

**ROLE OF PROCUREMENT ON COMPLETION OF PUBLIC PROJECTS IN ENERGY
SECTOR IN KENYA: A CASE OF KENYA ELECTRICITY GENERATING
COMPANY, TANA BRANCH**

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Award of the Degree of Master of Arts in Project Planning and Management of the
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DECLARATION

This research project is my original work and has not been presented in any institution of learning for an award of any kind.

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This research project has been submitted for examination with my approval as University supervisor.

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Date.....

DEDICATION

This research project is dedicated to my loving family; my mother Joyce Nekesa and my brother Kensley Wangila for their love, support, encouragement and prayers during the entire writing of the project. May God bless them ALL.

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ABBREVIATIONS AND ACRONYMS

CDF	Constituency Development Fund
FLSTAP	Financial and Legal Sector Technical Assistance Project
GoK	Government of Kenya
KENAO	Kenya National Audit Office
KenGen	Kenya Electricity Generating Company
MDGs	Millennium Development Goals
PPAD	Public Procurement and Assets Disposal Act 2015
PPDA	Public Procurement and Disposal Act 2005
RBV	Resource Based View

ABSTRACT

Kenya as a country has witnessed a substantial increase in the number of stalled projects due to inappropriate project organization structures and ineffective leadership. Time and serious attention are devoted towards establishment of a procurement function that will be suitable for a particular project. This study aimed to find out the role of procurement in successful completion of public projects. The study sought to establish how various aspects of the procurement function contributed to the completion of projects. Objectives of the study included; to find out the role of contract management on project completion in the energy sector in Kenya; to determine the role of bidding on project completion in the energy sector in Kenya; to find out the role of procurement planning on project completion in the energy sector in Kenya and to determine the role of scheduling on project completion in the energy sector in Kenya. The study adopted a descriptive research design with the target population of interest consisted of 58 staff members at KenGen Tana branch in Murang'a County. This research adopted a stratified sampling technique in selecting the sample. The main instrument for data collection was a questionnaire that allowed for uniformity of responses to questions. The data collected was analyzed using SPSS. Descriptive statistics such as mean, standard deviation, frequency distribution and percentages were used to summarize and present data. Pearson's correlations coefficient was done to examine the relationship among the independent and the dependent study variables that were set out in the objectives of the study. The study findings revealed that a mean of 4.35 of majority of the respondents showed that contract management played a key role in procurement on project completion in the energy sector and also a mean of 3.62 showed that bidding played a key role in procurement on project completion in the energy sector. In addition, a mean of 4.41 showed that procurement planning played a key role in procurement on project completion in the energy sector while a mean of 4.26 revealed that project scheduling played a key role in procurement on project completion in the energy sector in Kenya. Correlation analysis showed that there was a positive correlation between contract management, procurement planning and project scheduling and completion of public projects in energy sector while a negative weak correlation was observed between bidding and completion of public projects in energy sector in Kenya. The study recommended that supplier selection and evaluation is done transparently, fairly and accurately as it represents one of the significant roles of purchasing and supply management functions hence leads to achievement of quality objectives, timely, periodic and proper procurement planning by the organization should be done in order for to have availability of resources for continuity and effective completion of projects within scope, time and cost, project scheduling is done accurately with monitored timescales and sequences of project activities to timely achieve the project goals and objectives and manage and monitor all the project contracts in the organization ensuring terms and conditions are adhered to for the successful completion of public projects. Finally, further research on similar studies should be carried out in other Counties in Kenya in evaluating other vital factors that are likely to determine the role of procurement in project completion in the energy sector.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the course of recent years, developing nations have stirred on the significance of powerful administration of procurement frameworks in both central and local government levels and additionally in different businesses. Procurement, a capacity that was customarily seen as administrative and responsive errand has subsequently situated itself among core activities of the organization and any organization would suffer without a good procurement function. A proficient procurement framework is imperative to the progression of African nations and is a solid articulation of the national responsibility to making the ideal utilization of open as well as hierarchical assets (Kabaj, 2003).

As indicated by Chandra (2008), a project is an investment action that includes a present or future cost of assets in the desire of a surge of advantages stretching out far into what's to come. A public project is hence one where such a speculation includes the utilization of open assets by a Government body ordered to do certain particular missions to accomplish particular targets for the advantage of greater public majority. Project execution again alludes to the way toward completing the speculation arrangement by setting up certain particular activities and structures keeping in mind the end goal to operationalize the speculation dream and in this manner get the focused on advantages from the project.

Project management is a management discipline that emphasizes decision-making and operationalizing of strategies to bring about projects' success. Projects are complex and involve a large number of parties in execution. Their implementation practices thus are dependent on a myriad of factors (Kimanzi, 2012). One among the many of these could be demand oriented. The demand for major projects has never been greater; and are largely driven by an increasing regional and global population, aging infrastructure, increasing urbanization and continued development of emerging markets (Jagboro, 2012). With demand come the challenges for users, contractors, and other stakeholders to successfully deliver the much-needed infrastructure

projects (Taleb, 2009).

According to Brown and Hyer (2010), a project is an interim attempt planned to take care of an issue, sees an open door, or reacts to an order. A wide range of associations take part in venture exercises: Families, Government organizations, small organizations as well as multinational corporations. They further contended that the consideration regarding the administration of ventures without a doubt is developing since organizations, whether private or public, have up-scaled their undertaking portfolios and subsequently spend extensive aggregates of cash on project endeavors. Similarly, a few different nations of the world, including France and Germany among others, have been driven by the inspiration to address certain insufficiencies, irregular characteristics or gaps existing in the economy, which the private area alone could not generally successfully manage. The best approach to achieve this is by initiating pertinent public projects. Past studies on open activities have shown that there exist horde difficulties that obstruct their successful implementation.

As indicated by Chandra (2010), poor planning has been a noteworthy requirement in effective execution of public projects in India culminating in projects getting to be uneconomical as a result of time and cost over-runs. The outcome has been hindered financial advancement. This perspective is upheld by Oladipo (2012) who assessed neighborhood government ventures in Nigeria where he recognized key project hindrance as poor undertaking arranging, insufficient quality labor, deficient fund and poor project monitoring.

In numerous nations, procurement systems in an association, in light with the energy industry has however pulled in feedback for inefficiencies in results, for example, time and cost overruns, low efficiency, low quality and insufficient customer satisfaction. Procurement officers, contractual workers and different professionals in the association have extraordinarily affected the adjustment in association mentalities, conduct and acquisition frameworks with a specific end goal to expand chances for development undertakings to be fruitful and subsequently has prompted enhanced products. (Erickson 2002).

Maizon (2003) notes that choice of acquisition framework for a given project is a troublesome errand for the suppliers, customers or organizations because of the different components overseeing energy projects. He expressed further that distinctive enterprises or buyers have

diverse necessities and prerequisites whereby project in procurement systems fluctuate so significantly that no single strategy for procurement can be reasonable for each project.

Through this, there has been an increased co-operation among different parties in the procurement systems especially in the energy sector. This has been caused by the increased complexity, uncertainty and time pressure on construction projects (Anvour & Kamaraswammy, 2007). Traditionally, relationships have been very competitive and adversarial in the energy industry. This has been majorly contributed by the customary procedures that have led to many problems in all stages of procurement (Erickson & Laan, 2007). In order to take advantage of collaboration, procurement systems are one key improvement area and can contribute substantially to projects success.

A change of procurement behavior will however be influenced by the habitual clients. Although there is need to work on procurement behavior to enhance fulfillment of different procurement project objectives, clients will often choose procurement procedures that they have a habit of using, notwithstanding the difference between the procurement systems projections. To enhance change, it would be of utmost importance to understand how different procurement procedures have their role and affect different aspects of organizational performance most especially project performance.

On the local front, similar situations affecting successful project implementation within the public sector in Kenya. The Kenya Electricity Generating Company (KenGen) being a public institution is no exception to these challenges. According to Kenya National Audit Office (KENAO, 2010), KenGen failed to successfully implement the construction of Hydro Plaza project in Seven Folks within the stipulated contractual period and initial budget. The contractor blamed this failure on delayed payments and unforeseen but necessary works associated with the project. This clearly pointed to poor project planning, procurement procedures in inspection of works and a challenged finance system.

Different studies have confirmed the use of various types of procurement systems for organization performance especially project delivery in Kenya. For instance, the use of traditional design, project management, direct labor and other types such as partnering, alliances and joint ventures. The use of these methods can adversely affect the performance of many

activities in the organization projects. In support of this, public procurement systems in Kenya evolved from crude system with no regulations to an orderly legally regulated system.

In the past decades, procurement systems in Kenya have undergone significant development, from being a system with no regulations in the 1960s to system regulated by treasury circulars in 1970s, 1980s and 1990s, the introduction of PPDA act in 2005 and PPAD 2015 and procurement regulations of 2006. This has introduced new stands for public procurement in Kenya. With the enactment of PPDA 2005 and PPAD 2015 and procurement regulations, Kenya today has in place a sound and comprehensive legal framework for public procurement with a clear hierarchical distinction.

There is a number of project procurement procedures used in this industry during the buying stage. This study uses procurement systems, methods and procedures that include, project design, choice, bid invitation and evaluation, compensation and performance evaluation and supplier relationships. Clearly, procurement systems have significant role to play in helping the organization to achieve their objective and prepare for the uncertainty ahead. Thai (2001) describes two types of goals in the procurement systems, non-procurement goals and procurement goals. Procurement goals are primarily associated with quality, reduction of financial and technical risks and protection over integrity in the system. Non-procurement goals on the other hand usually involve economic, social and political goals within the system. Achieving efficiency of procurement systems is an ambitious task, as procurement faces numerous challenges especially due to the market structure, legal framework and political environment that procuring firms face (Thai 2004).

This study illustrates that energy construction project is a complex process that involves stakeholders, long project durations and complex contractual relationships. As construction procurement systems have evolved, many different types and categories of procurement routes have been developed. Procurement systems have been greatly seen through different stages in their evolution. In 1990s, projects were completed under lump sum contracts, using traditional systems. This trend continued to half of the 20th century with only limited exceptions developed in the private sector to improve costs, schedules and adversarial relationships through contractor centered approaches (Dorsey 2004; Oyegoke 2001).

1.2 History of KENGEN

Kenya Electricity Generating Company or KenGen as an organization, is biggest energy creating enterprise in Kenya delivering around 72% of the power consumed in the nation. KenGen depends on different sources to produce power going from hydro, geothermal, warm and wind. Hydro is the main source, with an introduced limit of 0.821 GW, which is 52.3 percent of the organization's introduced limit. Geothermal comes next with 463.1MW and another 55.6MW from the imaginative wellheads innovation raising geothermal ability to around 32% of the aggregate introduced limit. In any case, with the dispatching of the 280MW geothermal undertaking in Olkaria, geothermal now represents more than half of the power consumed by Kenyans.

Kenya Electricity Generating Company Limited (KenGen) was consolidated on 1st February 1954 under the Company's Act Cap 486 of the Laws of Kenya, as a private Limited Company in the name Kenya Power Company Limited. It was changed over into a public Limited liability pursuant to a special regulation passed on 27th July 1955. Taking after changes actualized by the Kenyan Government (GoK) in the energy sector, the organization's name in this way changed to Kenya Electricity Generating Company Limited on 27th September 1997. The company is governed under the Companies Act Cap 486, State Corporations Act Cap 446, Energy Act 2006, Public Procurement and Disposal Act 2005 and Capital Markets Authority Act 485A. The purpose and object for which KenGen was established was to oversee the generation of competitively priced electric energy by developing, managing and operating power generation plants as the Company's core business. In March 2006, the Government of Kenya offered 30% of its shareholding in KenGen to the public, thereby reducing its overall shareholding to 70%.

1.3 Statement of the Problem

Projects are part and parcel of the normal operations of public sector organizations. The projects funded by public funds aim at achieving certain organizational objectives set by public sector organizations to facilitate fulfillment of their mission but in some instances, these objectives are not achieved (Chandra, 2010). According to Frese (2010), a successful project must be on time, on budget and deliver quality (features and functions). Anything less will be either a failed project or a challenged project. Thus the envisaged initial project cost, time and project quality

(performance) are the three fundamental cornerstones for measuring the effectiveness of any public project. Lysons and Farrington (2010) espouse the view that implementation is about converting a strategic plan into action and doing what needs to be done to achieve the targeted strategic goals and objectives.

Kenya as a country has witnessed a substantial increase in the number of stalled projects due to inappropriate project organization structures and ineffective leadership. There is evidence that the performance of the construction in Kenya is poor as time and cost performance of projects are to the extent that over 70% of the projects initiated are likely to escalate with time with a magnitude of over 50% and over 50% of the projects likely to escalate in cost with a magnitude of over 20% (Nyangilo, 2012). Kibuchi and Muchungu (2012) discovered that despite the high quality of training of consultants in the building industry in Kenya and regulation of the industry in major urban areas, construction projects do not always meet their goals. This is manifested by myriad projects that have cost overrun, delayed completion period and poor quality resulting to collapsed buildings in various parts of the country, high maintenance costs, dissatisfied clients and even buildings which are not functional.

Previous studies in Kenya have provided evidence of the existence of a serious problem of ineffective project implementation within the public domain. KenGen failed to realize one of its key strategic objectives that were to be realized through the Construction of Hydro Plaza Building in Seven folks within a certain timeline due to delayed payments, procurement process in inspection of works, and unforeseen but necessary works associated with the project (KENAO, 2010). Malala (2011), in his study on the effect of procurement on performance of Constituency Development Fund Projects (CDF) in Kenya (Case study of Kikuyu Constituency) found out that 88% of the projects were rated as being behind schedule, pointing to ineffective implementation process. Kirungu (2011) in a study on factors influencing implementation of Donor Funded Projects observed that the Financial and Legal Sector Technical Assistance Project (FLSTAP) under the Ministry of Finance (The National Treasury) has faced challenges to do with implementation and therefore not able to achieve its goals within the stipulated timeframes. On his part, Omanga (2010) found out that 21% of CDF Projects in Lari Constituency had either stalled or abandoned altogether. Looking at the studies above it is

evident that there has not been a study linking procurement and project completion in energy sector in Kenya leaving a gap that necessitated this study since the practices were established to reduce these problems.

Procurement procedures provide the framework for implementation and development of project. Time and serious attention are devoted towards establishment of a procurement function that will be suitable for a particular project. A procurement method that is used for particular project is expected to achieve the objectives of the project in terms of cost, time and quality but this has not been the case. Time and cost overruns have been a major problem confronting the Kenyan energy industry and no attempts that have been made so far have been able to yield the expected results.

The statement of the problem proves clearly that the people affected by the failure of the projects implementation is the public who are the tax payers, public institutions who never meet their objectives and the Government in general which does not fulfill their Millennium Development Goals (MDGs). Problems that have been established from various research work that have been carried out in the past as a result of the use of available procurement methods in execution of projects

1.4 Purpose of the Study

The purpose of this study was to determine the role of procurement in project completion in the energy sector in Kenya.

1.5 Objectives of the Study

The objectives of this study were:

- i. To establish the role of contract management in procurement on project completion in the energy sector in Kenya.
- ii. To determine the role of bidding in procurement on project completion in the energy sector in Kenya.
- iii. To ascertain the role of procurement planning on project completion in the energy sector in Kenya.

- iv. To establish the role of procurement scheduling on project completion in the energy sector in Kenya.

1.6 Research Questions

The study was guided by the following research questions:

- i. What is the role of contract management in procurement on project completion in the energy sector in Kenya?
- ii. What is the role of bidding in procurement on project completion in the energy sector in Kenya?
- iii. What is the role of procurement planning on project completion in the energy sector in Kenya?
- iv. What is the role of scheduling in procurement on project completion in the energy sector in Kenya?

1.7 Significance of Study

The research will not only be beneficial to KenGen itself but also other players in the energy industry as well as those who want to join the industry. Research institutions, stakeholders, government and academicians will also borrow a leaf from the research findings.

This research might help KenGen become more aware of the importance of integrating procurement function in their projects in terms of its benefits, and the contribution to the overall wellbeing and superb flow of organizational projects. The energy sector is faced with the challenge of unsuccessful project completion, which makes procurement function inevitable for them.

Other researchers will use the study as a reference when conducting research in related project procurement area or other related business study. Again, there is very little literature, if any, in the field of project procurement in the developing countries. The forerunners in this area have written in depth about the project management. This research, therefore, will aim at shedding more light in this field of project procurement and will form a base for further research.

The study will also provide notes that can help scholars to use as background information for further research or provide gaps, which can serve as a basis for a new research in similar or different fields.

The study will help project managers and procurement managers when making their contract agreement as each party can understand fully what is entailed in project procurement, the challenges and the risks involved.

1.8 Delimitations of the Study

The study was carried out at KenGen Tana unit located in Murang'a County, Kenya and targeted the Procurement Department, Finance Department, Operations Management Department, administration Department and the Stores Department. The study intentionally focused on these departments because they influenced greatly on projects especially on the formulation and implementation of projects thus acquired the required information.

1.9 Limitations of the Study

The study depended mainly on administration of questionnaires to specific department levels of the organization; it would have been of value to obtain the views of the organization's customers and other stakeholders in the firm though this was difficult within the limited timeframe of the study. The study, therefore, corroborated the questionnaires with data obtained from secondary sources of information about project management activities of the organization.

The scope and depth of the study was also limited by time factor and financial resource constraints. Proper time management and strict following of the work schedule in the form of Gantt chart overcame the time factor. The researcher solicited for funds from family members, friends and well-wishers to overcome the financial constraints.

1.10 Assumptions of the Study

The study was based on the following assumptions: that the respondents were available to give required information without fear. The findings of the study were generalized for all the road construction companies in Kenya, there was transparency and accountability to the information given by the respondents and the information was treated with confidentiality by other agencies that had access to this information.

1.11 Definition of Terms used in the Study

Project: A project is an investment activity that involves a current or future outlay of funds in the expectation of a stream of benefits extending far into the future (Chandra, 2008).

Public Project: Is one where such an investment involves the use of public funds by a Government body mandated to carry out certain specific missions to achieve specific objectives for the benefit of the greater public majority (Chandra, 2008).

Project Management: Is a management discipline that emphasizes decision-making and operationalizing of strategies to bring about projects' success (Kimanzi, 2012).

Bidding: Is an offer (often competitive) to set a price by an individual or business for a product or service or a demand that something be done.

Procurement Planning: Is the process of deciding what to buy, when and from what source.

Procurement Scheduling: A schedule that identifies the scheduling requirements of procurement (purchasing) of components on the project.

Contract Management: Is a continuous process, starting with analysis and evaluation of the customer's inquiry, and carrying on until contract closure, upon fulfillment of all contractual obligations.

1.12 Organization of the Study

Chapter one covered purpose of the study, objectives of the study, significance of the study, limitations of the study, assumption of the study and the definition of terms used in the study. Chapter two reviewed the literature on the study topic in relation to the study objectives and developed a conceptual framework to summarize the literature reviewed. Chapter three covered the research methodology including the research design, target population, sample size and sampling procedure, data collection instruments, pilot testing, validity and reliability of research instruments, data collection procedure, data analysis techniques, operationalization and variables and ethical considerations. Chapter four presented the analyzed data and their interpretations. Finally, chapter five presented the summary of the study, discussion of results, conclusions drawn, and the recommendations for future studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presented previous studies that had been done, and theories advanced towards project procurement. Therefore, it had theoretical review focusing on theories that explained project procurement activities. Secondly, it had the empirical review of the studies that had been done on project management. A conceptual framework was included to summarize the literature reviewed.

2.2 Completion of Public Projects in Energy Sector

The viability of project administration is basic in guaranteeing the accomplishment of any significant project. Territories of obligation of project manager include arranging, control and usage. A project ought to be started with a plausibility study, where a reasonable meaning of the objectives and extreme advantages should be built up. Senior managers' backing for the project is vital in order to guarantee power and course all through the project's advancement and, additionally to guarantee that the objectives of the association are successfully accomplished inside this procedure. The specific type of bolster given can impact the level of resistance the task experiences. Information, aptitudes, objectives and identities are all variables that should be considered inside project administration. The project manager and his/her team ought to have the essential and imperative interpersonal and specialized abilities to encourage control over the different exercises inside the project (Lee, 2005).

The phases of execution must be explained at the project-planning phase. Disaggregating the phases at its initial point helps with the fruitful advancement of the venture by giving various turning points that should be refined for finish. Notwithstanding arranging, the control of the advancing project is likewise essential to achievement. Control requires satisfactory checking and criticism instruments by which senior and project managers can think about advancement against starting projections at every phase of the task. Checking and criticism likewise empowers the project administrator to envision issues (for example the thump on impacts generally begin or

complete times) and subsequently take pre-emptive remedial measures for the advantage of the overall project (Ballestin & Leus, 2009).

Projects typically encompass the presentation of another arrangement or something to that affect and, in all cases, new techniques and methods for doing things. These effects upon the work of others: the "clients". Client conference is a vital component in the accomplishment of tasks and, undoubtedly, the level of client contribution can impact the degree of backing for the venture or its usage arrangement. A key nature of the project administrator is that of being a decent communicator inside the project team itself, as well as with whatever is left of the association and outside bodies also (the clients might be inner or outer).

Definition of a project expressed that it is an action, which had a characterized starting and consummation point. Most projects will be close-finished regarding there being a prerequisite for fulfillment by a specific point in time. This point might be the aftereffect of an outer variable, for example, new enactment, or might be gotten from hierarchical prerequisites. It might likewise be mostly dictated by different imperatives. There is prone to be some relationship between the time taken for a project and its expense. A trade-off between the two obliging components may then be essential. There is liable to be a financial plan for the venture and this will obviously be a noteworthy imperative. Fetched imperatives might be set in various routes, for instance as a general money limit or as a point-by-point spending plan separated over various use headings. Work assets specifically might be a constraining component on the fulfillment of the undertaking. In the short run, it is likely that work will be settled in supply. Whilst the general asset accessible may in principle be adequate to finish the task, there might be challenges emerging off the beaten path in which the venture has been booked. That is, there might be various exercises planned to happen in the meantime and this may not be conceivable given the measure of assets accessible. (Huang & Chen, 2006)

Whether the project delivers the goods to the right quality or not, there are techniques, which can be used to overcome the problems referred to above which include budgeting and the corresponding control of the project budget through budgetary control procedures and Project planning and control techniques such as Gantt charts and network analysis.

An important point to note at this stage is how the various constraints on project completion are likely to be interlinked with each other. For example, problems with time constraints or resource constraints may be overcome by spending more through working overtime, employing more people or purchasing better machines. Budget problems may have a knock-on effect on the achievement of deadlines. It is important to remember that while project management techniques are important, they tend to understate the importance of the key resource: people. In a fast-changing environment where tasks are often difficult, controversial with uncertain outcomes, "people management" skills are called for (Maheswari, & Varghese, 2005).

2.3 Role of Contract Management in Procurement and Completion of Public Projects in Energy Sector

As per Public Procurement and Disposal Regulations (2006), the acquisition unit is mandated with obligation to screen contract administration by client offices to guarantee execution of project contracts as per the terms and conditions of the agreements. The unit is likewise required to report any noteworthy takeoffs from the terms and conditions of the agreement to the head of procuring entity and to organize inward checking and assessment of the store network capacity in admiration of the undertakings being embraced. Then again?, the obligation of the client division opposite task contract administration incorporate, among others; reporting any takeoffs from the terms and conditions of the agreement to the acquisition unit; sending points of interest of any obliged varieties to contracts to the obtainment unit for thought and activity; lastly keep up and chronicle records of agreement administration and undertaking congruity appraisals of supplied products, works and administrations with the details of the venture contract archives. Every one of these activities are essential parts of the acquisition project monitoring and control process implanted in the procurement legal framework to help compelling undertaking usage.

As indicated by Meredith and Mantel (2012), the key things to be arranged, checked and controlled are time (plan), cost (spending plan) and degree (execution). It is valuable to see the control procedure as a shut circle framework, with changed plans and timetables (if justified) after remedial activities. The arranging checking controlling cycle is persistently in procedure until the venture is finished. This procedure ought to be developed as an indispensable part of the hierarchical structure of the venture, not something outside to and forced on it, or more awful, in

struggle with it. It is vital to first characterize the key components to be observed and controlled: scope, cost and time and the limits inside which they ought to be controlled.

Any tracking framework from a basic checklist to complex dashboard style approaches, for distinguishing differences from the original plan. They propel the contention that as a feature of the arranging procedure, an undertaking group ought to concur on the proper methodology for observing key execution indicators (KPIs) amid the life of the venture.

Then again, the idea of undertaking control as the arrangement of procedures, choices, and activities required in reacting to project differences. Project control along these lines predicts an undertaking change administration process for choosing when changes are fitting and when to continue through to the end.

Chandra (2010) distinguished one huge element, among others, that undermines compelling task observing and control which tends to at last effect on the level of execution achievement. The key variable as per Chandra is task qualities which envelop the venture's vast size, complex endeavors including numerous associations and individuals rendering it hard to keep truck of physical execution and consumption on hundreds or even a great many exercises identifying with the project. This additionally represents the test of coordination and correspondence troubles where a few associations and individuals are included in the same project. This perspective is bolstered by Frese (2010) who hold that compelling task execution requires persistent checking and estimation of time, points of reference, individuals and hardware plans. Legitimately done timetable control will give the primary insight that underlying arranging may not go as indicated by calendar. Singling out these clues, one can have an early chance to actualize a fallback position and/or re-plan to get back on track and with regard, however, fostering the highest possible standards of professional competence amongst those whom are responsible; optimizing the use of resources for which they are responsible to provide the maximum benefit to their employing organization; complying both with the letter and spirit of the law of the country and contractual obligations and by rejecting any business practice which might reasonably be deemed improper (Kapila, 2012).

2.4 Role of Bidding in Procurement and Completion of Public Projects in Energy Sector

Supplier selection is the process by which firms identify, evaluate, and contract with suppliers. The supplier selection process deploys a tremendous amount of firms' financial resources. In return, firms expect significant benefits from contracting with suppliers offering high value. Suppliers have been acknowledged as the best intangible assets of any business organization (Muralidharan *et al.* 2012). According to Tahriri *et al.*, (2012), supplier selection problem has become one of the most important issues for establishing an effective supply chain system. Indeed, supplier selection and evaluation represents one of the significant roles of purchasing and supply management functions. Arguably, purchasing and supply chain plays a crucial role in supply chain management through proper selection of competent suppliers. Weber, Current, and Benton, (2011) affirm that firms cannot successfully produce low cost, high quality products without judicious selection and maintenance of a competent group of suppliers. Lee *et al.*, (2011) and Kumara *et al.* (2013) emphasize that selection of the best supplier is an essential strategic issue imperative for supply chain effectiveness and efficiency. Kumara *et al.*, (2012) contend that strategic partnership with the right suppliers must be integrated within the supply chain to contain costs, improve quality and flexibility to meet end-customers value and reduce lead-time at different stages of the supply chain. Purchasing and supply management support the management of supplier network with respect to identification of supplier selection criteria, supplier selection decisions, and monitoring of supplier performance (Jose Gerardo & Martinez Martinez, 2010). However, selecting the right suppliers for a long-term relationship is a relevant procurement issue that demands judicious attention.

2.5 Role of Procurement Planning and Completion of Public Projects in Energy Sector

Procurement refers to the aspects of project management related to obtaining goods and services from outside companies. It does not refer to other internal organizations within your own company. Procurement planning is the process of identifying which project needs can be best met by procuring products or services outside the project organization and should be accomplished during the scope definition effort. It involves consideration of whether to procure, how to procure, what to procure, how much to procure, and when to procure. When the project obtains products and services (project scope) from outside the performing organization, the processes from solicitation planning through contract closeout would be performed once for each

product or service item. The project management team may want to seek support from specialists in the disciplines of contracting and procurement when needed, and involve them early in the process as a member of the project team. When the project does not obtain products and services from outside the performing organization, the processes from solicitation planning through contract closeout would *not* be performed. Procurement planning should also include consideration of potential sellers, particularly if the buyer wishes to exercise some degree of influence or control over subcontracting decisions (Basheka, 2008)

While procurement is an area into which a project manager will give input, in many, and perhaps most companies, it is an area that the project manager does not own. The project manager usually does not have the authority to enter into contracts on behalf of the company, and he is usually not asked to administer the contracts once they are in place (Sun, et al 2010)

2.6 Role of Procurement Scheduling and Completion of Public Projects in Energy Sector

This phase is primarily concerned with attaching a timescale and sequence to the activities to be conducted within the project. Materials and people needed at each stage of the project are determined and the time each is to take will be set. A popular and easy to use technique for scheduling is the use of Gantt charts. Gantt charts reflect time estimates and can be easily understood. Horizontal bars are drawn against a time scale for each project activity, the length of which represent the time taken to complete. Letters or symbols can also be added to the left of each bar to show which other activities need to be completed before that one can begin. A Gantt chart is a simple technique that can be used to attach a time scale and sequence to a project. A Gantt chart is a form of horizontal bar chart and horizontal bars are drawn against a time scale for each project activity, the length of which represents the time taken to complete. They are therefore a simple, rough and ready means of planning a project and assessing progress and are sufficient for most simple projects (Neumann, Schwindt & Zimmermann, 2012).

However, where projects become complex, it becomes difficult to see relationships between activities by using a Gantt chart. For projects that are more complex Network Analysis techniques are used. Gantt charts also provide a summary of the project as a whole and can be used as a rough and ready means of assessing progress at the project control phase. At any date,

the project manager can draw a dateline through the Gantt chart and see which activities are on time, which are behind schedule and generally record project status against plan.

Gantt charts, named after Henry L. Gantt, one of the pioneers of scientific management, are a useful means of representing a schedule of activities comprising a project and enable the operations manager to know exactly what activities should be performed at a given time and, more importantly, to monitor daily progress of a project so that corrective action may be taken when necessary (Maheswari, & Varghese, 2005).

To construct a Gantt chart, the various activities are listed on a vertical axis and the horizontal axis is used to represent time. Activity precedence's are taken into account by starting a horizontal bar to represent the next activity at an appropriate point after its preceding activities, that is those activities which must take place before the next activity can start, have taken place (Demeulemeester & Herroelen, 2006).

2.7 Theoretical Framework

A theoretical framework refers to how the researcher developed thoughts on what the possible answers could be. These thoughts and theories were then clustered into themes that frame the subject. This research mainly focused on procurement function role on successful project completion. The underpinning theories included; Social Economic Theory, Stakeholder Theory and Resource Based View.

2.7.1 Socio-Economic Theory

Sutinen and Kuperan (2012) propounded the socio-economic theory of compliance by integrating economic theory with theories from psychology and sociology to account for moral obligation and social influence as determinants of individuals' decisions on compliance. According to Lisa (2010), psychological perspectives provide a basis for the success or failure of organizational compliance. Wilmshurst and Frost (2000) also add that the legitimacy theory postulates that the organization is responsible to disclose its practices to the stakeholders, especially to the public and justify its existence within the boundaries of society. This theory, which focuses on the relationship and interaction between an organization and the society, provides a sufficient and superior lens for understanding government procurement system (Hui *et*

al., 2011). From this theory, we can understand the procurement policy, planning, supplier selection, contract reviews and sustainable procurement practices in public institutions and their influence on service delivery to the society as well as project implementations.

2.7.2 Resource Based Theory

The resource-based view holds that firms can earn sustainable super normal returns if and only they have superior resources which are protected by some form of isolating mechanism preventing their diffusion through industry (Barney, 1991). Resource-Based View (RBV) provides a good theoretical foundation to discuss the contribution of resources and capabilities to firm's performance. The theory gives an insight on the relations among internal resources, capabilities and performance.

Resources are inputs into a firm's production process, such as capital, equipment, skills of individual employees, patents, finance, and talented managers. Resources are either tangible or intangible in nature. With increasing effectiveness, the set of resources available to the firm tends to become larger. Individual resources may not yield to a competitive advantage. It is through the synergistic combination and integration of sets of resources that competitive advantages are formed. The Resource-based Theory (RBV) is a strategic management theory that is widely used in project management. It examines how resources can drive competitive advantage (Killen *et al.*, 2012). The RBT has become one of the most influential strategic management theories cited in strategic management literature due to its immediate face validity, appealing core message, and ease to grasp and teach (Kraaijenbrink *et al.*, 2010). With the help of this theory one can understand how to utilize the available resources, select our suppliers, do contract reviews to accomplish and implement a given project effectively by prioritizing the project needs.

2.8 Conceptual Framework

According to Thomas (2010), a conceptual framework can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. Its aim is to assist a researcher to develop awareness and understanding of the situation under scrutiny and communicate the same in a broad perspective. It highlights the study variables and illustrates the underlying relationships (Thomas, 2010).

This displays the inputs as independent variables and the output as dependent variables. Any changes in the input brought about by the way procurement function is carried out will have an effect on the outputs. The independent variables of the study are proper contract management, correct bidding procedure, adequate procurement planning and proper procurement scheduling.

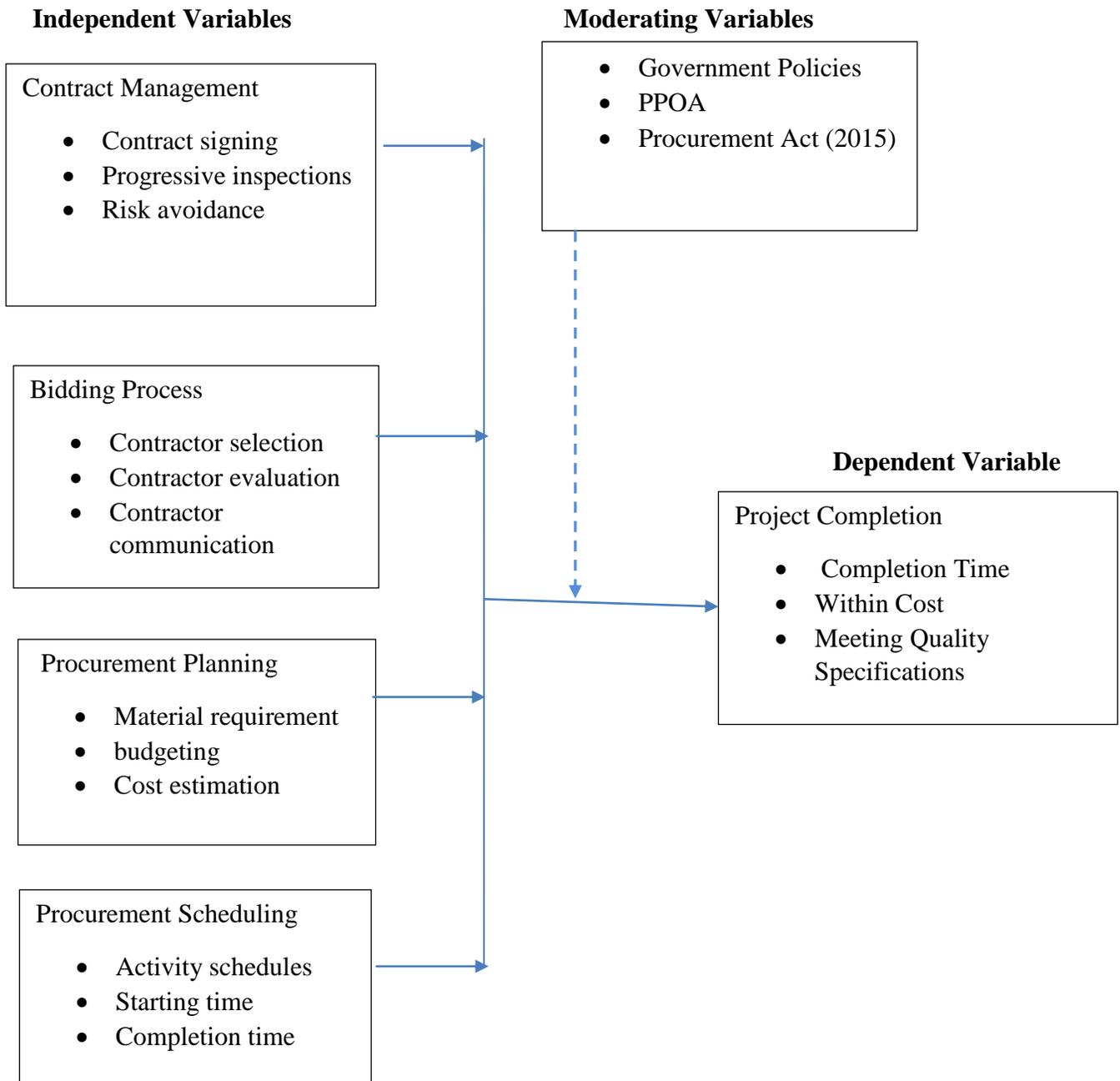


Figure 1: Conceptual Framework

2.9 Summary of Literature Review

In summary, there seems to exist a congruence of ideas on the whole phenomenon of public projects implementation in Kenya. As pointed out by Chandra (2010), Oladipo (2012), Gurung *et al.*, (2012), among other scholars on the subject under study, the key factors that influence public projects implementation are planning, monitoring& control, supplier selection and communication. The Kenya Government public procurement legal framework speaks quite categorically to all these four factors. However, it may be noted that there could be other procurement practices other than these that also impact on project implementation. This provides a room for further research in this area to provide a comprehensive body of knowledge that can profoundly benefit public policy makers and academicians.

This chapter has focused on the four key procurement function aspects aforesaid and has demonstrated that the challenges of public project implementation are not only unique to Kenya but they are a universal phenomenon throughout the world. There have been reported cases of cost over-runs in India, Chandra (2010), poor planning and monitoring besides inadequacies in finance in the Nigerian situation, Oladipo (2010). The same situation is confirmed in Kenya (KENAO, 2010).

All these factors have combined to undermine successful project implementation thereby culminating to loss of colossal amounts of public resources and ultimately denying the public the intended benefits that would have been derived from the project had it been successfully implemented. The end result has been perpetually low levels of socio-economic development and poor living conditions for the greater majority of the world's populace. The chapter has dwelt on many issues that pertain procurement functions and project completion in the energy sector. Theories relevant to the study have been reviewed in order to strengthen the objectives of the research. Some of the theories include: Stakeholder theory, Resource Based View, and social economic theory

The variables in the conceptual framework have been discussed in depth starting with the independent variables; contract management, procurement planning, bidding, project scheduling and the dependent variable being successful project completion. Existing literature have been

reviewed based on the variables and a critique has been done highlighting the different studies that have been done globally and locally.

2. 10 Knowledge Gap

There are apparently significant gaps in the academic area of public projects completion in Kenya leading to unwarranted loss and wastage of the scarce public resources. No conclusive study has been carried out to quantify the extent of public projects failure and the resultant wastage of resources. A previous study by Moraa (2011) appears only to focus on roads projects at the Ministry of Roads, yet the problem may be more widespread across the board within the entire public sector. Moreover, not a lot has been researched in this area from a procurement standpoint, yet procurement has over the last one decade increasingly gained prominence within the public sector being at the core of the projects implementation process in Kenya. What has been lacking is providing the linkage between the public procurement system and the project implementation goals. As a result, procurement has in the past been relegated by researchers and project implementers to the periphery of public projects implementation process. Hence the high rate of public projects failure.

Experience has demonstrated that it is only at the end of the process when the project fails that project implementers realize that they should have engaged with the procurement system, with a view to strengthening it, first and foremost, before embarking on the project itself. Even though some researchers including Kirungu (2011), Malala (2011), Mutunga (2010) and Rutere (2010) have attempted to bring to the fore the relevance of procurement in public projects implementation, their effort has generally been rather too general and as such wanting in detail thereby failing to address the specific aspects of procurement that affect project implementation. The researcher intends to bridge these glaring research gaps.

This study is an effort to plug this gap and to provoke more critical thinking and research in the area of public projects implementation. What are mostly available are audit reports on failed projects compiled by the office of the Auditor General. These reports mainly concentrate on pinpointing individuals liable for failure and the probable risks to the concerned organizations,

but are generally short on details on what the exact causes of project failure are and on what exactly needs to be done to correct the situation and reverse the trend in Kenya.

Table 1: Knowledge Gap

Variable	Author/Year	Title of the Study	Findings	Knowledge Gap
Completion of public projects	Malala (2011)	Effect of Procurement on Performance of Constituency Development Fund Projects in Kenya: Case Study of Kikuyu Constituency	He agrees that procurement does affect the performance of projects.	The findings are too general hence should be narrowed down to specific aspects of procurement.
Procurement planning	Office of Auditor General	Audit reports on failed projects	There is evidence of many failed public projects.	The auditors mainly concentrated on implicating individuals rather than find the actual cause of failure

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the methodology employed to study the involvement of procurement function on project completion. It presented the research design, target population, sampling technique and sample size, data collection procedure, instruments for collecting data, pilot testing, data analysis and presentation.

3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The research design was a case study within KENGEN. Blumberg, Cooper and Schindler (2005) place more emphasis on a full contextual analysis of fewer events or conditions and their interrelations. The merit of using a case study was that it allowed an in-depth understanding of the behavior pattern of the concerned unit. Additionally, a case study allowed a researcher to use one or more of the several research methods depending on the circumstances. The study was used to identify the procurement function aspects and their role in successful completion of projects. The reason for this choice was based on the knowledge that case studies were the most appropriate for examining the processes by which events unfold, as well as exploring causal relationships and they provided a holistic understanding of the phenomena (Kitay & Callus, 1998).

3.3 Target Population

According to Mugenda and Mugenda (2010), a target population is the complete set of individuals, cases or objectives with some common characteristics to which the researcher wants to generalize the results of the research. According to the KenGen website as per September 2018 and further consultation with the administration department at Tana Branch the target population of interest in this study, consisted of 58 staff members at KenGen Tana branch in Murang'a County and precisely Procurement Department, Finance Department, Operations Management Department, Administration Department and the Stores Department. The study

targeted these functional levels of management because project management cuts across all business processes and these departments were directly or indirectly involved in the formulation and implementation of projects.

3.4 Sample Size and Sampling Procedure

A sample is a set of observations drawn from a population by a defined procedure. The sample represented a subset of manageable size. A sample is a sub set of the population. It may not be possible to involve the entire populous of the population. A sample is therefore sought to proceed with the research. The goal of sampling techniques is to select a reasonable number of subjects, objects, cases that represent the target population (Savin-Baden & Major, 2013). Using Nassiuma (2001) formula:

$$n = \frac{NC^2}{C^2 + (N - 1)e^2}$$

Where

n – sample size

N - Population size

C – Coefficient of variation

e – Level of precision

With a confidence level of 95%, coefficient of variation of 0.5 and precision level of 5%, the sample size of this study was 37 employees. The sample was drawn from the population that represented the employees of KenGen Tana Unit.

This research adopted a stratified random sampling technique in selecting the sample. The technique produced estimates of overall population parameters with greater precision and without bias because the numbers were random (Mark Saunders, et al, 2009). The use of sample enables the researcher to save time and costs associated with studying the entire population (Mark Saunders, et al, 2009). The selected respondents were issued with questionnaires. The sample size was indicated in the table that follows:

Table 3. 1: Sample Size

Stratum	Target Population	Sample Size
Procurement Department	5	3
Finance Department	4	2
Operations Management Department	20	14
Administration Department	25	16
Stores Department	4	2
TOTAL	58	37

3.5 Research Instruments

The study relied on primary data. Data from the target respondents was collected through administration of questionnaire. The questionnaires contained closed ended questions, which allowed quantitative analysis to be done. Questionnaires were preferred because of their simplicity and efficiency in obtaining information from a large number of respondents. The questionnaires were hand-delivered to the respondents and collected after a few days.

3.6 Pilot Testing of Research Instruments

Kothari (2004) argues that before using a questionnaire as a data collection tool, it is always advisable to conduct pilot study. This helped to bring into light the weaknesses (if any) of the questionnaire and the experience gained in this way can be used to effect improvement. For this study, pilot study was undertaken at KenGen Tana Power Station and the participating employees did not form part of the final respondents.

3.6.1 Validity of Research Instruments

Validity refers to the degree to which evidence and theory support the interpretation of test scores entailed by use of tests. The validity of instrument is the extent to which it does measure what it is supposed to measure. According to Mugenda and Mugenda (2010), Validity is the accuracy and meaningfulness of inferences, which are based on the research results. It is the

degree to which results obtained from the analysis of the data actually represent the variables of the study. Before the actual study, the questionnaire was discussed with supervisors. The feedback from the supervisors and the experts helped in modifying the questionnaires.

3.6.2 Reliability of Research Instruments

Reliability is the degree to which an assessment tool produces stable and consistent results. It shows whether the results are replicable or repeatable. Test-retest reliability method was used to test reliability of instruments in the study. Test-retest reliability is a measure of reliability obtained by administering the same test twice over a period to a group of individuals (Winer, Brown and Michels, 2011). Therefore, it shows the consistency of subject scores obtained by the instrument over time hence this method was the most appropriate for the study. A correlation coefficient of above 0.7 indicate that the research instrument is reliable (Patton, 1990). A Pearson Product moment correlation coefficient formula applied in the study:

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

Where;

R=Correlation coefficient

N =the number of point X and Y scores

$\sum X$ =Sum of scores in X distribution

$\sum Y$ =Sum of scores in Y distribution

$\sum X^2$ =Sum of squared scores in X distribution

$\sum Y^2$ =Sum of squared scores in Y distribution

$\sum XY$ =Sum of the product of point X and Y scores

3.7 Data Collection Procedure

Before embarking on data collection process relevant approvals were obtained. An introductory letter from the University of Nairobi was used to get research permit from National Council for Science and Technology. In addition, the researcher sought permission and buy-ins from the employees of various departments of KenGen Tana Branch. A covering letter stating the purpose of study was attached guaranteeing participants' confidentiality. Questionnaires were delivered

through hand delivery and picked thereafter. After they were collected they were examined for completeness, comprehensiveness, consistency and reliability.

3.8 Data Analysis Techniques

The data was edited, coded and tabulated for ease of analysis. The data was quantitatively analyzed based on research objectives. It was then presented in form of tables for easy interpretation and recommendation in decision making. The quantitative data was analyzed through descriptive statistics and inferential analysis by use of statistical package for social sciences (SPSS) version 21 software. Data analyzed descriptively was presented in tables because they gave a systematic record of analysis. Pearson's correlations coefficients were churned to examine the relationship among the independent and the dependent study variables that were set out in the objectives of the study.

Table 3. 2: Operationalization of Variables

Objective	Variable	Indicators		Measurement Scale	Tools of Analysis	Type of Data Analysis
Contract Management	Contract management in procurement	<ul style="list-style-type: none"> Contract signing Progressive inspections Risk avoidance 	Nature of contract Inspection intervals Extent of risk	Interval	Mean, standard deviation and correlation	Descriptive and inferential
Bidding	Bidding in procurement	<ul style="list-style-type: none"> Contractor selection Contractor evaluation Contractor communication 	No. of contractors Criteria of evaluation Frequency of communication	Interval	Mean, standard deviation and correlation	Descriptive and inferential
Procurement Planning	Planning in the procurement process	<ul style="list-style-type: none"> Material requirement Budgeting Cost estimation 	Cost of materials Allocated amount Market prices	Interval	Mean, standard deviation and correlation	Descriptive and inferential
Procurement Scheduling	Scheduling in the procurement process	<ul style="list-style-type: none"> Starting times Completion time Activity schedules 	Resource availability Commissioning time Project period	Interval	Mean, standard deviation and correlation	Descriptive and inferential
Project Completion	Project completion in the energy sector	<ul style="list-style-type: none"> Timeline Cost Quality 	Resource availability Allocated budget Set standards	Interval	Mean, standard deviation and correlation	Descriptive and inferential

3.9 Ethical Considerations

The researcher sought consent of the correspondents before administering the questionnaires and also assured them that the information provided was at NO point to be used against them. The information provided was solely for research purposes and no other parallel usage.

The researcher ensured that at no point did he breach the rules and regulations of the organization of study.

The researcher did not force or coax any respondent to give information. It was all about willingness to participate by the various respondents.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

The chapter presents the results of the primary data which was collected through the use of closed ended questionnaires whereby descriptive statistics was used to analyze the data. The results were analyzed inform of response rate, background information and the research findings to determine the role of procurement in project completion in the energy sector in Kenya.

4.2 Response Rate

With a sample size of 37, all questionnaires were correctly filled and returned achieving a 100% return rate.

Table 4. 1: Response Rate

Return Rate	Frequency	Percent
Returned Questionnaires	37	100
Unreturned Questionnaires	-	-
Total	37	100

4.3 Reliability Statistics

The questionnaires were piloted to ensure clarity of the questions and the results are presented in table 4.2

Table 4. 2: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on	
	Standardized Items	N of Items
.634	.716	5

Reliability was calculated with the help of Statistical Package for Social Sciences (SPSS). A correlation co-efficient above 0.7 is acceptable (Patton, 1909). Hence a co-efficient value 0.7 was an indicator that the questionnaires were reliable hence the study proceeded to using the questionnaires in the final data collection.

4.4 General Information

The study sought the general information of the respondents in the study, specifically the gender, age, highest level of education, how long one has worked with the organization and department of employment.

4.4.1 Gender of the Respondents

The study sought information on the gender of the respondents and as displayed on table 4.3.

Table 4. 3: Distribution by Gender

Gender	Frequency	Percentage
Male	19	51
Female	18	49
Total	37	100

The study results above showed that majority of the respondents were male at 51% while 49% were female. This clearly portrayed male to be the majority of the respondents.

4.4.2 Age of the Respondents

The study sought information on the age category of the respondents and as displayed on table 4.4:

Table 4. 4: Distribution of Respondent by Age

Age Category	Frequency	Percentage
Up-to 24 years	9	24
25 - 34 years	8	22
35 - 44 years	14	38
45 - 54 years	3	8
Over 55 years	3	8
Total	37	100

The study findings above showed that the majority of the respondents at 38% were aged 35-44 years, followed by the ages up-to 24 years and 25-34 years at 24% and 22% respectively. 45-54 years and over 35 years were both at 8% each.

This representation revealed the youth who were considered the young and productive to be lesser than respondents aged above 35 years.

4.4.3 Highest Level of Education

The study sought information on the highest level of education of the respondents and as depicted on table 4.5.

Table 4. 5: Distribution of Respondent by Highest Education Level

Highest Education Level	Frequency	Percentage
KCSE	2	5
Certificate	8	22
Diploma	14	38
Bachelor Degree	9	24
Postgraduate Degree	4	11
Total	37	100

The study results above showed that majority of the respondents at 38% had achieved diploma level while 24% had bachelor degree. Certificate, postgraduate degree and KCSE levels had 22%, 11% and 5% respectively.

4.4.4 Job Level

The study sought information on the job level of the respondents and this is shown on table 4.6.

Table 4. 6: Distribution by Job Level

Job Level	Frequency	Percentage
Lower Management	20	54
Middle Management	11	30
Top Management	6	16
Total	37	100

The study results revealed that majority of the respondents at 54% were from lower management level while 30% were from the middle management level. Top management had 16%.

4.4.5 Length Worked with the Organization

The study sought information on how long the respondent had worked with the organization and as shown on table 4.7.

Table 4. 7: Distribution of Respondent by Length Worked

Length	Frequency	Percentage
Less than 5 years	14	38
6-10 years	6	16
11-15 years	9	24
16-20 years	5	14
More than 20 years	3	8
Total	37	100

The study findings revealed that majority of the respondents at 38% had worked for less than 5 years while 24% had worked between 11-15 years. 16%, 14% and 5% had worked between 6-10 years, 16-20 years and more than 20 years respectively.

4.4.6 Department of Employment

The study sought information on the department of employment of the respondents and as displayed on table 4.8:

Table 4. 8: Distribution by Department

Department	Frequency	Percentage
Procurement	2	5
Finance	2	5
Operations Management	14	38
Administration	17	46
Stores	2	5
Total	37	100

Majority of the respondents at 46% were from the administration department followed by 38% were from the operations management. Procurement, finance and stores department had 5% each.

4.5 Role of Contract Management in Procurement and Completion of Public Projects in Energy Sector

The first objective sought to establish the role of contract management in procurement on project completion in the energy sector in Kenya. To achieve this, the respondents were asked some questions on a 5-point Likert scale whereby; 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree.

Table 4. 9: Contract Management

Statements		f	%	Mean	Std. Dev.
Contract management affects fast or timely completion of the project	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	8	22		
	Agree	17	46		
	Strongly Agree	11	30		
	Total	37	100	4.03	0.799
The degree of execution of the project is affected by how the contract management is done	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	3	8		
	Agree	18	49		
	Strongly Agree	16	43		
	Total	37	100	4.35	0.633
The way in which contract management is done have a bearing on the cost of the entire project	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	1	3		
	Agree	20	54		
	Strongly Agree	15	41		
	Total	37	100	4.30	0.777
Managing contracts during project management improves the quality of the whole project	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	3	8		
	Agree	14	38		
	Strongly Agree	19	51		
	Total	37	100	4.38	0.758
Monitoring the project to ensure terms and conditions are adhered to affect success project completion in a positive way	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	1	3		
	Agree	6	16		
	Strongly Agree	29	78		
	Total	37	100	4.70	0.661
Composite Mean and Std. Dev.				4.35	0.726

From the study findings illustrated in table 4.9 above, majority of the respondents with a mean of 4.70 agreed that monitoring the project to ensure terms and conditions were adhered to affected the success of project completion in a positive way while 4.38 said that managing contracts during project management improved the quality of the whole project. A mean of 4.35 and 4.30 agreed that the degree of execution of the project was affected by how the contract management was done and the way in which contract management was done had a bearing on the cost of the entire project respectively. Lastly, mean of 4.03 agreed that contract management affected fast or timely completion of the project.

Generally, a mean of 4.35 showed that contract management played a key role in procurement on project completion in the energy sector in Kenya.

4.6 Role of Bidding in Procurement and Completion of Public Projects in Energy Sector

The second objective sought to establish the role of bidding in procurement on project completion in the energy sector in Kenya. To achieve this, the respondents were asked some questions on a 5-point Likert scale whereby; 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree.

Table 4. 10: Bidding

Statements		f	%	Mean	Std. Dev.
Our organization obtain project supplies through competitive bidding	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	5	14		
	Agree	14	38		
	Strongly Agree	18	49		
	Total	37	100	4.35	0.716
Bidding process takes significant amount of time affecting project completion	Strongly Disagree	3	8		
	Disagree	10	27		
	Neutral	9	24		
	Agree	9	24		
	Strongly Agree	6	16		
	Total	37	100	3.14	1.228
A lot of finances are dedicated towards bidding process	Strongly Disagree	5	14		
	Disagree	11	30		
	Neutral	5	14		
	Agree	5	14		
	Strongly Agree	11	30		
	Total	37	100	3.16	1.482
Significant benefits to the project results from the investment made in bidding	Strongly Disagree	-	-		
	Disagree	10	27		
	Neutral	10	27		
	Agree	9	24		
	Strongly Agree	8	22		
	Total	37	100	3.41	1.117
Bidding contributes to improved quality of project supplies	Strongly Disagree	-	-		
	Disagree	3	8		
	Neutral	11	30		
	Agree	14	38		
	Strongly Agree	9	24		
	Total	37	100	3.78	0.917
Quality objectives are attained as a result of bidding for project supplies	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	11	30		
	Agree	19	51		
	Strongly Agree	7	19		
	Total	37	100	3.89	0.699
Composite Mean and Std. Dev.				3.62	1.026

From the study findings illustrated in table 4.10 above, majority of the respondents with a mean of 4.35 agreed that their organization obtained project supplies through competitive bidding while 3.89 agreed to the fact that quality objectives were attained as a result of bidding for project supplies. In addition, a mean of 3.78 and 3.41 agreed that bidding contributed to improved quality of project supplies and also it had significant benefits to the project results from the investment made in bidding respectively. A lot of finances were dedicated towards bidding process was at 3.16 while bidding process took significant amount of time affecting project completion was at 3.14.

Generally, a mean of 3.62 revealed that bidding played a key role in procurement on project completion in the energy sector in Kenya.

4.7 Role of Procurement Planning and Completion of Public Projects in Energy Sector

The third objective sought to establish the role of procurement planning on project completion in the energy sector in Kenya. To achieve this, the respondents were asked some questions on a 5-point Likert scale whereby; 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree.

Table 4. 11: Procurement Planning

Statements		f	%	Mean	Std. Dev.
Our organization project management team prepares periodic procurement plan	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	5	14		
	Agree	21	57		
	Strongly Agree	11	30		
	Total	37	100	4.16	0.646
The procurement plan ensure availability of materials when need throughout the project life cycle	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	1	3		
	Agree	19	51		
	Strongly Agree	16	43		
	Total	37	100	4.35	0.676
Availability of materials ensures timely completion of the project	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	1	3		
	Agree	19	51		
	Strongly Agree	17	46		
	Total	37	100	4.43	0.555
Having a procurement plan leads to cost saving due to purchase of materials at the right time and from the right sources	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	1	3		
	Agree	14	38		
	Strongly Agree	21	57		
	Total	37	100	4.49	0.692
Procurement plan leads to improved quality	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	5	14		
	Agree	12	32		
	Strongly Agree	20	54		
	Total	37	100	4.41	0.725
Procurement plan is recommended to any project team	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	1	3		
	Agree	10	27		
	Strongly Agree	25	68		
	Total	37	100	4.59	0.686
Composite Mean and Std. Dev.				4.41	0.663

From the study results indicated in table 4.11 above, majority of the respondents with a mean of 4.59 agreed that procurement plan was recommended to any project team while 4.49 agreed to the fact that having a procurement plan led to cost saving due to purchase of materials at the right time and from the right sources. Furthermore, a mean of 4.43 and 4.41 agreed that availability of materials ensured timely completion of the project and that procurement plan led to improved quality. 4.35 and 4.16 agreed that the procurement plan ensured availability of materials when needed throughout the project life cycle and that their organization project management team prepared periodic procurement plan respectively.

Generally, a mean of 4.41 agreed that procurement planning played a key role in procurement on project completion in the energy sector in Kenya.

4.8 Role of Project Scheduling in Procurement and Completion of Public Projects in Energy Sector

The fourth objective sought to establish the role of project scheduling on project completion in the energy sector in Kenya. To achieve this, the respondents were asked some questions on a 5-point Likert scale whereby; 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree.

Table 4. 12: Project Scheduling

Statements		f	%	Mean	Std. Dev.
When handling projects in our organization, timescale and sequence of activities is done	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	6	16		
	Agree	18	49		
	Strongly Agree	13	35		
	Total	37	100	4.19	0.701
Having timescale and sequence of activities helps in proper management of project time	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	3	8		
	Agree	22	59		
	Strongly Agree	11	30		
	Total	37	100	4.14	0.787
Project scheduling reduces the general cost of the project	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	3	8		
	Agree	16	43		
	Strongly Agree	17	46		
	Total	37	100	4.30	0.845
Quality of the project is affected positively by the project scheduling	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	2	5		
	Agree	12	32		
	Strongly Agree	22	59		
	Total	37	100	4.49	0.731
Our organization uses Gantt charts, PERT and critical path methods in project scheduling	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	9	24		
	Agree	8	22		
	Strongly Agree	19	51		
	Total	37	100	4.22	0.917
Composite Mean and Std. Dev.				4.26	0.796

From the study results illustrated in table 4.12 above, majority of the respondents with a mean of 4.49 and 4.30 agreed that quality of the project was affected positively by the project scheduling and project scheduling reduced the general cost of the project respectively. Again, a mean of 4.22 and 4.19 agreed that the organization used Gantt charts, PERT and critical path methods in project scheduling and that when handling projects in their organization, timescale and sequence of activities was done respectively. Mean of 4.14 said that having timescale and sequence of activities helped in proper management of project time.

Generally, a mean of 4.26 agreed that project scheduling played a key role in procurement on project completion in the energy sector in Kenya.

Table 4. 13: Completion of Public Projects

Statements		f	%	Mean	Std. Dev.
Timely completion of projects	Strongly Disagree	-	-		
	Disagree	1	3		
	Neutral	6	16		
	Agree	16	43		
	Strongly Agree	14	38		
	Total	37	100	4.16	0.800
Projects completed within budgets	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	2	5		
	Agree	14	38		
	Strongly Agree	21	57		
	Total	37	100	4.51	0.607
Quality completion of projects	Strongly Disagree	-	-		
	Disagree	-	-		
	Neutral	3	8		
	Agree	14	38		
	Strongly Agree	20	54		
	Total	37	100	4.46	0.650
Composite Mean and Std. Dev.				4.38	0.685

From the study findings in table 4.13 above, majority of the respondents with a mean of 4.51 and 4.46 agreed that projects were completed within budgets and quality completion of projects respectively. Mean of 4.16 said that there was timely completion of projects.

Generally, a mean of 4.38 agreed that completion of public projects was a key aspect in the energy sector in Kenya.

4.9 Correlation Analysis

The study further carried out inferential statistics using correlation analysis to show the strength of the relationship between dependent and independent variables as shown in in table 4.14.

Table 4. 14: Correlations

		Completion of Public Projects in Energy Sector	Contract Agreement	Bidding	Procurement Planning	Project Scheduling
Completion of Public Projects in Energy Sector	Pearson Correlation Sig. (2-tailed) N	1 37				
Contract Agreement	Pearson Correlation Sig. (2-tailed) N	.583** .000 37	1 37			
Bidding	Pearson Correlation Sig. (2-tailed) N	-.452** .005 37	-.557** .000 37	1 37		
Procurement Planning	Pearson Correlation Sig. (2-tailed) N	.512** .001 37	.632** .000 37	-.586** .000 37	1 37	
Project Scheduling	Pearson Correlation Sig. (2-tailed) N	.463** .004 37	.363* .027 37	-.304 .068 37	.291 .081 37	1 37

The correlation matrix displayed in table 4.14 above revealed that there was a positive moderate correlation between contract agreement and completion of public projects in energy sector which implied that a unit increase in contract agreement increases completion of public projects in energy sector by 0.583 in Kenya.

There was also a negative moderate correlation between bidding and completion of public projects in energy sector which implied that a unit decrease in bidding completion of public projects in energy sector by -0.452 in Kenya.

Further, there was also a positive moderate correlation between procurement planning and completion of public projects in energy sector which implied that a unit increase in procurement planning increases completion of public projects in energy sector by 0.512 in Kenya.

Finally, there was a positive moderate correlation between project scheduling and completion of public projects in energy sector which implied that a unit increase in project scheduling increases performance of social entrepreneurship project completion of public projects in energy sector by 0.463 in Kenya.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the study findings, discussions, conclusions and the recommendations made by the researcher and made suggestions for further research. The findings were summarized in line with the objectives of the study which was to determine the role of procurement in project completion in the energy sector in Kenya.

5.2 Summary of Findings

The study findings showed that the majority of the respondents at 15% while 49% were female which clearly portrayed the majority of the respondents to be male. 38% were aged 35-44 years, followed by the age's up-to 24 years and 25-34 years at 24% and 22% respectively. 45-54 years and over 35 years were both at 8% each. This representation revealed the youth who were considered the young and productive to be lesser than respondents aged above 35 years. Majority of the respondents at 38% had achieved diploma level while 24% had bachelor degree. Certificate, postgraduate degree and KCSE levels had 22%, 11% and 5% respectively. The study results revealed that majority of the respondents at 54% were from lower management level while 30% were from the middle management level. Top management had 16%. 38% had worked for less than 5 years while 24% had worked between 11-15 years. 16%, 14% and 5% had worked between 6-10 years, 16-20 years and more than 20 years respectively. Majority of the respondents at 46% were from the administration department followed by 38% were from the operations management. Procurement, finance and stores department had 5% each.

A mean of 4.35 of majority of the respondents showed that contract management played a key role in procurement on project completion in the energy sector and also a mean of 3.62 showed that bidding played a key role in procurement on project completion in the energy sector. In addition, a mean of 4.41 showed that procurement planning played a key role in procurement on project completion in the energy sector while a mean of 4.26 revealed that project scheduling played a key role in procurement on project completion in the energy sector in Kenya.

5.3 Discussion of Findings

This section focused on detailed discussion of the major findings of the study in relation to the broad objective in order to come up with comprehensive conclusion.

5.3.1 Role of Contract Management in Procurement and Completion of Public Projects in Energy Sector

The first objective portrayed that contract management played a key role in procurement on project completion in the energy sector in Kenya an average mean score of 4.35. This was attributed from the key areas assessed by the study statements which majority of the respondents with a mean 4.70 agreed that monitoring the project to ensure terms and conditions were adhered to affected the success of project completion in a positive way while 4.38 said that managing contracts during project management improved the quality of the whole project. A mean of 4.35 and 4.30 agreed that the degree of execution of the project was affected by how the contract management was done and the way in which contract management was done had a bearing on the cost of the entire project respectively.

5.3.2 Role of Bidding in Procurement and Completion of Public Projects in Energy Sector

On the second objective, the study findings indicated that bidding played a key role in procurement on project completion in the energy sector in Kenya with a mean score of 3.62. Majority of the respondents with a mean of 4.35 agreed that their organization obtained project supplies through competitive bidding while 3.89 agreed to the fact that quality objectives were attained as a result of bidding for project supplies. In addition, a mean of 3.78 and 3.41 agreed that bidding contributed to improved quality of project supplies and also it had significant benefits to the project results from the investment made in bidding respectively. A lot of finances were dedicated towards bidding process was at 3.16 while bidding process took significant amount of time affecting project completion was at 3.14.

The results were consistent with the findings of Weber, Current, and Benton, (2011) who affirmed that firms cannot successfully produce low cost, high quality products without judicious selection and maintenance of a competent group of suppliers. In addition, Lee *et al.*, (2011) and Kumara *et al.* (2013) emphasized that selection of the best supplier was an essential strategic

issue imperative for supply chain effectiveness and efficiency. Kumara *et al.*, (2012) also contended that strategic partnership with the right suppliers must be integrated within the supply chain to contain costs, improve quality and flexibility to meet end-customers value and reduce lead-time at different stages of the supply chain.

5.3.3 Role of Procurement Planning and Completion of Public Projects in Energy Sector

The third objective revealed that majority of the respondents agreed that procurement planning played a key role in procurement on project completion in the energy sector in Kenya with an average mean score of 4.41. The study showed that a mean of 4.59 agreed that procurement plan was recommended to any project team while 4.49 agreed to the fact that having a procurement plan led to cost saving due to purchase of materials at the right time and from the right sources. Furthermore, a mean of 4.43 and 4.41 agreed that availability of materials ensured timely completion of the project and that procurement plan led to improved quality. 4.35 and 4.16 agreed that the procurement plan ensured availability of materials when needed throughout the project life cycle and that their organization project management team prepared periodic procurement plan respectively.

The results collaborate with the findings of Basheka, 2008 that the project management team need to seek support from specialists in the disciplines of contracting and procurement when needed, and involve them early in the process as a member of the project team. When the project does not obtain products and services from outside the performing organization, the processes from solicitation planning through contract closeout would *not* be performed. Procurement planning should also include consideration of potential sellers, particularly if the buyer wishes to exercise some degree of influence or control over subcontracting decisions.

5.3.4 Role of Project Scheduling and Completion of Public Projects in Energy Sector

The fourth objective indicated that project scheduling played a key role in procurement on project completion in the energy sector in Kenya with an average mean of 4.26. Information from the study revealed that majority of the respondents with a mean of 4.49 and 4.30 agreed that quality of the project was affected positively by the project scheduling and project scheduling reduced the general cost of the project respectively. Again, a mean of 4.22 and 4.19

agreed that the organization used Gantt charts, PERT and critical path methods in project scheduling and that when handling projects in their organization, timescale and sequence of activities was done respectively. Mean of 4.14 said that having timescale and sequence of activities helped in proper management of project time.

The results were consistent with the findings by (Neumann, Schwindt & Zimmermann, 2012) that a simple, rough and ready means of planning a project and assessing progress were sufficient for simplest projects.

5.3.5 Completion of Public Projects in Energy Sector

The study findings revealed that majority of the respondents with a mean of 4.51 and 4.46 agreed that projects were completed within budgets and quality completion of projects respectively. Mean of 4.16 said that there was timely completion of projects. Generally, a mean of 4.38 agreed that completion of public projects was a key aspect in the energy sector in Kenya.

This had been confirmed by a study done by Meredith and Mantel (2012), which indicated that the key things to be arranged, checked and controlled were time (plan), cost (spending plan) and degree (execution).

5.4 Conclusion

From the above discussion, the study concluded that: The study revealed that contract management played a key role in procurement on project completion in the energy sector in Kenya attributed by monitoring the project to ensure terms and conditions were adhered to affected the success of project completion in a positive way, managing contracts during project management improved the quality of the whole project, degree of execution of the project was affected by how the contract management was done and the way in which contract management was done had a bearing on the cost of the entire project.

Bidding played a key role in procurement on project completion in the energy sector in Kenya whereby the study revealed that their organization obtained project supplies through competitive bidding, quality objectives were attained as a result of bidding for project supplies, bidding contributed to improved quality of project supplies and also it had significant benefits to the project results from the investment made in bidding. A lot of finances being dedicated towards bidding process and bidding process took significant amount of time affecting project completion

In addition, it can also be concluded that procurement planning played a key role in procurement on project completion in the energy sector in Kenya whereby procurement plan was recommended to any project team led to cost saving due to purchase of materials at the right time and from the right sources. Also, availability of materials ensured timely completion of the project and that procurement plan led to improved quality.

Project scheduling played a key role in procurement on project completion in the energy sector in Kenya whereby the study revealed that quality of the project was affected positively by the project scheduling and project scheduling reduced the general cost of the project. Again, having timescale and sequence of activities helped in proper management of project time.

Finally, projects were completed within budgets and quality completion of projects. There was timely completion of projects.

In summary, there was a positive correlation between contract management, procurement planning and project scheduling and completion of public projects in energy sector while a negative correlation was observed between bidding and completion of public projects in energy sector in Kenya.

5.5 Recommendations

Based on the study findings, the following recommendations were made:

1. There is need to manage and monitor all the project contracts in the organization ensuring terms and conditions are adhered to for the successful completion of public projects.
2. Ensure supplier selection and evaluation is done transparently, fairly and accurately as it represents one of the significant roles of purchasing and supply management functions hence leads to achievement of quality objectives
3. Timely, periodic and proper procurement planning by the organization should be done in order for to have availability of resources for continuity and effective completion of projects within scope, time and cost.
4. Ensure project scheduling is done accurately with monitored timescales and sequences of project activities to timely achieve the project goals and objectives within project scope, coat and time with quality.

5.6 Suggestion Areas for Future Study

The study sought to determine the role of procurement in project completion in the energy sector in Kenya. Similar studies should be carried out in other Counties in Kenya in evaluating other vital factors that are likely to determine the role of procurement in project completion in the energy sector.

REFERENCES

- Abdi, A.H. (2012). Procurement practices in Kenya Public Corporations, University of Nairobi. A Case study of Kenya Power. Retrieved from University of Nairobi, MBA Library.
- Anderson, E. and Oliver. R.L. (1987),” Perspectives on behavior based versus outcome-based sale force control system”, *Journal of Marketing*, Vol. 51 No.4.
- Anvuur, A and Kumaraswamy.M (2007) ‘Conceptual Model of Partnering and Alliancing’ *journal of construction engineering and management*. Vol. 133, No 3
- Awino, Z.B. (2010). An empirical investigation of Supply Chain Management best practices in Large Private manufacturing firms in Kenya, University of Nairobi
- Bose, D. (2011). *Inventory Management*. New Delhi, India: Prentice Hall.
- Ballestin, F., & Leus, R. (2009). Resource-Constrained Project Scheduling for Timely Project Completion with Stochastic Activity Durations. *Production and Operations Management*, 18(4), 459-474.
- Basheka, B. C. (2008). Procurement planning and accountability of local government procurement systems in developing countries: Evidence from Uganda. *Journal of Public Procurement*, 8(3), 379.
- Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2012). *Supply chain logistic management*. New York: McGraw Hill.
- Brown, B., & Hyer, N., (2010); *Managing Projects: A Team-Based Approach*, International Edition, Singapore, McGraw- Hill.
- Carson, G. B. (2011, April 30th). *Materials Management and Inventory Control*. Retrieved Feb 22, 2012, from Google: www.scribd.com.
- Chandra, P. (2010). *Projects: Planning, Analysis, Review*; (6thed.)
- Cheboi K. (2014) *Procurement Legislation and Procurement Performance: A case of Kenya National Highways Authority*, University of Nairobi.
- Chopra, S., & Meindl, P. (2012). *Supply Chain Management Strategy Planning and Operations* (3rd ed.). New Delhi, India: Prentice hall.
- Christopher, & Martin. (2010). *Logistics and Supply Chain Management*. Harlow: Prentice Hall.
- Christopher, S. J., & Angela, R. (2010). Safety stock Decision support tool. *Production and Inventory Management Journal*.

- Cox, A and Thompson, I (1997) 'Fit for purpose contractual Relations: Determining a theoretical framework for construction projects' *European journal of purchasing and supply management*. Vol 3, No 3
- Crosby, T. (2010 July 30th). How Inventory Management System Works. Retrieved Feb 15th, 2012, from Google: money.howstuffworks.com
- Demeulemeester, E. L., & Herroelen, W. S. (2006). *Project scheduling: a research handbook* (Vol. 49). Springer Science & Business Media.
- Deselle, S. P., & Zgarrick, P. (2010). *Inventory management essential for all practice settings* (2 ed.). New York: McGraw-Hill.
- Eriksson, P. E. and Nilsson, T. (2008) 'Partnering the Construction of a Swedish Pharmaceutical Plant: Case Study'. *Journal of Management in Engineering*, Vol 24, No 4
- Eriksson, P.E and Laan, A (2007) 'Procurement effects on trust and control in client –contractor relationships' *Engineering, construction and architectural management*. Vol 14, No 4
- Eriksson, P.E. (2006), "Procurement and governance management – development of a Conceptual procurement model based on different types of control", *Management Review*, Vol. 17 No. 1.
- Ferrington, Lysons, K., & Brian. (2011). *Purchasing and Supply Chain Management* (6th ed.). Essex, UK: Pearson Education limited.
- Fong, P. and Choi, S. (2000) 'Final Contractor Selection Using the Analytical Hierarchy Process'. *Construction Management and Economics*, Vol. 18, No. 5
- Forsythe, P. (2007) 'A Conceptual Framework for Studying Customer Satisfaction in Residential Construction'. *Construction Management and Economics*. Vol 25, No 2
- Garcia, R., Burgess, X., & TF, W. a. (2003). *Tuning Inventory Policy Parameters in small chemical company*. Operational Research Society.
- Geri LoBiondo-Wood, Judith Haber (1994) -*Nursing Research: Methods and Critical Appraisal for Evidence*, Volume 1: *Methods and Critical Appraisal for Evidence-Based Practice*
- Government of Kenya, (2005). *The Public Procurement and Disposal Act (No.3 of 2005) Gazette Notice No.719*, Government Printer: Nairobi.
- Government of Kenya. (2005). *Public Procurement and Disposal Act, (2005)*. Government
- H, E., & Frazelle, p. (2012). *Supply Chain Strategy*. New York: Tata mcGraw-hill.

- Huang, E., & Chen, S. J. G. (2006). Estimation of project completion time and factors analysis for concurrent engineering project management: a simulation approach. *Concurrent Engineering*, 14(4), 329-341.
- Jessop, D., & Morrison, A. (2011). *Storage and Supply of Materials* (6th Edition ed.). Essex, Britain: Prentice Hall.
- Kenya National Audit Office Report (2010). *Financial Audit Report of the Kenya Civil Aviation Authority*. Nairobi. Government Printer
- Kirungu, E. (2011). *Factors influencing Implementation of Donor Funded Projects: A Case Study of Financial and Legal Sector Technical Assistance Project*. Retrieved from Jomo Kenyatta University of Agriculture and Technology, Department of Entrepreneurship and Procurement
- Kothari, C.R. (2010). *Research Methodology, Methods and Techniques* (Second Revised Edition); New Age International Publishers Ltd.
- Lam, K., Hu, T., NG, T., Skitmore, M. & Cheung, S.-O. (2001) 'A fuzzy neural network approach for contractor prequalification'. *Construction Management and Economics*, Vol 19, No 2.
- Lee, D. E. (2005). Probability of project completion using stochastic project scheduling simulation. *Journal of construction engineering and management*, 131(3), 310-318.
- Leenders, Johnson, Flynn, & Fearson. (2011). *Purchasing and supply management with Fifty Supply Chain Cases* (13th ed.). New York: McGraw-Hill.
- Lyson, A., Colemon, J., Keheo, D., & Coronado, A. (2011). Performance observation and analysis of information re-engineering supply chain. *Industrial management and data system*, 104, 658-666.
- Lysons, K. & Farrington, B. (2010). *Supply Management*, (7th ed.). London, Pearson Education Limited.
- Maheswari, J. U., & Varghese, K. (2005). Project scheduling using dependency structure matrix. *International Journal of Project Management*, 23(3), 223-230.
- Malala, A. (2011); *Effect of Procurement on Performance of Constituency Development Fund Projects in Kenya: Case Study of Kikuyu Constituency*. Retrieved from Jomo Kenyatta University of Agriculture and Technology, Department of Entrepreneurship and Procurement.

- Masaka,D.(2012).Why enforcing Corporate Social Responsibility is Morally Questionable. Electronic Journal of Business Ethics and Organization Studies, Vol.13
- Masterman, J.W.E. (2002), Introduction to Building Procurement Systems, 2nd ed., Spon Press, London.
- Mattson, S.-A. (2011). Inventory Control in Environment with Short Lead Time. International Journal of Physical Distribution and Logistics, 27(2).
- Meredith, J. & Mantel, S. (2012). Projects Management: A Managerial Approach. (8thed.). Singapore, John Wiley & Sons, Inc.
- Minner, S. (2010). Strategic safety stock in supply chains. New York: Springer.
- Mugenda, O. & Mugenda, A. (2010). Research Methods: Quantitative & Qualitative Approaches. Nairobi, Acts Press.
- Mwensele, H. A., Sichona, F. J., & Akarro, R. R. (2011). Inventory Control. Business Economic Journal, 1 - 23.
- Neumann, K., Schwindt, C., & Zimmermann, J. (2012). *Project scheduling with time windows and scarce resources: temporal and resource-constrained project scheduling with regular and nonregular objective functions*. Springer Science & Business Media.
- Ngai, S., Drew, D., Lo.P and Skitmore, M (2002) Theoretical framework for determining in the minimum number of bidders in construction bidding competitions'. Construction management and economics. Vol 4, No 2
- Ojo, S.O., Adeyemi, A.Y. and Ikpo, J.J. (2000), "Effects of procurement methods on clients' objectives of time and cost in the Nigerian construction industry", Journal of Financial Management in Construction and Property, Vol. 5
- Oladipo, J. (2011). Project Planning and Implementation at the Local Government Level: Lessons of Experience, European Journal of Social Sciences – Volume 6, Number 4 (2011).
- Onyinkwa, J. (2013). Factors influencing compliance to Procurement Regulations in Public Secondary Schools in Kenya: A case of Nyamache District, Kisii County.Jomo Kenyatta University of Agriculture and Technology.
- Orodho J.A. (2004) Techniques of Writing Research Proposals and Reports in Education, Masda Publishers, Vol 1

- Peter, B., Farne, David Jessop, D., & David, J. (2011). *Purchasing Principles and Management*. Essex: Prentice Hall.
- Reiss, G. (2012). *Project Management Demystified: Today's tools and techniques*, (1st ed.). London, E & N Spon.
- Ruston, A., Cruocher, P., & Peter Baker. (2013). *Logistic and Distribution* (3rd ed.). Philadelphia PA, London: Kogan Page.
- Saleemi, N. (2010). *Purchasing and Supplies Management Simplified* (2nd Edition ed.). Nairobi: Saleemi Publication Limited.
- Saunders, & Malcom. (2012). *Strategic Purchasing & Supply Chain Management*. Essex: Prentice Hall.
- Shah, J. (2010). *Supply Chain Management Text and Cases* (1st ed.). New Delhi, India: Pushp Print Services.
- Sneider, K. and Rendon R. (2011). *Public Procurement; Public Administration and Public Service Perspectives*. *Journal of Public Affairs Education*.
- Sople Vinod, V. (2010). *Logistic Management*. London: Dorling Kindersley.
- Sun, G. J., Liu, Y. K., & Lan, Y. F. (2010). Optimizing material procurement planning problem by two-stage fuzzy programming. *Computers & Industrial Engineering*, 58(1), 97-107.
- Walker, D & Hampson, K, 2003 "Procurement Strategies – A Relationship base approach", Blackwell, Oxford, 2003, Vol 1
- Yeh, C. H. (2010). A Customer Focused Planning approach to make order production. *Industrial management and Data systems*, 100(4), 180-187.

APPENDICES

Appendix I: Introductory Letter

University of Nairobi,

P. O Box 30197,

Nairobi.

Email: samm975@gmail.com

Dear Sir/Madam

RE: ROLE OF PROCUREMENT ON COMPLETION OF PUBLIC PROJECTS IN ENERGY SECTOR IN KENYA: A CASE OF KENGEN, TANA BRANCH

I am Samson Opata Muyanda from The University of Nairobi pursuing Master of Arts in Project Planning and Management. I chose to carry out my research in your organization following the repute you hold in the Energy sector as well as the established systems you have in place. I will be targeting the following departments; Procurement Department, Finance Department, operations management Department, administration Department and the Stores Department I humbly ask for your uttermost cooperation since the information I get will be highly confidential and will only be used for research purposes and nothing else. The information gotten will be discarded carefully the moment I conclude my findings. Looking forward for your support and cooperation. Thank you in advance.

Yours Faithfully,

Samson Opata Muyanda,

L50/85877/2016.

Appendix II: Questionnaire for Respondents

Kindly respond to all the questions to the best of your knowledge. Responses should be in form of a tick (√) or a cross (X) and should be placed in the appropriate box matching your view of the stated issues. Alternatively, or where necessary, please write the responses in the Spaces provided.

Be assured that this information will only be used for academic purposes and utmost confidentiality will be ensured.

PART A: GENERAL INFORMATION

1. Gender of respondent Male Female

2. Age category of respondent

Up to 24 years 25 to 34 years 35 to 44 years 45 to 54 years Over 55 years

3. Highest level of education

KCSE Certificate Diploma Bachelor's degree Postgraduate degree

4. What is your job level?

Lower management Middle Management Top Management

5. How long have you worked with the organization?

Less than 5 years 6-10 years 11-15 years 16-20 years More than 20 years

6. Department of employment

Procurement department

Finance department

Operations management department

Administration department

Stores department

PART B: CONTRACT MANAGEMENT

Please indicate the extent you agree with the following contract management statements by marking in the appropriate boxes on a scale of 1-5 where, 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree

S/No.	Statements	SD	D	N	A	SA
1	Contract management affects fast or timely completion of the project					
2	The degree of execution of the project is affected by how the contract management is done					
3	The way in which contract management is done have a bearing on the cost of the entire project					
4	Managing contracts during project management improves the quality of the whole project					
5	Monitoring the project to ensure terms and conditions are adhered to affect success project completion in a positive way.					

PART C: BIDDING

Please indicate the extent you agree with the following bidding statements by marking in the appropriate boxes on a scale of 1-5 where, 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree

S/No.	Statements	SD	D	N	A	SA
1	Our organization obtain project supplies through competitive bidding					
2	Bidding process takes significant amount of time affecting project completion					
3	A lot of finances are dedicated towards bidding process					
4	Significant benefits to the project results from the investment made in bidding					
5	Bidding contributes to improved quality of project supplies					
6	Quality objectives are attained as a result of bidding for project supplies					

PART D: PROCUREMENT PLANNING

Please indicate the extent you agree with the following procurement planning statements by marking in the appropriate boxes on a scale of 1-5 where, 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree

S/No.	Statements	SD	D	N	A	SA
1	Our organization project management team prepares periodic procurement plan					
2	The procurement plan ensure availability of materials when need throughout the project life cycle					
3	Availability of materials ensures timely completion of the project					
4	Having a procurement plan leads to cost saving due to purchase of materials at the right time and from the right sources					
5	Procurement plan leads to improved quality					
6	Procurement plan is recommended to any project team					

PART E: PROJECT SCHEDULING

Please indicate the extent you agree with the following project scheduling statements by marking in the appropriate boxes on a scale of 1-5 where, 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree

S/No.	Statements	SD	D	N	A	SA
1	When handling projects in our organization, timescale and sequence of activities is done					
2	Having timescale and sequence of activities helps in proper management of project time					
3	Project scheduling reduces the general cost of the project					
4	Quality of the project is affected positively by the project scheduling					
5	Our organization uses Gantt charts, PERT and critical path methods in project scheduling					

PART F: COMPLETION OF PUBLIC PROJECTS IN ENERGY SECTOR

Our organization has achieved the following essentials of project completion because of procurement function involvement on a scale of 1-5 where, 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4= Agree and 5= Strongly Agree

S/No	Statements	SD	D	N	A	SA
1	Timely completion of projects					
2	Projects completed within budgets					
3	Quality completion of projects					

THANK YOU