30.4% very high influence 50% high influence, 15.2% neutral, and zero low influence. While procurement officers indicated, 60% very high influence, 26.7% high influence 6.7% neutral and 6.7% low influence. The respondent gave varied opinion as indicated on figure above. Procurement officers supported cost effectiveness as major factor that influenced performance of the project on implementation, followed by project supervisors.

c. Competition: The participating respondents, the contractors, project supervisors and procurement officers were requested to indicate the extent of influence on the competition on performance of building project on a Likert scale ranging one (very low influence) and five (very high influence).The finding in Figure 4.5 revealed that, majority of contractor 52.4% indicated competition had very high influence, 28.6% high influence, 9.5% neutral, and 19% low influence. From the frequency analysis the 34.5% of project supervisors asserted that, competition had very high influence, 50% high influence, 15.2% neutral and zero low influence. Finally procurement officers asserted, 60% very high influence, 26.7% high influence, 6.7% neutral and 6.7% low influence. Based on frequency analysis, competition in procurement of project had a high influence on performance of project.

d. Fairness and equity: The researcher sought to find out the extent of influence on fairness and equity to the performance of project the respondents were involved in. The participants gave varied opinion; first the 28.7% of the contractors indicated that fairness and equity had very high influence, 42.9% high influence, 9.5% were neutral,

and 19% low influence. Second the project supervisors indicated, 28.3% very high influence, 41.3% high influence, 23.9% neutral and 6.5% low influence. Third procurement officers led the category with 56.7% indicated very high influence, 23.3% high influence, 10% neutral and 10% low influence. The extent of influence on fairness and equity compared to the other three factors did not record very high influence though the majority of procurement officers asserted that it had very high influence rated at 56.7%. The data is illustrated in Figure 4.5.

4.5.1 A summary of combined respondents' assessment of extent of influence of public procurement factors on contract performance (predictors of contract performance success)

Table 4: 14 shows results of descriptive statistics analysis on the extent of influence on public procurement factors on the contract performance of project. The participants were requested to provide answers on each factor that was measured by a five point Likert scale ranging from one(1) (very low influence) to five(5) (very high influence). The mean and standard deviation was used to test the respondent's views.

Table 4.14: Extent of Influence of public procurement factors to the contract performance

Public Procurement Factors		Min	Max	Mean	Std.Dev	Rank
Extent of Competition influence on the project	97	1.00	5.00	4.2371	0.92165	1
Extent of Transparency influence on the project	97	1.00	5.00	4.1031	1.15004	2
Extent of Fairness and Equity influence on the project	97	1.00	5.00	3.9381	1.1256	3
Extent of Cost-effectiveness influence on the project	97	1.00	5.00	3.9072	1.09051	4
Valid N (list wise)	**97**					

Source: Research data, 2014

Therefore, from the question, the extent of influence on public procurement system factors on performance of building project, from the 97 respondents indicated that, competition had a mean of 4.2371, with SD 0.92165 and transparency followed with a mean of 4.1031, SD 1.15004.

Cost-effectiveness, fairness, and equity had a mean of 3.0972 and 3.9381 respectively. Competition with mean score of 4.23; transparency mean score (4.10), indicated high degree of agreement in the respondents views. Competition had low standard deviation (SD) of 0.92165 indicating high degree of consistencies in respondents' opinions. It seems majority of the respondents agree that competition as a procurement factor has a high influence on performance of public buildings. This can be concluded that competition was highly maintained through open tendering method. Other factors had a high standard deviation indicating high degree of inconsistencies by the respondents' views.

4.6 Construction Project Performance Indicators

4.6.1 Contractor views on construction project performance indicators.

The contractors were asked to score the contract performance indicators post result in Likert scale ranging one (not important) to five (most important). Table 4: 15 reveals that, 95.3% of the contractors indicated on average construction cost was important, 85.7% construction time important, and 94.2% client satisfaction important, 80% quality, 75% safety, 50% on average indicated defect important while 55.6% predictability.

Table 4: 15: Contractor

	Not important indicator %	Least important indicator %	Neutral %	Important indicator %	Most important indicator %
Construction cost			4.8	28.6	66.7
Construction time			14.3	33.3	52.4
Client Satisfaction			4.8	33.3	61.9

Quality			20.0	5.0	75.0
Safety	5.0	5.0	15.0	30.0	45.0
Defects	5.6		44.4	16.7	33.3
Predictability (time and cost)		5.6	38.9	27.8	27.8

Source: Research data, 2014

4.6.2 Supervisor views on construction project performance indicators

A Likert scale ranging one (not important) to five (most important) was used to measure the views of projects supervisors (Project Managers, Architects, Engineers and Quantity Surveyors) on the question which they were asked to score the public procurement performance indicators of success of the building project they were supervising. The question asked was meant to get supervisors views as the experts mandated to ensure success performance of projects and therefore the question was mainly to find key performance indicators they used as a measure of success.

Table 4: 16: Supervisor

	Not important indicator	**Least important indicator**	**Neutral**	**Important indicator**	**Most important indicator**
	%	**%**	**%**	**%**	**%**
Construction cost	2.1		6.4	19.1	72.3
Construction time	2.1		12.8	36.2	48.9
Client Satisfaction	2.1		14.9	34.0	48.9
Quality		2.1	8.5	25.5	63.8
Safety		14.9	12.8	38.3	34.0
Defects	6.4	6.4	17.0	38.3	31.9
Predictability (time and cost)	2.2	13.3	22.2	42.2	20.0

Source: Research data, 2014

Table 4: 16 shows the findings as follows, 91.4% on average indicated construction cost as important indicator, and 85.1% construction time as important,82.9% client satisfaction as important,89.3% quality as important, 72.3% safety as important,62.3% defects as important, while 62% predictability(cost and time) as important. A total of 47-project supervisors responded to the question. From the descriptive frequency analysis, it can be concluded that, the supervisors as the experts in construction project indicated that, construction cost, and client satisfaction were mainly the measures of performance of public sector building project among others.

4.6.3 Procurement Officers views on construction project performance indicators

Table 4: 17 is a presentation on the finding on public procurement success performance indicators of the public building project. The response by 30 procurement officers from procuring entities, as the officers charged with the responsibility of implementing the public procurement system framework for successful project implementation. The respondents were asked to score the performance indicators of success by indicating the level of importance during project implementation on Likert scale ranging from one (not important) to five(most important).

Table 4: 17: Procurement Officers

Procurement Officers	Not important indicator %	Least important indicator %	Neutral %	Important indicator %	Most important indicator %
Construction cost			3.3	30.0	66.7
Construction time				40.0	60.0
Client Satisfaction			6.7	16.7	76.7
Quality				13.3	86.7
Safety			10.0	26.7	63.3
Defects	6.7		6.7	33.3	53.3
Predictability (time and cost)			10.0	50.0	40.0

Source: Research data, 2014

Among the respondents, 96.7% indicated construction cost as important, 100% construction time, 93.4% client satisfaction, 100% quality, 89.6% safety,86.6% defects, while 90% predictability (cost and time) as important. It is noted that, procurement officers indicated that timely delivery and client satisfaction performance are important measures of the performance of public sector building project compared to the others.

4.6.4 A Summary of combined respondents' assessment of construction project performance Indicators (post results)

Table 4: 18 shows descriptive statistics of respondent's views on the public procurement system performance indicators for the building project.

Table 4: 18: Construction project performance Indicators level of importance

Indicators	N	Min.	Max.	Mean	Std. Dev.
Quality	97	2.00	5.00	4.6289	.68190
Construction cost	98	1.00	5.00	4.6122	.68312
Client Satisfaction	98	1.00	5.00	4.4694	.76258
Construction time	98	1.00	5.00	4.4082	.74386
Safety	97	1.00	5.00	4.1340	.99613
Defects	95	1.00	5.00	3.9474	1.13333
Predictability (time and cost)	93	1.00	5.00	3.8817	.94235

Source: Research data, 2014

The findings revealed that, five out of seven construction projects key performance indicators had a mean ranging from 4.63 to 4.13 indicating a high degree of agreement in the respondent views that the indicators are important. From the responses, construction quality had a mean of 4.63 an indication that the respondents were in agreement. This concurring with supervisors views previously analysed. Construction cost had SD 0.683, client satisfaction SD 0.763 construction time SD 0.744. The results revealed low level of standard deviations (SD), which depict high degree of consistencies in the respondents' opinions. From Table 4:s 16, 17 and 18, it was observed that the three groups of the respondents (supervisor, procurement officer and contractor) were in agreement that construction cost performance, client satisfaction and construction time were the key performance measures of public building project they were involved in. Moreover, the results show that, client satisfaction was among the three major public procurement performance indicators a clear indication that public sector projects must satisfy the stakeholders/community.

4.7 Evaluation of indicators of performance success factors and contract performance.

4.7.1 Inferential Analysis

To formulate a suitable model to evaluate the relationship between the public procurement factors and contract performance in public building project, the study carried out inferential analysis that involved multiple regressions, Pearson's correlation coefficient analysis, and then fitting the data in the multiple linear regression model to determine whether it's valid. The aim of inferential analysis is to make conclusions out of the data between the independent and dependent variables.

4.7.1.1 Multiple linear Regression Analysis

Table 4: 19: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.112	4	2.278	7.881	.000[a]
Residual	26.304	91	.289		
Total	35.416	95			

a. Predictors: (Constant), Fairness and Equity, Cost effectiveness, Competition, Transparency; b. Dependent Variable: Y

Source: Research data,2014

In this study, regression analysis was used to assess the relationship between of public procurement system factors and contract performance of public building projects. The F critical at 5% level of significance was 2.47. Since F calculated is greater than the F critical (Value=7.881), this shows that the overall model was significant. From table 19 above, the significance value is 0.001 which is less than 0.05 thus the model is statically

significance in predicting how transparency, competition, cost effectiveness, fairness and equity influence public building projects performance in Nairobi-Kenya.

4.7.1.2 Pearson's Correlation Coefficient

The study used Pearson's correlation coefficient (r) technique to analyse the degree of relationship between two variables (independent and dependent). The independent variables of this study; transparency, competition, cost effectiveness, fairness and equity; the performance of public building projects was the dependent variable in this study.

Table 4: 20: Pearson's Correlation Coefficient

		Y	Transparency	Competition	Cost effectiveness	Fairness &Equity
	Pearson Correlation	1	.442**	.165	.480**	.062
	Sig. (2-tailed)		.000	.108	.000	.546
	N	98	96	96	96	96
Transparency	Pearson Correlation	.442**	1	.429**	.687**	.173
	Sig. (2-tailed)	.000		.000	.000	.092
	N	96	96	96	96	96
Competition	Pearson Correlation	.165	.429**	1	.376**	.373**
	Sig. (2-tailed)	.108	.000		.000	.000
	N	96	96	96	96	96
Cost effectiveness	Pearson Correlation	.480**	.687**	.376**	1	.099
	Sig. (2-tailed)	.000	.000	.000		.336
	N	96	96	96	96	96
Fairness and Equity	Pearson Correlation	.062	.173	.373**	.099	1
	Sig. (2-tailed)	.546	.092	.000	.336	
	N	96	96	96	96	96

**. Correlation is significant at the 0.01 level (2-tailed). Dependent Variable: Y

Source: Research data, 2014

Table 4: 20, illustrate the Pearson's coefficient correlation (r), analyse from the study. As shown in the table, transparency and performance was found to be highly significant (r = 0.442), (P < 0.0010) (highly correlated). This indicated that, if the transparency index is high the project performance is also high and therefore public building project with high transparency are delivered. The researcher also found that, there is a high significant (r = 0.48, P < 0.001) between cost effectiveness and performance of the public building project (highly correlated) and therefore, if the cost effectiveness index is high the performance of the public building project is also high. Public building projects with high cost effectiveness factor achieved higher level of performance. This confirm the earlier descriptive statistics analysis as shown in Table 4: 13 that, cost-effectiveness and transparency are the main public procurement core factors that have the most significant influence towards performance of contract during implementation. However, from the table above, competition is not correlated with the performance (r = 0.165, P= 0.108) and the same case applied to the fairness and equity (r= 0.062, P< 0.546) and therefore the two index are not important as far as success performance of public building project was concerned.

Table 4: 21: Significance of the variable in the Model

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**	**Tolerance**	**VIF**
1 (Constant)	2.448	.420		5.829	.000		
Transparency	.174	.096	.232	1.801	.075	.492	2.031
Competition	-.058	.090	-.069	-.643	.522	.710	1.409
Cost effectiveness	.335	.122	.345	2.745	.007	.517	1.935
Fairness and Equity	.011	.080	.014	.141	.888	.856	1.168

a. Dependent Variable: Y

Source: Research data, 2014

On fitting the multiple linear regression model of the form,

$$Y=\beta_0 +\beta_1 X_1+\beta_2 X_2 +\beta_3 X_3 +\beta_4 X_4 +\varepsilon \qquad \textit{Equation. 1}$$

Where;

Y= performance of public building project during implementation

β_0= Is a constant, which is value of dependent variable when all the independent variables are zero

β_i Is the coefficient for X_i (1, 2, 3, and 4)

Independent variable (Core Principles of public procurement system)

X_1 = Transparency Index

X_2= Competition Index

X_3= Fairness and Equity index

X_4= Cost-Effective Index

ε= is the error

However, from Table 4: 19, ANOVA, the model was found to be valid {f (4, 91) = 7.881, P< 0.001)}, however this model can only predict 25.7% of the variation in performance index and therefore 74.3% is explained by other factors not explained in this study see Table 4: 21 below on coefficient of determination.

Therefore, from Table 4: 20, the model =

$$\mathbf{Y= 2.448+0.174X_1- 0.58X_2 + 0.335X_3 +0.011X_4}$$

In this model the only significant predictor is X_3 (cost effectiveness) with t= 2.745 and P = 0.007, see Table 4: 21. Further, if all the other variables are kept constant, a unit increase in transparency will lead to a 0.174 increase in performance of public building project. A unit increase in cost effectiveness will lead to 0.335 increases in performance of public building project. These results imply that cost effectiveness contribute more to the performance of public building projects.

Table 4: 22: Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507[a]	.257	.225	.53764

a. Predictors: (Constant), Fairness and Equity, Cost effectiveness, Competition, Transparency

Source: Research data, 2014

In conclusion, if the client does not address cost effectiveness, the project is likely to be unsuccessful. The finding is supported by separate method of study adopted for the sake of triangulation, refer to the tables.

4.8 Summary

The research was administered to 48 procuring entities with only 98 filled and returned questionnaires out off 144 respondents with a response rate of 68%. The respondents included; procurement officers, supervisors and contractors. Moreover, the respondents mean year of experience was 10.8 indicating adequate experience in construction industry. From the analysis, it was found that the supervisor determines contract performance success of project. The result of the study revealed that, most projects studied had a value of 20million and above.

From the results presented on subsequent findings, it was evident that, indicators of contract performance success include advertisement of tenders in local daily or on web site and value for money the two being sub factor of transparency and cost effectiveness respectively. Additionally factors affecting performance success are namely: delay in dispute resolution, honoring certificate and technical managerial expertise. On construction projects performance indicators (post result) the majority of the respondents indicated that, quality performance, cost performance and client satisfaction are the key measures of performance success. Finally, this research revealed

that, transparency and cost effectiveness contribute significantly in predicting contract performance success. However, the extent of influence of competition and transparency on performance of projects was rated as high.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS & RECOMMENDATIONS

5.1 Introduction

In the light of the study objectives, this study presents the summary of the study findings, conclusions and recommendations and future research areas.

5.2 Summary of Findings

The overall objective of this study was to evaluate public procurement system and its influence on contract performance of public building projects. In particular the study sought to determine the public procurement indicators of project success that have significant influence on performance of public building projects; assess the extent to which the public procurement indicators influence the contract performance of public building projects; evaluate the relationship between the public procurement indicators of project success and contract performance and finally formulate a suitable management manual.

The respondents were 144, drawn from a sample population of 48 procuring entities in Nairobi. The respondents were in three categories; procurement officer, supervisors and the contractors. The tools used to collect data were questionnaires and interview schedule, which the researcher administered personally. The data analysis was done with aid of SPSS version 16 (2007) to generate frequencies, percentages, mean, standard deviation, Pearson's correlation coefficient, ANOVA, and multiple linear

regression analysis. The literature review covered procurement system, Legal Framework of Procurement in Kenya and its Evolution, social and economic responsibility of public procurement, effect and outcome on performance, contract formulation, construction project performance indicators, global best practices, procurement manual, research gap and finally conceptual framework.

5.2.1 Specific objective one

From the literature review, the Kenya public procurement act is anchored on the new Constitution, 2010 which sets standards with regards to procurement requiring the public procurement system to adopt the principle factors namely; transparency, competition cost effectiveness, fairness and equity. However, for effective public procurement system, each principle factor has underlying public procurement related sub factors which were used by the researcher in the questionnaire to interrogate the respondents. The public procurement related sub factors were listed without indicating under which principle factor they belong to. This was to avoid any biasness from the respondents as they identify the public procurement indicators of project success that have significant influence on public building project they are involved in.

According to the results of this study, in a Likert scale of 1- 5, advertising the tenders in local daily newspaper or in web site was rated most significant public procurement system predictor of project success. This is a sub factor of transparency. 69.4% of the respondents supported the principle of publicity to complement competition by ensuring that those contractors who might be able to win contracts are able to find out those contracts and put themselves forward. They asserted that, allowing tender to go public as required by law, which has forced institutions to face up the reality of a situation and makes officials more responsible, especially if they know they have to justify their decisions, and actions afterward. In addition, this means the rules are publicized as the basis of procurement decisions prior to their use. It promotes competitiveness and

innovation by the contractors and the best contractor is awarded the contract and therefore an indicator of project performance success. This is supported by Allison, (2007) study that, transparent system is one which is open and requires that all tender information be made publicly available. Kenya public procurement system provides that if the procuring entity must advertise tenders and does not have a website, they may publish on the PPOA website or mandatory publication in at least one national newspaper of wide coverage.

Value for money for project was considered in terms of whole life cost and satisfaction of client was identified as public procurement predictor of success with significant influence on performance of public building projects. The factor is an ingredient of Cost effectiveness principle factor. Based on the findings of the study, the factor had a support of 61.8% of the 97 respondents (Figure 4. 6).

However, 61.8% of the respondents were unanimous as indicated by high percent agreement on the project they are involved in. From the structured interview the study found that no cost benefit analysis is undertaken for the public building project and stakeholder (community) are not involved. This is supported by research work by Allison, (2007) that, measures should be put in place to ensure the value for money is maintained throughout project implementation, whole life cost.

Informing the successful contractor and other tenderers on the outcome of the tender and therefore making it public of the winner of the contract is a significant factor. From the findings, 80.2% of the respondents agreed it's significant. On the three categories of the respondents 73.3% of procurement officer which was the highest had indicated it as most significant. This is about transparency, publicly announcing the winner, and making public the result of any protest or other challenge to the selection decision in effort to get best out of the many choices and therefore getting the best-evaluated

contractor to implement the project; scholars Schooner, *et al.*, (2008) on transparency support this.

From the findings of the study, 60.2% on average of the respondents agreed criteria for evaluating tender was significant for all the projects. 60% of the contractors indicated that criteria for evaluation as factor influenced contract performance. This is fairness and equity in public procurement process. The procurement officers had indicated 96.3% significant, which was quite high, and this is because they procurement officers are the one charged with the responsibility of evaluating the tenders and therefore understand that the selection of the contractor has direct correlation with performance of the project during implementation. Alfred (2008) supports this in his study that, irregularities of the selection of the contractor is the prediction of the poor performance of public building projects. In addition, the study is supported Stephanus, (2009) in his study, public procurement law: comparative analysis supported fair, objectively justifiable, and non-discriminatory selection specifications and criteria to be used to evaluate tenders.

The results of this research indicated that, procuring entity officials documented their decisions and are accountable for their decisions as a factor with significance influencing on performance of building project. This is in support of accountability which is the key ingredient of transparency and the respondents were of the view that, documentation should be throughout the project implementation. Among the respondents, 86.7% were in support, which showed a high significance toward project performance. Most of procurement officer's interviewee agreed that they don't attend site meeting which is part of monitoring and evaluation and involve documentation and accountability. This study is supported by the research done by Schooner, (2008) that, accountability is about holding government officials responsible for procurement action and that documentation is not only at the evaluation and a ward stage, but also at contract administration.

Accessing relevant information by the contractor contributed significantly to project performance with all respondents indicating significance. The free flow of information form part of transparency and is one of the important principles in the public procurement process. At pre-tender and construction stages the flow of information had significant influence on predicting project success. The findings compare favorably with the study done by Stephanus, (2009) in which he asserted that, in public procurement system information should be generally be accessible and available at all stages of the procurement process.

Other factors with significant influence include; procurement due to process being adhered to, in the whole process of project implementation. Respondents interviewed were of the view that, the public procurement law was adhered to by mere fact that it's a public entity and indeed had significantly influenced the performance of the project. However, they were of the opinion that the procedures are too lengthy and if need be should be shortened in order to achieve time performance in project implementation and be able to use the fund before the closure of the financial year. The projects should commence immediately after planning and the law should allow flexibility by removal of capping or ceiling to enhance performance some interviewee asserted.

Contract administration involving monitoring, evaluation and audit was also identified as another factor with significance influence towards performance building projects. The factor had a weighted mean of 4.24 meaning, respondents were in agreement that it had significant influence and this is supported by the respondent frequency of 80% meaning it significantly influence performance of the project. In the subsequent interview schedule, some supervisors acknowledged lack of competent project managers in field of construction to monitor the project during implementation hampering performance of project. These findings are in line with the assessment done by CPI survey under OECD and WB (2007) that indicated that, eleven percent (11%) of procurement contracts surveyed did not have mechanism of monitoring, evaluation, and

audit during implementation. Moreover the study revealed that the project supervisor determine project performance success compared to all the other respondents.

Beside public procurement system factors, other factors have an effect towards performance of the public building project during implementation. The factors formed the second question in the questionnaire, where the respondent was to agree or disagree with the statement in which a Likert scale ranging one to five was used. The results of this research indicated that, delay in dispute resolutions in the project affected the performance of project. With the highest mean of 4.58 indicating a high agreement on respondents with their views closely spread at standard deviation of 0.641. The results indicated low value of standard deviation, with high degree of consistencies in the participants' opinions.

Secondly the other factors other than public procurement related factors which affects contract performance, are: - delay in payment of certificates and the technical and managerial expertise which is supported by earlier research findings on public procurement factors. Based on the findings, defective design with statistical analysis of a mean of 4.490 meaning the majority were in agreement on the effect it has on project performance. Respondents agreed that, variation on estimated and actual completion time affects performance of project and finally frequency of variations need to be addressed.

5.2.2 Specific objective two.

Respondents were requested to assess the extent of influence of the public procurement principle factors namely: transparency, competition, cost effectiveness, fairness and equity on performance success of project in a Likert scale ranging from one (very low influence) and five (very high influence).

Based on the study findings, respondents were in agreement with a high mean score of 4.24 that the extent of influence by the competition was high on performance of project followed closely by transparency, third cost effectiveness and lastly fairness and equity. Procurement officer suggested transparency at 90% majority while supervisors and contractor indicated competition at 83.3% and 81% respectively. It can be suggested that, the procurement officers are more interested in accountability, meaning decision taken and their enforcement is done in a manner that follows rules Osafo-Marfo (2003) and regulations. However, supervisors and contractors suggested competition as away to obtain the best product out at the best price and therefore, one way of ensuring project performance success. These findings support the study by United Nation (2011) that, competition predicts desirable contract performance in projects, as a driver of innovation and as an incentive to contractor movement towards marginal costs. Therefore, it can be concluded that, the influence of competition as public procurement-related factor is more at the contractor selection than at any other stage in procurement.

5.2.3 Specific objective three

The researcher used multiple linear regression model to evaluate the relationship between the public procurement-related factors and contract performance in projects during implementation: From the regression model, it was concluded that, if the transparency index is high the higher the performance of public building project and therefore, procuring entities ensuring transparency in their procurement of the building projects are able to have their project delivered.

Secondly from the model, it was confirmed that, the other public procurement-related factor with high influence on contract performance in building project was cost effectiveness. If the cost effectiveness index was high the performance of the building project was also high and therefore, the procuring entities that had put in place measures to ensure cost effectiveness factor achieved a higher performance on building project

they were implementing. Therefore, it can be concluded that, cost-effectiveness and transparency can be used as predictor of project performance success.

From the equation one and table 5:21, taking all the factors (transparency, competition, cost effectiveness, equity and fairness) constant at zero the project performance would be 2.45. However, cost effectiveness must be addressed in all ways in order to ensure successful performance of building projects being implemented at the procuring entities. Out of the study findings, Table 4: 22, it can be concluded that, this model predict 25.7% of the variation in performance success index and therefore 74.3% is explained by other factors not explained in this study.

5.3 Conclusions

The research findings revealed that; cost effectiveness and transparency, are the key predictor of project performance success and therefore have significant influence on contract performance of public building project. The findings of the study are as follows: .

i. Transparency this include; advertisement of the tenders in local daily newspaper or in web site, Notification of the successful contractor and other tenderers on the outcome of the tender that is publicly announcing the winner and making public the result of any protest or other challenge to the award, public entity official to document their decisions and should be accountable for their decisions and the documentation should not only be at evaluation but also contract administration, contractors accessing relevant information at all stages of project implementation, and following the procurement due process

ii. Cost effectiveness which include; taking into consideration the value for money for the project in terms of whole life cost and satisfaction of the client, measures put in place to ensure effective contract administration/ evaluation and monitoring and audit

iii. Fairness and equity that include; criteria for evaluating tenders which should be objectively justifiable and non-discriminatory and making public the criteria and any clarification of tenders by procuring entity on request was done without discrimination

iv. Competition which include; all contractors were able to access relevant information at the same time during tendering process, and use of open tendering method.

Out of the study findings, transparency extent of influence on project performance was rated as high. This is because of advertisement of tenders on local daily and web site, notification of the successful contractor and other tenderers on the outcome of the tender and making public the result of any protest or other challenge to the award to ensure the lowest evaluated bidder is awarded the bid.

This study revealed that, cost effectiveness extent of influence on performance of public building project was also rated high. This was achieved though taking into consideration the value for money for the project in terms of whole life cost and satisfaction of the client and ensuring professionals undertake the role of evaluating bids and contract administration. The majority of respondent agreed that, the extent of influence by competition was high on performance of project as well. This was because of the use of open tendering method, and accessing relevant information at all stages of project implementation.

This study revealed other factors beside those of public procurement-related factors that have an effect on the project implementation namely; dispute resolutions, which consumes a lot of time before they are resolved particularly at contract award stage. Delay in honoring payment certificates highly affects performance of public projects. The participants were in agreement that this was due to lengthy process or bureaucracy

on approval of payment and the government delay in releasing funds for development leading to delayed projects attracting interest surcharged by contractors. These issues need to be addressed seriously. Projects funded externally by donor such as EU exhibited good performance, because of their reporting structures and payment methods with less bureaucracy. The public procurement law largely looks at process of procurement mainly at pre-tender stage and leave out the project management, most of the project exhibited some gaps in technical and managerial aspect. The study revealed that the supervisors play a crucial role on success of project. Construction cost, quality and client satisfaction were found to be the best key public procurement system performance indicators of public building project among others.

5.4 Recommendations

In light of the study findings, the following are the recommendations;

Adopt and implement e-tendering/bidding. This will ensure that the key public procurement success factors, transparency, cost-effectiveness, competition, fairness, & equity are adhered to. Costs benefit analysis on public projects to be undertaken before construction, with stakeholders/community participation.

The study recommends affirmative action to ensure that the costs of building materials are manageable through VAT exemption. Alternative technology to enable use of substitute and affordable use of materials e.g. use of panels instead of stones. Use of building technology like the East Asian countries that reduce the time required to construct hence eliminating cost overrun, time overrun etc. Risk management should be addressed at early stages of procurement process to avoid delay in project implementation from inception to close up.

Public procurement should be more transparent with possibility of meeting minutes being made available to the public as well as video archives. Proper documentation at all stages to enhance monitoring, evaluation and audit. The study recommends E-Tendering, contractor selection and rating system to be introduced and implemented. Improve communication and monitoring by adopting ICT.

Sensitize the contractors and other players (supervisors/professionals) to be aware of the expectations of the Law (PPD Act 2005) and regulations because of the Audit queries.

The laws/ rules and procedures should be regularly reviewed to address the challenges encountered in procurement processes. Engage professionals in all projects/ competent project managers in construction project management. Project implementation team monitoring and evaluation agree on milestone.

The study recommends procurement officials to be involved in project management. Procurement agents should endeavor to acquire in house technical capacity and reduce reliance on government ministries for technical assistance. Improve communication, monitoring and evaluation.

Cost effectiveness and transparency must be addressed in all ways in order to ensure success performance of building projects in public sector. Finally, the study recommends suitable procurement management manual to be simulated to current public procurement works policy manual. A conceptual model showing the public procurement related factors as predictors of project performance success with a review/feedback mechanism hence improving considerably contractor rating system in future selection process.

5.5 Further Research Areas

The researcher recommends the following areas for further research.

i. Since the research was carried out in Nairobi, it is necessary to carry similar studies in Mombasa and Kisumu.
ii. Study can be carried after the projects have been completed to know the influence of the public procurement systems.
iii. Effect of public procurement system on time performance for public building construction projects.
iv. Model for Contractor selection in Kenya

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APPINDICES

Appendix 1A: Participants who were interviewed and their description

i. Interviewee No 1: Senior Procurement Official Kenya Industrial Research and Development Institute (KIRDI); Date, 20th May 2014.

ii. Interviewee No. 2: Senior Procurement Official Technical University of Kenya (TUK); Date, 17th June 2014.

iii. Interviewee No 3: Quantity Surveyor, Senior Government Official Ministry of Land, Housing and Urban Planning; Date, 26th June 2014.

iv. Interview No 4: Senior Procurement official Pest Control Products Board (PCB)

v. Interviewee No 5: Senior Legal Counsel/Senor Procurement Officer Parliamentary Service Commission (PSC); Date, 18th July 2014.

vi. Interview No 6: Quantity Surveyor, Senior Government Official Ministry of Land, Housing and Urban Planning; Date, 26th June 2014

vii. Interviewee No.7: Senior Supplies and Chain Official Kenya National Library (NLS); Date, 24th July 2014.

viii. Interviewee No.8: Senior Maintenance Engineer Kenya Forest Services (KFS); Date 24th July 2014.

ix. Interviewee No.9: Senior Procurement Official Kenya Plant Health Inspectorate Service (KPHIS); Date 20 August 2014.

x. Interviewee No.10: Senior Maintenance Engineer Kenya Agricultural Research Institute (KARI); Date 21st August 2014.

xi. Interviewee No.11: Senior Procurement Official National Housing Corporation (NHC); Date 26th August 2014

Appendix 2 A: Respondents Validation (Qualitative data)

	No	**Interviewee No 1: Senior Procurement Officer, KIRDI**
Public Entity No.1	1.1.1	*Factors that have significant influence on PPS* Transparency- moderate influence Cost-effectiveness-High influence Competition -High influence Fairness& Equity Moderate influence
	1.1.2	*Extent of effect to PPS during building project implementation* Defective design –greatly affects Frequency of variation greatly affects Delay in honoring payment-greatly affects
	1.1.3	*PPS key performance indicators* Construction cost – fairly effective Construction time- fairly effective Client satisfaction –fairly effective Quality –fairly effective
	1.1.4	*Impediments to effective PPS* Interference by political class Too many watchdogs, PPOA, Parliamentary committee Monitoring Unit, Kenya Anticorruption Team Lack of knowledge of PP&D 2005
	No	**Interviewee No 2: Senior Procurement Official (TUK)**
Public Entity No.2	1.2.1	*Factors that have significant influence on PPS* Transparency- low influence Cost-effectiveness- low influence Competition -low influence Fairness& Equity -low influence
	1.2.2	*Extent of effect to PPS during building project implementation* Defective design –Neutral Frequency of variation greatly affects Delay in payment-Affects

	1.2.3	*PPS key performance indicators* Construction cost – effective Construction time- effective Client satisfaction – effective Quality –Very effective Predictability(cost &time)- Very effective
	1.2.4	*Impediments to effective PPS* Bureaucracy- Very low Interference – Low Ineffective project monitoring & evaluation-High Client cash flow issues-Neutral Knowledge on PP&D Act- low Professional ethics-Low
	1.2.5	*Critical influencing factors on PPS during building project implementation* Ineffective project monitoring and evaluation Funding source/cash flow and magnitude of value of project Interference from outsiders especially when the stake is high. Procurement officials to be involved in project monitoring (site meetings)
	No	**Interviewee No 3: Quantity Surveyor, Directorate of Public Works.**
Public Entity No.3	1.3.1	*Factors that have significant influence on PPS* Transparency- highly influence Cost-effectiveness- moderately Competition -very low influence Fairness& Equity very low influence
	1.3.2	*Extent of effect to PPS during building project implementation* Defective design –greatly Variation- greatly affects Delay in payment-greatly affects Cost overrun-greatly affect Time overrun-greatly affect
	1.3.3	*PPS key performance indicators* Construction cost – very effective

		Construction time- fairly effective Client satisfaction – moderately Quality –fairly effective
	1.3.4	*Impediments to effective PPS* Bureaucracy- Very low Interference – very high Ineffective project monitoring & evaluation-High Client cash flow issues-very high Knowledge on PP&D Act- high Professional ethics-high
	1.3.5	*Critical influencing factors on PPS during building project implementation* Integrating the PPS with financial & project management especially externally funded projects. Procurement system does not support project management Procurement of works is specific science, should be looked from science point of view not like the off the shelve goods. There is disconnect between procurement office & project management & procurement office does not understand project implementation. Quality is not an issue in public project.
	No	**Interviewee No 4: Senior Procurement official (PCB)**
Public Entity No.4	1.4.1	*Factors that have significant influence on PPS* Transparency- high influence Cost-effectiveness- high influence Competition -moderate influence Fairness& Equity -moderate influence
	1.4.2	*Extent of effect to PPS during building project implementation* Defective design –affects Variation- affects Delay in payment-greatly affects Cost overrun- affects

		Time overrun-greatly
	1.4.3	*PPS key performance indicators*
		Construction cost – very effective
		Construction time- effective
		Client satisfaction – very effective
		Quality –Very effective
		Predictability(cost &time)- effective
	1.4.4	*Impediments to effective PPS*
		Bureaucracy- Very high
		Interference – high
		Ineffective project monitoring & evaluation-High
		Client cash flow issues- very high
		Knowledge on PP&D Act- high
		Professional ethics-high
	1.4.5	*Critical influencing factors on PPS during building project implementation*
		Supervision of project
		Timely payment to respective service providers
		A work plan in place and sticking to it by all concerned.
	No	**Interviewee No 5: Senior Legal Counsel/Senor Procurement Officer (PSC)**
Public Entity No.5	1.5.1	*Factors that have significant influence on PPS*
		Transparency- very low influence; interference in process by non players, which derail or delay and ignorance of due process.
		Cost-effectiveness- very low influence; problem with PPS is lack of serious cost best benefit analysis on projects undertaken, nobody cares about cost benefit.
		Competition -high influence
		Fairness- very high influence
		Extent of effect to PPS during building project implementation
	1.5.2	Defective design –no affects , properly designed
		Variation- somewhat affects
		Delay in payment-somewhat affects

		Cost overrun- moderately affects Time overrun-somewhat affects *PPS key performance indicators*
	1.5.3	Construction cost – fairly effective Construction time- effective Client satisfaction – effective Quality –effective Predictability(cost &time)- moderately effective *Impediments to effective PPS*
	1.5.4	Bureaucracy- high Interference – high Ineffective project monitoring & evaluation-moderately high Client cash flow issues- high Knowledge on PP&D Act- moderately high Professional ethics-moderately high *Critical influencing factors on PPS during building project implementation*
	1.5.5	Unavailability of cash required. Poor project management –unprofessional project management Poor initial planning Lack of transparency in procurement Need to involve the stake holders in the project Procurement official to be involved in project management.
	No	**Interviewee No 6: Quantity Surveyor, Directorate of Public Works.**

Public Entity No.6	1.6.1	*Factors that have significant influence on PPS* Transparency- very high influence Cost-effectiveness- very high influence Competition -moderately influence; need to limit competition Fairness- very high influence Equity- not important
	1.6.2	*Extent of effect to PPS during building project implementation* Defective design –greatly affects Variation- somewhat affects, variation are necessary and contingency may be used to cover variations. Delay in payment-affects Cost overrun- moderately affects, Time overrun-no affect whatever
	1.6.3	*PPS key performance indicators* Construction cost – very effective, construction cost is key but funds are scarce, social economic factors- people's welfare. Construction time- neutral Client satisfaction – effective Quality –effective Predictability(cost &time) - fairly effective
	1.6.4	*Impediments to effective PPS* Bureaucracy- low Interference – low Ineffective project monitoring & evaluation- high Client cash flow issues- high Knowledge on PP&D Act- low Professional ethics-low
	1.6.5	*Critical influencing factors on PPS during building project implementation* Time taken from tendering to project commencement a times too lengthy (shorten the time)-tendering, signing, review. Start project after planning.

	No	Interviewee No 7: Senior Supply & Chain Department Head (NLS)
Public Entity No.7	1.7.1	*Factors that have significant influence on PPS* Transparency- very high influence Cost-effectiveness- very high influence Competition – very high influence Fairness- very high influence Equity- very high influence
	1.7.2	*Extent of effect to PPS during building project implementation* Defective design –greatly affects Variation- affects, Delay in payment- greatly affects Cost overrun- greatly affects, Time overrun- greatly affects
	1.7.3	*PPS key performance indicators* Construction cost – very effective, Construction time- very effective Client satisfaction – very effective Quality – very effective Predictability(cost &time) - very effective
	1.7.4	*Impediments to effective PPS* Bureaucracy- moderate Interference – low Ineffective project monitoring & evaluation- very high Client cash flow issues- very high Knowledge on PP&D Act- very high Professional ethics- very high
	1.7.5	*Critical influencing factors on PPS during building project implementation* Cash flow.
	No	**Interviewee No 8: Senior Project Engineer (KFS)**

Public Entity No.8	1.8.1	*Factors that have significant influence on PPS* Transparency- very high influence Cost-effectiveness- very high influence Competition – Moderate influence Fairness- Moderate influence Equity- low influence
	1.8.2	*Extent of effect to PPS during building project implementation* Defective design – affects Variation- moderately affects, Delay in payment- greatly affects Cost overrun- somewhat affects, Time overrun- greatly affects
	1.8.3	*PPS key performance indicators* Construction cost – effective, Construction time- moderate Client satisfaction – fairly effective Quality – very effective Predictability(cost &time) - effective
	1.8.4	*Impediments to effective PPS* Bureaucracy- very highly Interference – low Ineffective project monitoring & evaluation- very high Client cash flow issues- very high Knowledge on PP&D Act- low Professional ethics- very high
	1.8.5	*Critical influencing factors on PPS during building project implementation* Bureaucracy in bidding and selection of contractors, interference, lack of competent project managers in construction project management, in the entity most of them are foresters-not knowledgeable in building project.

	No	Interviewee No 9: Senior Procurement Official (KEPHIS)
Public Entity No.9	1.9.1	*Factors that have significant influence on PPS*
		Transparency- very high influence
		Cost-effectiveness- high influence
		Competition – high influence
		Fairness- Moderate influence
		Equity- Moderate influence
	1.9.2	*Extent of effect to PPS during building project implementation*
		Defective design – greatly affects
		Variation- greatly affects,
		Delay in payment- greatly affects
		Cost overrun- moderately affects, can be managed
		Time overrun- moderately affects, can be managed
	1.9.3	*PPS key performance indicators*
		Construction cost – moderate, construction cost visa vis value of the project
		Construction time- very effective,
		Client satisfaction – very effective
		Quality – very effective
		Predictability(cost &time) - effective
		Impediments to effective PPS
	1.9.4	Bureaucracy- high
		Interference – moderate
		Ineffective project monitoring & evaluation- very high
		Client cash flow issues- high
		Knowledge on PP&D Act- high
		Professional ethics- high
		PPOA manual for procurement of works
	1.9.5	Frequently use the STD
		Have unrealistic restriction; example capping of variation is impediment to officials who are honest.
		Core principles easily understood to some extent though should be more specific on works

	1.9.6	*Critical influencing factors on PPS during building project implementation* Cash flow, integrity, selection of contractors and transparency *To improve public procurement of building projects* Ceiling on variation, should be removed to give a free hand on implementers so long a genuine reason is given and authority sought from tender committee.
	No	**Interviewee No 10: Senior Project Engineer (KARI)**
Public Entity No.10	1.10.1 1.10.2 1.10.3 1.10.4	*Factors that have significant influence on PPS* Transparency- very high influence; decisions are made with stakeholder, team constituted to verify the fee note. Cost-effectiveness- high influence Competition – high influence; remote area projects competition low Fairness- high influence Equity- Moderate influence *Extent of effect to PPS during building project implementation* Defective design – moderately affects; frequent changes delay works Variation- greatly affects, Delay in payment- affects Cost overrun- moderately affects Time overrun- affects *PPS key performance indicators* Construction cost – moderate Construction time- effective, Client satisfaction – effective Quality – effective Predictability(cost &time) - effective *Impediments to effective PPS in public building projects implementation* Bureaucracy- high; bidding to award takes a lot of time Interference -low Ineffective project monitoring & evaluation- moderate

		Client cash flow issues- moderate; donor projects slow a time Knowledge on PP&D Act- low Professional ethics- low *PPOA manual for procurement of works* Frequently use manual on specific areas only Information is there in manual
	1.10.5	Should be flexible and remove ceiling clauses in variations Donor condition different example EU, reporting structure and payments method *Critical influencing factors on PPS during building project implementation* Cost of the project Delivery time Specifications
	1.10.6	Currency/economy and politics(patronage) *To improve public procurement of building projects* Sensitize the contractors and other players (professionals) to be aware of the expectation of the Law (PP&D Act 2005)/ regulations because of the Audit queries.
	No	**Interviewee No 11: Senior Procurement Official (NHC)**
Public Entity No.11	1.11.1	*Factors that have significant influence on PPS* Transparency- very high influence Cost-effectiveness- very high influence Competition – very high influence Fairness- very high influence Equity- very high influence
	1.11.2	*Extent of PPS factors during building project implementation* Transparency- very highly Cost-effectiveness- very highly Competition – very highly Fairness- very highly Equity- very highly

	1.11.3	*Extent of effect to PPS during building project implementation* Defective design – moderately affects; frequent changes delay works Variation- greatly affects, Delay in payment- somewhat affects Cost overrun- affects Time overrun- greatly affects
		PPS key performance indicators
	1.11.4	Construction cost –very effective Construction time- very effective, Client satisfaction – very effective Quality – effective Predictability(cost &time) - very effective
		Impediments to effective PPS
	1.11.5	Bureaucracy- high; bidding to award takes a lot of time Interference -low Ineffective project monitoring & evaluation-neutral Client cash flow issues- very high Knowledge on PP&D Act- neutral Professional ethics- very high
		PPOA manual for procurement of works
	1.11.6	Frequently use manual Its strength –create consistence on handling similar projects, create predictability in procurement, have inbuilt checks and balances in procedures, application universal and can allow you to bench mark, and provide framework for audit trial. Its weakness- inflexibility and inadaptability to emerging issues, too long procedures leading to cost overrun and time overrun attributed by inflation Adequately address the core principles Transparency- through open tendering Cost effectiveness- evaluation procedures based on compliance of preliminaries, technical and financial parameters which are normally outlined in tender documents.

	1.11.7 1.11.8	The purpose of criteria is to allow for the lowest evaluated bidder to be awarded. Equity- the design of manual allows for equity to be well addressed through procedures open to all bidders interested through open tendering. Fairness- open tendering and the procedures for competition are spelt out in terms of evaluation, award of most qualified contractor. Window period for aggrieved party to appeal in given (7days). *Critical influencing factors on PPS during building project implementation* Project implementation team monitoring and evaluation agree on milestone. Availability of budget (cash flow) to run the project and commitment to all players as the plan of works. Support by the top management to implement the project to closure. *To improve public procurement of building projects* Planning for the projects should be reviewed to ensure the target and milestone achievable and realistic. Affirmative action to ensure that the costs of building materials are manageable through VAT exemption etc. Alternative technology to enable use of substitute and affordable use of materials e.g. use of panels instead of stones. Use of building technology like the East Asian countries that reduce the time required to construct hence eliminating cost overrun, time overrun etc.

Appendix B:: Sample of introduction letter to respondents

Harrison Wachira Kiiru *(AB343-1193/2012)*

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APRIL, 2014

INTRODUCTION TO INTERVIEW RESPONDENTS

I'm a student at JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY (JKUAT) currently undertaking Masters of Science Degree in Construction Project Management. As a course requirement, I'm undertaking a study on **"Public Procurement System and its Influence on the Building Contract Performance during Project Implementation: The Case of Nairobi-County".**
The objectives of this research study are to:

i. To examine the public procurement factors that have significant influence on building project contract performance.

ii. To assess the extent to which the public procurement indicators of success influence the contract performance.

iii. Evaluate the relationship between the public procurement predictor of success factors and contract performance.

iv. Make recommendations for improved works manual to be simulated to current PPOA work manual.

The researcher reassures respondents that all the information given will be treated with a lot of confidentiality and no information collected in this study will be used for any other purpose than stated above.

Thanks you for your cooperation.

Yours Faithfully,

Appendix C: QUESTIONNAIRE

QUESTIONNAIRE FOR PUBLIC INSTITUTIONS

This questionnaire is divided into A, B, C,& D, please respond as accurately and as honestly as possible to all questions by either using a tick [√] in the box that closely match your view or write it on the space provided.

(To be answered by procurement officers)

PART A: General Information

1. What is your current position?……

2. Please indicate your years of experience in procurement practices. ……..year(s)

3. What is the approximate value of the ongoing construction project? Kshs (millions)……

PART B: Public Procurement-related Factors

4. The following are public procurement-related factors which have significant influence towards contract performance in public building projects during implementation. You are being asked to identify and score all the factors in order of their importance towards project performance during implementation *(the factors refer to the building project you are involved in):* Use the Rating 1-5 whereas, ***5*-Most significant factor, 4, 3, 2** and **1-Least significant factor.**

No	Public procurement-related factors that have significance influence towards contract performance in project implementation.	Score
1	Procuring entity publically advertised the tender in the local daily press or in the internet or web based system.	
2	The value for money for the project was considered in terms of whole life cost, time and satisfaction of the client.	
3	All contractors were able to access information at the same time during tendering process.	
4	The time frame at tendering stage was realistic, taking into account the circumstances of the procuring entity, the tenderers and public at large.	
5	Procuring entity officials documents all their decisions and are accountable for their decisions and accept responsibility for their actions.	
6	Unpredictable cash flow of the client affect project delivery	
7	The procurement due process as outlined in the Public Procurement regulations were adhered to.	
8	Open tendering method was used as far as is practical.	
9	Discriminatory and non quantifiable criterion was used for evaluating tenders for the project.	
10	Minutes/ records of proceedings for the project are accessible to tenderers	
11	There was exclusion of tender(s) on the basis of corruption, collusion, and false declarations.	
12	. Measures put in place to ensure effective contract administration/evaluation, monitoring and audit	
13	The client failed to put in place provisions on how to deal with abnormally low tenders.	
14	Information on modifications or alterations to tenders if any was not given to all tenderers at the same time.	
15	The criteria for evaluating tenders were specified.	
16	Successful contractor was notified and participating tenderers were notified as well.	
17	In public interest, procuring entity did award tender with lowest evaluated tender sum.	
18	All contractor were able to access relevant information	
19	All contractors signed a code of conduct enforcing ethical standards.	
20	In public interest, procuring entity disqualified tender(s) with abnormally low tender sum.	
21	Strict realistic time frame was adhered to at tendering stage.	
22	All contractors were present at the opening of tenders.	
23	Any clarification of tenders by procuring entity on request was done without discrimination.	
	Please, indicate other factors that have an influence on performance that	

	have not been listed above and score them accordingly.	
24		
25		

5. What is the extent of public procurement system factors influence on the performance of building project you are involved in? Mark the "box" that best describe your response use the rating 1-5**,** whereas **1-Very Low, 2-Low, 3-Neutral, 4-High,** and **5-Very Highly**

		1	**2**	**3**	**4**	**5**
i.	Transparency	☐	☐	☐	☐	☐
ii.	Cost-effectiveness	☐	☐	☐	☐	☐
iii.	Competition	☐	☐	☐	☐	☐
iv.	Fairness and Equ	☐	☐	☐	☐	☐

PART C: Other factors affecting contract performance in project

6. Below are factors that affect performance of public building projects during implementation. You are being asked to indicate your level of agreement or disagreement with each statement by indicating whether you: **Strongly Agree (SA);**

Agree (A); Neutral (N); Disagree (D); Strongly Disagree (SD).

No	Factors which have an effect on performance of building project under implementation	Levels of effect				
		SA	A	N	D	SD
1	Defective design influence time performance.					
2	Variation between estimated and actual completion time impact on time performance.					
3	Traditional procurement method greatly influences time performance.					
4	Actual commencement time influence time performance.					
7	Frequency of variations greatly influence cost performance.					
8	Uniqueness of the project affects cost performance.					
9	Delay of dispute resolutions has very high impact on project timely delivery.					
10	Fluctuation costs have least implication on project cost.					
11	Selection of domestic sub-contractors has least impact on quality performance.					
12	Risk management has least effect on cost performance.					
13	Technical and managerial expertise has an impact on performance.					
14	Health and safety measures have least impact on cost performance.					
15	Actual times for completion of planned tasks against schedule greatly influence time performance.					
16	Bureaucracies greatly influence time performance.					
17	Delay in Honouring payment certificates highly affects time performance.					
18	Regularity of site meetings greatly influences time performance.					
19	Communications with parties greatly influence time performance.					
20	Frequencies of rework greatly affect time performance.					
21	Lengthy post- award negotiations influence time performance negatively.					
22	Source of funding affects time performance					
23	The client influence time performance					
	Please, indicate other factors that have an effect on performance that have not been listed above and agree or disagree with each statement accordingly.					
24						

25						

PART D: Building Project Performance Indicators

7. Below are list of main performance indicators of public procurement system on public building projects during implementation. You are being asked to score the performance indicators of success by indicating the level of importance during project implementation**: Use rating 5-Most important indicator**, **4-Important indicator, 3- Moderate important indicator, 2- Neutral,** and **1- Not important indicator.**

No	Key performance indicator in building projects	Score
1	Construction Cost	
2	Construction time	
No	**Key performance indicator in building projects(cont')**	**Score**
3	Client Satisfaction	
4	Quality	
5	Safety	
6	Defects	
7	Predictability	
	Please, indicate other performance indicators that have not been listed above and score by indicating level of importance.	
8		
9		

8. In your own opinion, what would you recommend to be done to improve public procurement system?……..

Thank you so much for taking your time to fill out this questionnaire

QUESTIONNAIRES FOR PROJECT SUPERVISOR

This questionnaire is divided into A, B, C, & D, please respond as accurately and as honestly as possible to all questions by either using a tick [√] in the box that closely match your view or write it on the space provided.

(To be answered by project supervisor)

PART A: General Information

1. What is your status in the project?

Project Manager ☐ Project Architect ☐ Project Engineer ☐

Project Quantity Surveyor ☐

2. Years of experience of respondent……. Year(s)

3. What is the approximate value of the ongoing construction project? Kshs (million) ……..

PART B: Public Procurement-related Factors

4. The following are public procurement -related factors which have significant influence towards success of public building projects during implementation. You are being asked to identify and score all the factors of success in order of their importance towards project performance *(the factors refer to the building project you are involved in):* Use the Rating 1-5, whereas, **5-Most significant factor** then **4, 3, 2** and **1- least significant factor.**

No	Public procurement-related factors that have significance influence towards contract performance in project implementation.	Score
1	Procuring entity publically advertised the tender in the local daily press or in the internet or web based system.	
2	The value for money for the project was considered in terms of whole life cost, time and satisfaction of the client.	
3	All contractors were able to access information at the same time during tendering process.	
4	The time frame at tendering stage was realistic, taking into account the circumstances of the procuring entity, the tenderers and public at large.	
5	Procuring entity officials documents all their decisions and are accountable for their decisions and accept responsibility for their actions.	
6	Unpredictable cash flow of the client affect project delivery	
7	The procurement due process as outlined in the Public Procurement regulations were adhered to.	
8	Open tendering method was used as far as is practical.	
9	Discriminatory and non quantifiable criterion was used for evaluating tenders for the project.	
10	Minutes/ records of proceedings for the project are accessible to tenderers.	
11	There was exclusion of tender(s) on the basis of corruption, collusion, and false declarations.	
12	. Measures put in place to ensure effective contract administration/evaluation, monitoring and audit	
13	The client failed to put in place provisions on how to deal with abnormally low tenders.	
14	Information on modifications or alterations to tenders if any was not given to all tenderers at the same time.	
15	The criteria for evaluating tenders were specified.	
16	Successful contractor was notified and participating tenderers were notified as well.	
17	In public interest, procuring entity did award tender with lowest evaluated tender sum.	
18	All contractor were able to access relevant information	
19	All contractors signed a code of conduct enforcing ethical standards.	
20	In public interest, procuring entity disqualified tender(s) with abnormally low tender sum.	
21	Strict realistic time frame was adhered to at tendering stage.	
22	All contractors were present at the opening of tenders.	
23	Any clarification of tenders by procuring entity on request was done without discrimination.	

	Please, indicate other factors that have an influence on performance that have not been listed above and score them accordingly.	

5. What is the extent of public procurement system factors influence on the performance of building project you are involved in? Mark the "box" that best describe your response use the rating 1-5**,** whereas **1-Very Low, 2-Low, 3-Neutral, 4-High,** and **5-Very Highly**

		1	**2**	**3**	**4**	**5**
i.	Transparency	☐	☐	☐	☐	☐
ii.	Cost-effectiveness	☐	☐	☐	☐	☐
iii.	Competition	☐	☐	☐	☐	☐
iv.	Fairness and Equ	☐	☐	☐	☐	☐

No	Factors which have an effect on contract performance in project implementation	Levels of effect				
		SA	A	N	D	SD
1	Defective design influence time performance.					
2	Variation between estimated and actual completion time impact on time performance.					
3	Traditional procurement method greatly influences time performance.					
4	Actual commencement time influence time performance.					
7	Frequency of variations greatly influence cost performance.					
8	Uniqueness of the project affects cost performance.					
9	Delay of dispute resolutions has very high impact on project timely delivery.					
10	Fluctuation costs have least implication on project cost.					
11	Selection of domestic sub-contractors has least impact on quality performance.					
12	Risk management has least effect on cost performance.					
13	Technical and managerial expertise has an impact on performance.					
14	Health and safety measures have least impact on cost performance.					
15	Actual times for completion of planned tasks against schedule greatly influence time performance.					
16	Bureaucracies greatly influence time performance.					
17	Delay in Honouring payment certificates highly affects time performance.					
18	Regularity of site meetings greatly influences time performance.					
19	Communications with parties greatly influence time performance.					
20	Frequencies of rework greatly affect time performance.					
21	Lengthy post- award negotiations influence time performance negatively.					
22	Source of funding affects time performance					
23	The client influence time performance					
	Please, indicate other factors that have an effect on performance that have not been listed above and agree or disagree with each statement accordingly.					
24						
25						

PART C: Other factors affecting performance of building Projects

6. Below are factors which have an effect towards performance of public building projects during implementation. You are being asked to indicate your level of agreement or disagreement with each statement by indicating whether you: **Strongly Agree (SA); Agree (A); Neutral (N); Disagree (D); strongly Disagree (SD).**

PART D: Building Project Performance Indicators

7. Below are list of main performance indicators of public procurement system on public building projects during implementation. You are being asked to score the performance indicators of success by indicating the level of importance during project implementation**:** Use the rating 1-5 whereas, **5-Most important indicator, 4-Important indicator, 3- Moderate important indicator, 2-Neutral,** and **1- Not important indicator**

No	**Key performance indicator in building projects**	**Score**
1	Construction Cost	
2	Construction time	
3	Client Satisfaction	
4	Quality	
5	Safety	
6	Defects	
7	Predictability(time and cost)	
	Please, indicate other performance indicators that have not been listed above and score by indicating level of importance.	
8		
9		

8. In your own opinion, what would you recommend to be done to improve public procurement system? …….

……

……

……

……

**Thank you so much for taking your time to fill out this questionnaire*

QUESTIONNAIRES FOR PROJECT CONTRACTOR

This questionnaire is divided into A, B, C, & D, please respond as accurately and as honestly as possible to all questions by either using a tick [√] in the box that closely match your view or write it on the space provided.

(To be answered by Contractor)

PART A: General Aspect

1. What is your status in the site?……..

2. Years of experience ……. Year(s)

3. What is the approximate value of the ongoing construction project? Kshs (million)……..

PART B: Public Procurement-related Factors

4. The following are public procurement-related factors which have significant influence towards contractor's performance during project implementation. You are being asked to identify and score all the factors in order of their importance towards project success *(the factors refer to the building project you are involved in):* Use the rating 1-5 whereas, **5- Most significant factor,** then **4, 3, 2** and **1-least significant factor.**

No	Public procurement-related factors that have significance influence towards contract performance in project implementation.	Score
1	Procuring entity publically advertised the tender in the local daily press or in the internet or web based system.	
2	The value for money for the project was considered in terms of whole life cost, time and satisfaction of the client.	
3	The contractor was able to access information at the same time during tendering process.	
4	The time frame at tendering stage was realistic, taking into account the circumstances of the procuring entity, the tenderers and public at large.	
5	Procuring entity officials documents all their decisions and is accountable for their decisions and accepts responsibility for their actions.	
6	Unpredictable cash flow of the client affects project delivery.	
7	The procurement due process as outlined in the Public Procurement regulations were adhered to.	
8	Open tendering method was used.	
9	Discriminatory and non quantifiable criterion was used for evaluating tenders for the project.	
10	Minutes/ records of proceedings for the project are accessible to tenderers.	
11	There was exclusion of tender(s) on the basis of corruption, collusion, and false declarations.	
12	Measures put in place to ensure effective contract administration/evaluation, monitoring and audit.	
13	The client failed to put in place provisions on how to deal with abnormally low tenders.	
14	Contractor was informed on modifications or alterations to tender documents if any.	
15	The criteria for evaluating tenders were specified.	
16	Successful contractor was notified within the stipulated time frame.	
17	In public interest, procuring entity did award tender with lowest evaluated tender sum.	
18	Contractor was able to access relevant information at tendering stage.	
19	Signed a code of conduct enforcing ethical standards.	
20	In public interest, procuring entity disqualified tender(s) with abnormally low tender sum.	
21	Strict realistic time frame was adhered to at tendering stage.	

22	Contractors were present at the opening of tenders.	
23	Procuring entity clarified tender documents on request.	
	Please, indicate other factors that have an influence on performance that have not been listed above and score them accordingly.	
24		
25		

5. What is the extent of public procurement system factors influence on the performance of building project you are involved in? Mark the "box" that best describe your response use the rating 1-5**,** whereas **1-Very Low, 2-Low, 3-Neutral, 4-High,** and **5-Very Highly**

		1	**2**	**3**	**4**	**5**
i.	Transparency	☐	☐	☐	☐	☐
ii.	Cost-effectiveness	☐	☐	☐	☐	☐
iii.	Competition	☐	☐	☐	☐	☐
iv.	Fairness and Equ	☐	☐	☐	☐	☐

PART C: Other factors affecting performance of building projects

6.Below are the effects on contractor's performance which influence performance in public building project during implementation. You are being asked to indicate your level of agreement or disagreement with each statement by indicating whether you: **Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), strongly Disagree (SD).**

No	Factors which have an effect on contract performance in project implementation	Levels of effect				
		SA	A	N	D	SD
1	Defective design influence time performance.					
2	Variation between estimated and actual completion time impact on time performance.					
3	Traditional procurement method greatly influences time performance.					
4	Actual commencement time influence time performance.					
7	Frequency of variations greatly influence cost performance.					
8	Uniqueness of the project affects cost performance.					
9	Delay of dispute resolutions has very high impact on project timely delivery.					
10	Fluctuation costs have least implication on project cost.					
11	Selection of domestic sub-contractors has least impact on quality performance.					
12	Risk management has least effect on cost performance.					
13	Technical and managerial expertise has an impact on performance.					
14	Health and safety measures have least impact on cost performance.					
15	Actual times for completion of planned tasks against schedule greatly influence time performance.					
16	Bureaucracies greatly influence time performance.					
17	Delay in Honouring payment certificates highly affects time performance.					
18	Regularity of site meetings greatly influences time performance.					
19	Communications with parties greatly influence time performance.					
20	Frequencies of rework greatly affect time performance.					
21	Lengthy post- award negotiations influence time					

	performance negatively.					
22	Source of funding affects time performance					
23	The client influence time performance					
	Please, indicate other factors that have an effect on performance that have not been listed above and agree or disagree with each statement accordingly.					
24						
25						

PART D: Building Project Performance Indicators

7. Below are list of main performance indicators of public procurement system on public building projects during implementation. You are being asked to score the performance indicators of success by indicating the level of importance during project implementation**: 5-Most important indicator**, **4-Important indicator, 3-Moderate important indicator, 2-Neutral,** and **1-Not important indicator.**

No	Key performance indicator in building project	Score
1	Construction Cost	
2	Construction time	
3	Client Satisfaction	
4	Quality	
5	Safety	
6	Defects	
7	Predictability	
	Please, indicate other performance indicators that have not been listed above and score by indicating level of importance.	

8. In your own opinion, what would you recommend to be done to improve public procurement system? ……

……

**Thank you so much for taking your time to fill out this questionnaire*

Appendix D:

INTERVIEW QUESTIONS

INTERVIEW SCHEDULE FOR PROCUREMENT OFFICER, SUPERVISOR AND CONTRACTOR

The series of questions in this questionnaire are designed to obtain responses on public procurement system and its influence on performance of public building projects.

Name of the public procuring entity……..

1. In your view, what are the factors that have significant influence on performance of public procurement system of building projects? The rating 1-5, whereas **1-VeryLow influence, 2-Low influence, 3-Neutral, 4-High influence, 5-Very High influence**

		1	2	3	4	5
i.	Transparency	☐	☐	☐	☐	☐
ii.	Cost-effectiveness	☐	☐	☐	☐	☐
iii.	Competition	☐	☐	☐	☐	☐
iv.	Fairness	☐	☐	☐	☐	☐
v.	Equity	☐	☐	☐	☐	☐

2. What is the extent of public procurement system factors that influence performance of building project during implementation? The rating **1-5, whereas 1-VeryLow, 2-Low, 3-Neutral, 4-High, 5-Very Highly**

		1	**2**	**3**	**4**	**5**
i.	Transparency	☐	☐	☐	☐	☐
ii.	Cost-effectiveness	☐	☐	☐	☐	☐
iii.	Competition	☐	☐	☐	☐	☐
iv.	Fairness and Equity	☐	☐	☐	☐	☐

3. What is the extent of the effect of the following factors in the performance of public procurement system during public building project implementation? The rating **1-5.** Whereas, **1- No effect whatsoever , 2-Somewhat affects, 3-Neutral, 4-Affects and 5- Greatly affect**

		1	2	3	4	5
i.	Defective design	☐	☐	☐	☐	☐
ii.	Variation	☐	☐	☐	☐	☐
iii.	Delay in payment	☐	☐	☐	☐	☐
iv.	Cost overrun	☐	☐	☐	☐	☐
v.	Time overrun	☐	☐	☐	☐	☐

4. How effective are the following public procurement system key performance indicators in the building project you are involved in? The rating **1-5. 1-Not at all effective, 2-fairly effective, 3- Neutral, 4- effective, 5-Very effective**

		1	2	3	4	5
i.	Construction Cost	☐	☐	☐	☐	☐
ii.	Construction time	☐	☐	☐	☐	☐
iii.	Client Satisfaction	☐	☐	☐	☐	☐
iv.	Quality	☐	☐	☐	☐	☐
v.	Predictability(time & cost)	☐	☐	☐	☐	☐

5. In your opinion, which of the following is an impediment to effectiveness of public procurement system on performance public building project during implementation? Using the rating 1-5, whereas, **1- Very low, 2-Low, 3-Neutral, 4-High,** and **5-Very high**

		1	2	3	4	5
i.	Bureaucracy	☐	☐	☐	☐	☐
ii.	interference	☐	☐	☐	☐	☐
iii.	clarity of regulations	☐	☐	☐	☐	☐
iv.	client Cash flow issues	☐	☐	☐	☐	☐
v.	Knowledge on PP& D Act	☐	☐	☐	☐	☐
vi.	Professional ethics	☐	☐	☐	☐	☐

6. Do you frequently use PPOA procurement manual as a guide/ procedures for procurement of works?

Yes ☐ No ☐

If yes, briefly describe its strengths and weaknesses as a guide to procurement of works.

7. Does the PPOA procurement Manual for Works broadly interpret the core principles of public procurement system in relation to works? (Transparency, cost effectiveness/value for money, equity, fairness and competition).
8. In your opinion, which are the most critical influencing factors on performance of public procurement system during building project implementation?
9. What would you suggest to be done so as to improve public procurement of building projects?

Appendix E:

Public procurement entities forming the sample size of the study.

No	**Public Procuring Entities(State Corporations)**
1	Nairobi University (UON)
2	Technical University of Kenya (TUK)
3	Kenya Technical teachers college(KTTC)
4	Kinyanjui Technical Training Institute
5	National Youth Service Ruaraka (NYS)
6	National Housing Corporation (NHC)
7	Kenya National Examination Council (KNEC)
8	Kenya Institute of Curriculum Development (KICD)
9	Kenya School of Monetary Studies (KSMS)
10	Parliamentary Service commission (PSC)
11	Kenya Plant Health Inspectorate Service (KPHIS)
12	Kenya Institute of Highways & Building Technology(KIHBT)
13	Kenya Mass Communication(KMC)
14	Kenya Medical Research Institute (KEMRI)
15	Kenya Utalii College (KUC)
16	Institute of Survey of Kenya (ISK)
17	Kenya Pipeline Company (KPC)
18	Jomo Kenyatta Foundation
19	Institute of Certified Public Accountant of Kenya (ICPAK)
20	Kenya Power and Lighting Company(KPLC)
21	Kenya National Bureau of Statistic
22	Kenyatta University (KU)
23	National Social Security Fund (NSSF)
24	Kabete technical institute

25 Kenya Sugar Board
26 Kenya National Museums of Kenya
27 Kenya Forest Service (KFS)
28 Kenya Industrial Estates (KIE)
29 Tea Board of Kenya
30 Kenya Wildlife Services (KWS)
31 Kenya Institute of Business Training (KIBS)
32 Kenya Roads Board
33 Tourism levy fund
34 Kenya Airways (KQ)
35 Kenya Railways Corporation (KRA)
36 Kenya Airports Authority (KAA)

37 Kenya Industrial Research & Development Institute (KIRDI)
38 National Irrigation Board
39 Kenya National Museums of Kenya
40 National Water Conservation and Pipeline Corporation (NWCPC)
41 Pests Control Products Board
42 Kenya Institute of Public Policy Research & Analysis (KIPPRA)
43 Kenya National Library Services(KNLS)
44 National Oil Corporation of Kenya (NOCK)
45 Medical Practitioners & Dentist Board (MPDB)
46 Kenya Revenue Authority (KRA)
47 National Council for Science & Technology (NCST)
48 Kenya Accountants & Secretaries Examination Board (KASNEB)

Source**:** The presidential Taskforce on Parastatals Reforms (Republic of Kenya, 2013)

Public Procurement Entities in Nairobi (target population)

No	Public Procuring Agencies in Nairobi
1	Kenya National Museums of Kenya
2	Kenya Technical Teachers College
3	Nairobi Technical Training Institute
4	Kinyanjui Technical Training Institute
5	National Youth Service Ruaraka
6	Kenya Institute of Special Education
8	Kenya Medical Training college(KMTC)
9	Government secretarial College
10	Kenya School of Monetary Studies
11	Kenya School of Law
12	Kenya Railway Institute
13	Kenya Institute of Highways & Building Technology
14	Kenya Mass & Communication
15	Kenya Medical Research Institute
16	Kenya Utalii College (KUC)
17	Institute of Survey of Kenya
18	University of Nairobi
19	Kenya Technical University
20	ICPAK
21	Multimedia University
22	Kenyatta National hospital
24	Kenya Civil Aviation Authority (KCAA)
25	National Social Security Fund
26	National Hospital Insurance Fund
27	Kenya Forestry Research Institute
28	National Environmental Management Authority
29	Kenya Forest services

30 Kenya Poison Board
31 Numerical Machining Complex
32 Kenya National accreditation services
33 Kenya agricultural & Development Institute
34 East Africa Portland cement
35 Kenya Industrial Property Institute
36 Industrial development bank Capital Limited
37 Kenya Bureau of Standards
38 Kenya National Shipping Line
39 Kenya Airways Authority
40 Kenya Railways Corporation
41 Transport Licensing Board
42 Transport Licensing Appeal Tribunal
43 Kenya Industrial Research & Development Institute
44 Kenya Investment Authority
45 Export Processing Zones Authority
46 Kenya National Trading Corporation
47 Industrial & Commercial Dev. Corporation (ICDC)
48 Industrial Property Tribunal
49 Kenya National Library Services
50 Kenya Post Office corporation
51 Kenya Post Office Saving Bank
52 Capital Market Authority
53 Consolidated Bank
54 National Bank Of Kenya
55 Kenya National Assurance (2001) Limited
56 Capital Markets Tribunal
57 State Corporations Appeals Tribunal
58 Kenya Institute of Public Policy Research and Analysis
59 Kenya Accountants & Secretaries Examination Board (KASNEB)
60 Deposit Protection Fund Board

61 Kenya Revenue Authority
62 Consolidated Bank of Kenya
63 Kenya Reinsurance corporation Ltd
64 Insurance Regulatory Authority
65 Public Procurement Oversight Authority
66 Kenya Tourist Board
67 Kenya Wildlife Service
68 Kenya Utalii College
69 Kenyatta International Conference Center
70 Kenya Petroleum Refinery
71 Electrical Regulatory Commission
72 Kenya Electricity Generating Company (KENGEN)
73 The Energy Tribunal
74 Rural Electrification Authority
75 Kenya Power and Lighting Company(KPLC)
76 Kenya electricity transmission Co.Ltd KETRACO
77 Ewaso Ngiro North Development Authority
78 Industrial development bank Capital Limited
79 Lake Basin Development Authority
80 Kerio Valley Development Authority
81 National Housing Corporation
82 Kenya Road Board
83 Kenya Rural Roads Authority
84 National Oil Corporation of Kenya
85 Communication commission of Kenya
86 Kenya Broadcasting Corporation
87 Postal Corporation of Kenya
88 Telkom Kenya Ltd
89 Kenya Medical Supply Authority KMSA
90 Kenya Film Commission
91 The Kenya Information & Communication Technology

92 Kenya Agricultural Research Institute (KARI)
93 Agricultural Development Corporation
94 Kenya Plant Health Inspectorate Service
95 Pests Control Products Board
96 National Bio safety Authority
97 National Irrigation Board
98 Kenya Sugar Board
99 Kenya Tourist Finance Corporation(Formally KTDC)
100 Kenya Dairy Board
101 Nyayo Tea Zones Development Corporation
102 Kenya Animal Generics Resources Centre
103 Kenya Cooperative College/University
104 Kenya Medical Supplies Authority (KMSA)
105 National Cereals and Produce Board (NCB)
106 Kenya Veterinary Vaccine Production Institute
107 New Kenya Cooperative Creameries Ltd
108 Industrial and Commercial Development Corporation
109 Kenya Water Institute
110 Water Services Regulator Board
112 National Water Conservation & Pipeline Corporation
113 National Irrigation Board
114 Water Services Trust Fund
115 Water Resources Management Authority
116 Public Universities Inspection Board
117 National Council for Science & Technology
118 Higher Education Loan Board
119 Agricultural Finance Corporation.
120 Kenya Institute of Curriculum Development
121 Teachers Service Commission
122 Commission of Higher Education
123 Kenya Industrial Estates (KIE)

124	Kenya National Library Services
125	Jomo Kenyatta Foundation
126	Kenya Literature Bureau
125	Kenya Air Port Authority (KAA)
126	Kenya School of Government
127	Kenya National Examination Council
128	Agro-chemical and Food Company
129	National Construction Authority
130	Kenya Plant Health Inspectorate Services (KEPHIS)
131	Horticultural Crops Development Authority
132	Kenya National Bureau of Statistic
133	Kenya Institute of Public Policy Research & Analysis
134	Drought Management Authority
135	Institute of Human Resource Management
136	Geothermal Development Company (GDC)
137	Tana Athi River Development Authority
138	Kenya Pipeline Company (KPC)
139	Judiciary
140	Kenya Tea Development Authority
141	Kenya Coffee Board
142	Kenya Law
143	Kenya Medical Research Institute
144	Central Bank of Kenya
145	Medical practitioner and dentist board

Source: The Presidential Taskforce on Parastatals Reforms (Republic of Kenya, 2013).

Public Procurement Entities in Kenya

No	Public Procuring Agencies (State Corporations) in Kenya

1. Cereals and Sugar Finance Corporation Cereals and Sugar Finance Corporation
2. Coffee Development Fund
3. Cotton Development Authority
4. Kenya Coconut Development Authority (KeCDA)
5. Pyrethrum Board of Kenya (now Pyrethrum Regulatory Authority)
6. Sisal Board of Kenya Sisal Industry
7. Tea Board of Kenya Tea
8. Coffee Board of Kenya
9. Kenya Sugar Board (KSB) Sugar
10. Canning Crops Board Canning Crops
11. Agro-Chemical and Food Company Companies
12. Kenya Meat Commission (KMC) Kenya Meat Commission
13. Muhoroni Sugar Company Ltd (Under Receivership)
14. South Nyanza Sugar Company
15. Kenya Seed Company (KSC) Companies
16. Kenya Veterinary Vaccine Production Institute
17. National Cereals & Produce Board (NCPB)
18. Coffee Research Foundation
19. Kenya Agricultural Research Institute (KARI)
20. Kenya Sugar Research Foundation
22. National Bio-safety Authority
23. Agricultural Development Corporation Agricultural Development Corporation
24. Kenya Animal Genetics Resource Centre
25. Kenya Tsetse and Trypanosomiasis Eradication Council
26. Agricultural, Fisheries and Food Authority
27. Kenya Leather Development Council State Corporations
28. Kenya Plant Health Inspectorate Services (KEPHIS)
29. National Irrigation Board Irrigation
30. Bukura Agricultural College Bukura Agricultural College
31. Kenya Agricultural and Livestock
32. Kenya Marine and Fisheries Research Institute
33. The Kenya Veterinary Board (KVB) Veterinary Surgeons'

34. Animal Technicians Council Animal Technicians
35. Horticultural Crops Development Authority
36. Chemilil Sugar Company Ltd Companies
37. Nzoia Sugar Company Ltd Companies
38. Kenya Dairy Board Dairy Industry
39. LAPSSET Corridor Development
40. Kenya Ordnance Factories Corporation State Corporations
41. Anti-Female Genital Mutilation Board
42. South - South Centre South
43. Youth Enterprises Development Fund State Corporations
44. Constituency Development Fund Constituencies Development Fund
45. Kenya National Bureau of Statistics
46. National Coordinating Agency
47. Public Benefits Organizations
48. Kenya School of Government
49. Kenya Institute of Public Policy Research & Analysis (KIPPRA)
50. Drought Management Authority State Corporations
51. Institute of Human Resource Management
52. Tourism Research Institute the Tourism
53. Kenya National Trading Corporation (KNTC)
54. Kenyatta International Convention Centre
55. Kenya Safari Lodges and Hotels Ltd.
56. Kenya Tourist Finance Corporation (Formally KTDC)
57. Kenya Tourist Board Tourism
58. Export Promotion Council (EPC) Companies
59. Tourism Fund Board of Trustees (Formerly Catering and Tourism Development Levy Trustees)
60. Tourism Regulatory Authority Tourism
61. Kenya Utalii College (KUC)
62. Bomas of Kenya
63. Golf Hotel Kakamega Companies
64. Sunset Hotel Kisumu Companies

65. Kabarnet Hotel Limited Companies
66. Mt Elgon Lodge Companies Tourism
67. Kenya National Innovation Agency Science, Technology and Innovation
68. Kenya Universities and Colleges Central Placement Service
69. Technical and Vocational Education and Training
70. Jomo Kenyatta Foundation Companies
71. Kenya Literature Bureau (KLB) Kenya Literature Bureau
72. University of Nairobi Enterprises Ltd Companies Education, Science & Technology
73. School Equipment Production Unit Companies
74. University of Nairobi Press (UONP) Companies
75. Jomo Kenyatta University Enterprises Ltd.
76. Rivatex (East Africa) Ltd.
77. Higher Education Loans
78. Kenya Institute of Curriculum Development
79. Kenya National Commission for UNESCO
80. Kenya National Examination Council (KNEC)
81. Technical and Vocational Education
82. Commission for University Education Universities
83. National Commission for Science, Technology and Innovations
84. Chuka University Egerton
85. Cooperative University College
86. Dedan Kimathi University
87. Egerton University Egerton University
88. Embu University College University of Nairobi
89. Garissa University College Moi
90. Jaramogi Oginga Odinga University of Science and Technology
91. Jomo Kenyatta University of Agriculture and Technology
92. Karatina University Moi University
93. Kenya Multi-Media University
94. Kenyatta University Kenyatta University
95. Kibabii University College
96. Kirinyaga University College

97. Kisii University Egerton University
98. Laikipia University Egerton University
99. Maasai Mara University Moi University
100. Machakos University College Kenyatta University
101. Maseno University Maseno University
102. Masinde Muliro University of Science and Technology
103. Meru University of Science and Technology
104. Moi University Moi University
105. Murangʾa University
106. Pwani University
107. Rongo University
.108. South Eastern Kenya University
109. Taita Taveta University College
110. Technical University of Mombasa
111. The Technical University of Kenya
112. University of Eldoret
113. University of Kabianga
114. University of Nairobi
115. KCA University Provide University
116. Rural Electrification Authority Energy
117. Kenya Electricity Generating Company (KENGEN
118. Kenya Electricity Transmission Company (KETRACO)
119. Kenya Pipeline Company (KPC Companies
120. Kenya Power and Lighting Company (KPLC)
121. National Oil Corporation of Kenya
122. Geothermal Development Company (GDC)
123. Energy Regulatory Commission
124. Kenya Nuclear Electricity Board Kenya
125. Mombasa Pipeline Board Mombasa Pipeline
126. Water Services Trust Fund Water
127. Nyayo Tea Zones Development Corporation
128. National Water Conservation and Pipeline Corporation

129. Kenya Wildlife Service (KWS)
130. Kenya Water Towers Agency
131. Kenya Forest Service Forests
132. Water Resources Management Authority
133. Water Services Regulatory Board
134. National Environmental Management Authority (NEMA)
135. Kenya Water Institute
136. Kenya Forestry Research Institute Science and Technology
138. Coast Water Services Board
139. Lake Victoria North Water Service Board
140. Lake Victoria South Water Service Board
141. Northern Water Services Board
142. Rift Valley Water Services Board Water Resources
143. Tana Water Services Board Water
144. Tana Athi Water Services Board Water
145. Coast Development Authority Coast Development
146. Ewaso Ng'iro North Development Authority
147. Ewaso Ng'iro South Development Authority
148. Kerio Valley Development Authority Kerio Valley Development
149. Lake Basin Development Authority Lake Basin Development
150. Tana & Athi Rivers Development Authority
151. National Cancer Institute of Kenya
152. Kenya Medical Supplies Authority (former Kenya Medical Supplies
153. Kenyatta National Hospital
154. Moi Teaching and Referral Hospital State Corporations
155. National Aids Control Council State Corporations
156. National Hospital Insurance Fund
157. National Quality Control Laboratories Pharmacy and poisons
158. Kenya Medical Laboratory Technicians and Technologists Board
159. Kenya Medical Training College (KMTC)
160. Kenya Medical Research Institute (KEMRI)
161. Kenya Nutritionists and Dieticians Institute

162. Nursing Council of Kenya Nurses
163. East African Portland Cement Company Ltd.
164. Kenya Wine Agencies Ltd (KWAL)
165. New Kenya Co-operative Creameries Companies
166. Yatta Vineyards Ltd Companies
167. Development Bank of Kenya Ltd.
168. KWA Holdings Companies
169. Numerical Machining Complex
170. Industrial and Commercial Development Corporation
171. Kenya Industrial Estates (KIE)
172. Sacco Societies Regulatory Authority Sacco Societies
173. Kenya Investment Authority Investment Promotion
174. Kenya Industrial Property Institute Industrial
175. Anti-Counterfeit Agency
176. Kenya Bureau of Standard (KBS) Standards
177. Kenya National Accreditation Service State Corporations
178. Export Processing Zones Authority (EPZA)
179. Kenya Industrial Research & Development Institute
180. Small and Micro Enterprises Authority Micro and Small Enterprises
181. Media Council of Kenya
182. Kenya Yearbook Editorial Board State Corporations
183. Kenya Broadcasting Corporation Kenya Broadcasting Corporation
184. Postal Corporation of Kenya Postal Corporation
185. Brand Kenya Board State
186. Information and Communications
187. Konza Techno polis Authority Konza
188. Communications Commission of Kenya
189. Kenya Institute of Mass Communication
190. The National Council for Children's
191. National Campaign against Drug
192. Kenya Citizens and Foreign Nationals Management Service
193. Kenya Red Cross Society Kenya Red Cross society

194. St. John Ambulance of Kenya St. John Ambulance of Kenya
195. National Council for Persons with Disabilities
196. National Industrial Training Authority Industrial Training
197. National Social Security Fund Board
198. The National Social Security
199. National Construction Authority National Construction
200. Research Development United Company Ltd
201. National Housing Corporation Housing
202. National Bank of Kenya Companies
203. Privatization Commission Privatization
204. Consolidated Bank of Kenya Companies Treasury
205. Kenya National Assurance Ltd
206. Kenya Reinsurance Corporation Ltd Kenya
207. Agricultural Finance Corporation Agricultural Finance Corporation
208. Industrial Development Bank
209. Kenya Post Office Savings Bank Kenya Post Office Savings Bank
210. Capital Markets Authority Capital
211. Insurance Regulatory Authority Insurance
212. Retirement Benefits Authority Retirement Benefits
213. Kenya Revenue Authority (KRA)
214. Deposits Protection Fund Board (now
215. Financial Reporting Centre Proceeds of Crime and Anti-Money Laundering
216. Kenya Accountants & Secretaries National Examination Board (KASNEB)
217. Kenya Trade Network
218. Policy Holders Compensation Fund Insurance
219. Unclaimed Financial Assets Authority Unclaimed
220. Investor Compensation Fund Board Capital Markets
221. Competition Authority
222. Public Procurement Oversight Authority
223. Kenya Institute of Supplies Examination Board
224. Kenya Institute of Supplies Management
225. Institute of Certified Secretaries of Kenya Certified Public Secretaries

226. Institute of Certified Public Accountants of Kenya Accountants
227. Local Authorities Provident Fund Local Authorities Provident Fund
228. Kenya Copyright Board
229. National Council for Law Reporting
230. Kenya Law Reform Commission
231. Nairobi Centre for International Arbitration
232. Council for Legal Education Legal Education
233. Kenya School of Law
234. National Crime Research Center
235. Law Society of Kenya Law Society of Kenya
236. Kenya Academy of Sports
237. National Museums of Kenya National Museums and Heritage
238. National Youth Council National Youth Council
239. The Kenya Cultural Center
240. Sports Kenya Sports
241. Kenya Film Classification Board Films and Stage
242. Kenya National Library Service (KNLS)
243. Kenya Film Commission State Corporations
244. Kenya Rural Roads Authority Kenya
245. Kenya Urban Roads Authority Kenya
246. Kenya National Shipping Line Companies
247. Kenya Ports Authority (KPA) Kenya Ports Authority
248. Kenya Railways Corporation (KRC) Kenya Railways
249. Kenya Airports Authority (KAA Kenya Airports)
250. Kenya Ferry Services Ltd (KFS) Companies
251. Kenya National Highways Authority
252. Kenya Civil Aviation Authority
253. Kenya Maritime Authority State Corporations
254. National Transport & Safety Authority National Transport and Safety Authority
255. Physical Planners Registration Board Physical
256. Engineers Registration
257. Architects and Quantity Surveyors Registration Board

258. Kenya Roads Board (KRB) Kenya Roads Board Act

259. Simlaw Seeds Kenya Ltd

260. Simlaw Seeds Uganda Ltd.

261. Simlaw Seeds Tanzania

262. Lands Limited

Source: The presidential Taskforce on Parastatals Reforms (Republic of Kenya, 2013).

Appendix F

Building Projects on implementation under Ministry of Land, Housing and Urban Development in Nairobi County (2011-2014)

No.	**Project Name**	**Client**	**Contractor**	**Contract Sum Ksh**	**Commencement Date**	**Project Manager/Cons.**
1	Construction of Ministry of Energy Head Office	Ministry of Energy & Petroleum	Landmark Holding Ltd	1,625,917,898	3/5/2011	Qs Bunei:
2	Construction of additional office at Public Service Commission of Kenya	Public Service Commission of Kenya	Mweha Enterprise Ltd	271,440,034	17/1/13	Chief Architect
3	Completion of Mitihani House Phase VI & V	KNEC	Ongata Works Ltd	865,582,801 & 1,499,989,252	20/10/2008 & 30/5/2013	QS : MR/ Arc. Mutiso Menezzes
4	Refurbishment of Partitioning at Harambee Coop. Plaza	Parliamentary service Commission	Maridadi Building Contractors	420,000,000	15/5/2013	QS Mathu & Gichuiri; Arc. Tactura Ltd
5	Renovation & furnishings of office of the DP office	Office of the President	Sarawet Agencies Ltd	171.912,436	17/3/2014	Chief Architect

6	Erection & Completion of General Wards for Mama Lucy Hospital Phase 1	Ministry of Health	Citrolam contractor Ltd	141,960,622.42	1/7/2014	Chief Architect
7	Renovation of Senate Chambers and Offices	Parliamentary service Commission	Milicons Ltd	2,209,173,479.35	24/9/2012	QS: Amason; Arch scope Desgn Systems
8	Construction & completion of Dormitory, Kitchen & dining hall		Jakiwa Engineering	48,000,000	5/11/2012	Chief Architect
9	Construction of Training Facilities and Perimeter fence at NSIS	National Intelligence Service	Vaghjiyani Enterprises Ltd	400,000,000	18/10/2011	Chief Architect
10	Redesigning and Opening up of office space (NHIF)		Buildmore construction Ltd	106,745,647	13/2/2012	Chief Architect
11	Climate change Resource centre at Kenya Meteorological Department	Ministry of Environment & Natural Resources	Wamunyoro Investiment	108,651,740	13/4/2012	Chief Architect

12	Erection & completion of Bio-safety Level 3 Laboratory at Kabete Veterinary farm	Ministry of Livestock	Wamunyoro Investiment	98,840,597	4/2/2013	Chief Architect
13	Development of central Radioactive Waste processing facility	Ministry of Health	Vaghjiyami Enterprises	518,490,508	17/12/2009	Arch. Habitech
14	Erection & completion of Kenya National spatial data infrastructure (KNSDI) complex at survey of Kenya	Ministry of Land Housing & urban Development	Vaghjiyami Enterprises	813,398,857	10/5/2011	Chief Architect
15	Completion of west park Housing Phase 11	National police Service	Ongata Works Ltd	1,371,664,442	1/10/2009	Chief Architect
16	Completion of Kenya Institute of Business Training HQS	Ministry of EAC Affairs Commerce & Tourism	NK Brothers	629,909,101	12/3/2009	Qs: Arch bill; Arch: Studio
17	Construction of classrooms and workshops at NYS engineering Institute	Ministry of youth	Gragab Agencies Ltd	88,794,355	9/6/2011	Chief Architect
18	construction of Double span Kitchen Dinning and Barrack at NYS Eng. Institute	Ministry of Youth	Build more construction co. Ltd	192,000,000	6/5/2011	Chief Architect

19	Construction of classroom block at NYS Institute of Business studies		Thwama Building services	62,001,545	16/9/2013	Chief Architect
20	National Council for science & Technology complex		Milicons Ltd	990,990,990	21/3/2012	Chief Architect
21	Completion of Mathare Nyayo Hospital		China Jiangxi International Ltd	1,212,414,731	27/8/2012	Qs :FM

Source: Derived from Directorate of Housing (Republic of Kenya, 2014)

Appendix G
Public building projects performance

Client	Project	Contract sum (Kshs Million)	Irregularities, Variations, delay& contravening the Public procurement Legal framework & regulations
Ministry of Education	Nakuru Girls High School classrooms	11,381,108.60	1. *Contract varied* by Kshs.3, 522,890.40 or about 31% to Kshs.14, 903,999.00, contrary to Section 31(c) of the PP&D Regulations 2006. 2.*Work incomplete*
	Mary Hill Girls High School Laboratory Block Projection	14,979,002.00 .	1. Contract documents indicate that the project was to be completed in January 2012- *stalled project.*
	Kiirua TTI Project ESP Funds. electrical workshop & Library	30,923,770.00	1. Contract awarded second lowest bidder, second lowest bidder at a cost of Kshs.30, 923,770.00, lowest bidder had quoted Kshs.28, 650,306.40. Irregular award
	Mary Hill Girls High School Laboratory Block Projection	14,979,002.00 .	1.Project delay
	Kiambu Institute of Science and Technology. Library/ ICT Project	60,145,454.00	1. Contract period of thirty (30) weeks. 2. Awarded Contractor did not submit vital document -preliminary Evaluation report. 3. *Abandoned Works*

Ministry of State for Provincial administration and Internal Security	National Youth Service - Ruaraka Classrooms and Workshop	88,794,355.00 .	1. *Delay in Execution* of the Contract duration of fifty two (52) weeks- .Project was 48% *complete delay* 2.Variation Between Work Certified a BQ's.Kshs.3, 666,650.00 to Kshs.8, 159,175.00 -122.52% of work certified. 4.Variation was not executed within the contract period, contrary to Section 31(d) of the PP&D Regulations, 2006

Source: Compiled from Report of Auditor General, Republic of Kenya, (2011-2012)

Client	Project	Contract sum (Kshs. Millions)	Irregularities, Variations, delay& contravening of the PPsystem
Ministry of State for Planning, National Development and vision 2030	Sochoi Sec. school Administration block	5.5	**1**.*Stalled project,65% complete*
	Father Martin Academy	7	**1**. *Lack of contract documents.*
	DC office block	13.2	**1.***No contract agreements signed* between respective Project Management committee contrary to PP&D Act
	Lirhanda Girls High School Dormitory	4,750,000.00.	**1**.*Direct procurement* used no reason given contrary to section 29 of PP&D Act
Office of vice president &Home Affairs	Bungoma and Busia GK Prison Staff houses	154,013,478.01	**1.** Contract Period Extension 52wks to 16wks. **2.**. Contract Varied by 84% contrary to PP&D Act provides the variation not exceeding 15% to be executed within contract period. *Contravention of PP&D Act*
Ministry of Public Works	Kakamega South District Headquarter	30,000,000.00	**1.** Questions on award of contract whether in accordance with requirements of regulation 16 of the PP&D Regulations, 2006.*Due process not followed*
	Sabatia District Headquarters	28,967,897.00	**1**. QS estimate shs.38,639,001.44.Contract sum less than the QS Kshs.38,639,001.44 by Kshs.9,671,104.44 or 25 percent-*abnormally low tender*

	Kyuso District Headquarter	31,120,816.40	**1.** Tender Evaluation undertaken by one person only, contrary to Clause 16 of PP&D Regulations 2006 as evident from the Tender Report.
2009-2010,			
Ministry of State for Provincial administration and Internal Security	Rift Valley and Eastern Province. Police Posts	88,330,223.00	1. Contract appears to have been awarded through *direct procurement* instead of *open tender***,** as provided for under Section 54 of the PP &D Act 2005. No reason was given
Ministry of Higher Education, Science and Technology	Bunyala Victoria) Institute of Technology	21,850,000.00	**1**. PMC awarded *second lowest bidder,* a contract sum of Kshs.21, 850,000.00. **2**. *Irregular alteration of contract sum to* Kshs.23, 957,915.00. **3.** Lowest bidder at Kshs.19, 527,809.00 was not awarded the contract

Sources: Compiled from Report of Auditor General, Republic of Kenya, (2009-2010, and 2010-2011).

Appendix H

LETTER OF INTRODUCTION

JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY
P.O. BOX 62000, NAIROBI, KENYA. TEL: 067-52437
FAX: 067-52437 Email: conmgmt@sabs.jkuat.ac.ke

DEPARTMENT OF CONSTRUCTION MANAGEMENT
School of Architecture and Building Sciences

REF: JKU/2/26/80

9th September 2013

To Whom It May Concern

Dear Sir/Madam

RE: HARRISON WACHIRA KIIRU - AB 343-1193/2012

The above is a bonafide student of Jomo Kenyaata University of Agriculture and Technology pursuing a course leading to the award of a Masters in Construction Project Management.

He is currently doing his Thesis titled ''***Evaluation of public procurement system and its influence on performance of public building projects during implementation***:''- A case of Public Building Projects in Nairobi - Kenya

Kindly assist him acquire a research permit to be ethically and effectively undertake the task.

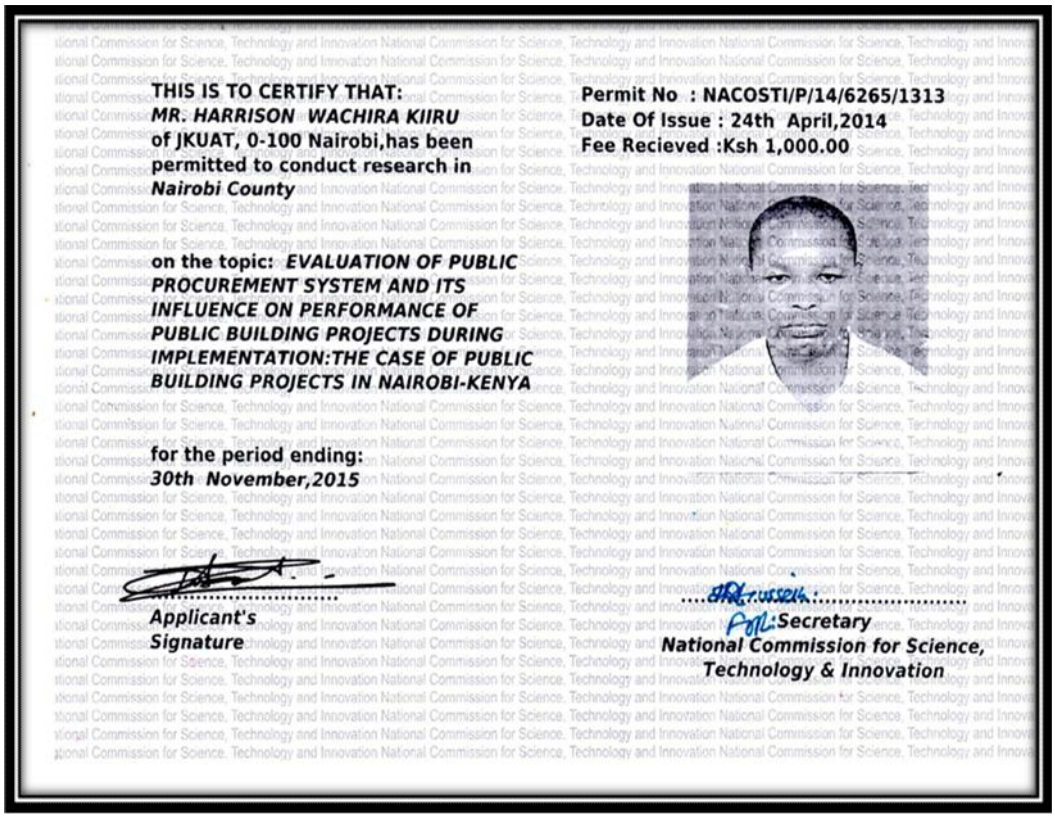
Yours faithfully

DEPARTMENT OF CONSTRUCTION MANAGEMENT
CHAIRMAN
P.O. BOX 62000

CHAIRMAN CONSTRUCTION MANAGEMENT

JKUAT is ISO 9001:2008 Certified
Setting Trends in Higher Education, Research and Innovation

Appendix G: RESEARCH CLEARANCE PERMIT AND AUTHORISATION LETTER



THIS IS TO CERTIFY THAT:
MR. HARRISON WACHIRA KIIRU
of JKUAT, 0-100 Nairobi,has been
permitted to conduct research in
Nairobi County

on the topic: *EVALUATION OF PUBLIC PROCUREMENT SYSTEM AND ITS INFLUENCE ON PERFORMANCE OF PUBLIC BUILDING PROJECTS DURING IMPLEMENTATION:THE CASE OF PUBLIC BUILDING PROJECTS IN NAIROBI-KENYA*

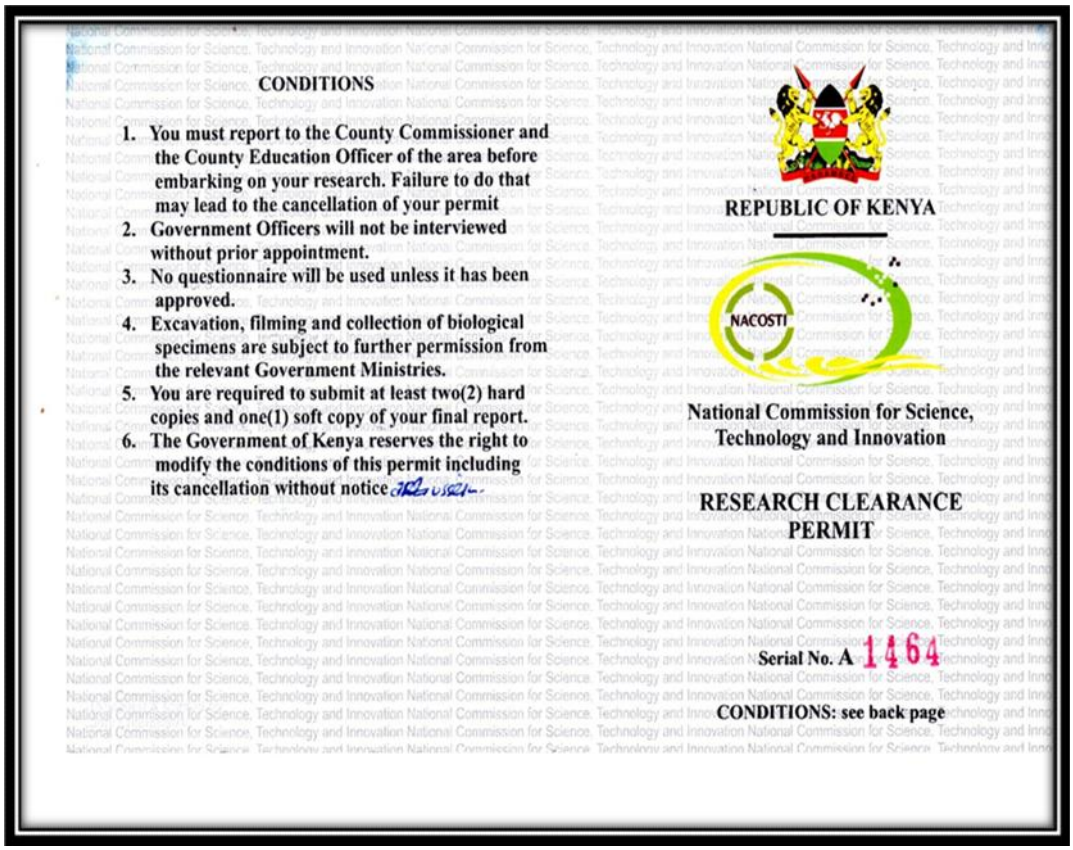
for the period ending:
30th November,2015

Permit No : NACOSTI/P/14/6265/1313
Date Of Issue : 24th April,2014
Fee Recieved :Ksh 1,000.00

.....
Applicant's Signature

.....
Secretary
National Commission for Science, Technology & Innovation

Appendix G: RESEARCH CLEARANCE PERMIT AND AUTHORISATION LETTER



CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 1464

CONDITIONS: see back page