

**INFLUENCE OF PROJECT MANAGEMENT PROCESSES ON  
PERFORMANCE OF KENYA POWER LAST MILE CONNECTIVITY  
PROJECTS IN NAKURU COUNTY, KENYA**

**BY**

**FRANCIS XAVIER KWEYU**

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The Degree Of Master Of Arts In Project Planning And Management Of The University Of  
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## **DECLARATION**

This research project is my original work and has never been presented for a degree or any other award in any other University.

**Signature .....**  
**FRANCIS XAVIER KWEYU**  
**REG: L50/6045/2017**

**Date .....**

This project has been submitted for examination with my approval as the University Supervisor.

**Signature .....**  
**PROF. HARRIET KIDOMBO,**  
**ODEL CAMPUS,**  
**UNIVERSITY OF NAIROBI**

**Date .....**

## **DEDICATION**

This work is dedicated to my wife Jesicah Kweyu who has supported me both morally and financially in the undertaking of this research project and the degree course work in general. I also wish to acknowledge my two children Valentine and Victor Kweyu who have persevered the long hours that I have been away in pursuit for postgraduate qualifications.

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## **ABBREVIATIONS AND ACRONYMS**

<b>CDF:</b>	Constituency Development Funded
<b>FESL:</b>	Ferdsult Engineering Services Limited
<b>ICT:</b>	Information and Communication Technology
<b>NACOSTI:</b>	National Commission for Science, Technology and Innovations
<b>PDO:</b>	Project Development Objective
<b>SPSS:</b>	Statistical Package for Social Sciences
<b>USD:</b>	United States Dollars

## ABSTRACT

Electricity connection projects have faced diverse performance challenges across the world. Amongst the challenges were lack of increase of number of customers satisfied with the electricity services, and unsatisfactory numbers of meters that had been installed. Kenya last mile electricity connection project has continued to face diverse performance challenges. The last mile project has also been hit by procurement challenges which derail its implementation. This study seeks to examine the manner in which project management processes influences Performance of Kenya power last mile connectivity project in Nakuru County. The objectives of this study were to examine the influence of project initiation, project execution, project planning and project control processes on the success of last mile project performance. The study is based on the Open Systems Theory. The study was based on the descriptive research design and the target population consists of five departmental heads of the Design Department, Customer Service Department, technical teams, finance and supply chain departments and 148 Kenya Power staff. The data was collected using interviews, and research questionnaires. To ensure the validity of the interview guide, the study utilized expert review team to evaluate of the questions contained in the interview guide and research questionnaire. In order to make sure that the data gathered for this study is reliable, the study used data triangulation approach and Cronbach's Alpha based on a pilot study. Descriptive statistics was done to describe basic characteristics of the data whereby frequencies, means and standard deviations were used. For qualitative data analysis, the researcher typed all the responses given through interview guides and also transcribed all the audios recorded during the interviews. The transcribed data was uploaded into Nvivo software version 11 for Document Content Analysis. The researcher then did thematic document analysis whereby major themes were presented in the research report. Additionally, Content Analysis of documents regarding Kenya Power Last Mile Connectivity Projects was done. The study findings was presented in form of tables and thematically in narrative form. In doing this research, the researcher observed all ethical considerations of research. In doing this research, the researcher observed all ethical considerations of research. The researcher informed the study respondents the purpose of the study before they participate in the study. Participation in the study was voluntary and no respondent was forced to participate in the study. The respondents' identity was kept anonymous whereby their identity was coded as Respondent A, Respondent B, and so on. Permission for data collection was obtained from National Commission for Science, Technology and Innovations (NACOSTI). The researcher sought for permission to access secondary data from Kenya Power that was used for document analysis. The study found out that there is statistically significant influence of project initiation, planning, execution and project control aspects on Performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. The following multiple regression model was arrived at;  $Y = 0.179 + 0.250X_1 + 0.208X_2 + 0.213X_3 + 0.238X_4 + 0.10249$ , where;  $X_1$  = Project Initiation Process,  $X_2$  = Project Planning,  $X_3$  = Project Execution and  $X_4$  = Project Control. The regression model had an R Square value of 0.802, which indicates that 80.2% of the variation in performance of Kenya power last mile connectivity projects in Nakuru County can be explained by project initiation, project planning, project execution and the project control. The model has a statistically significant predictive capability as shown by  $F(4, 120) = 121.295$ , p-value less than 0.05. In addressing Performance aspects of Kenya Power Last Mile Connectivity projects, the study recommendation Kenya power to first consider project initiation aspects, followed by project control, execution and lastly project planning aspects. This study is of great importance to the project managers of Kenya power last mile connectivity projects in ensuring proper expectations are set around what can be delivered, by when, and for how much in project initiation process. This study will also help managers in planning and executing Kenya power last mile connectivity projects through setting achievable deadlines and milestones across stakeholders. The findings and recommendation of this study will help Kenya Power to address issues posing a threat to achieving the set objectives of Kenya power last mile connectivity projects. Furthermore, future researcher in the subject area will form the basis of their studies from the findings of this particular study.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the Study**

Understanding of project management process is guided by understanding the concept of a project. A project has been perceived as a set of interrelated activities or tasks that are undertaken within a specified period, resources and costs in order to achieve a specific objective, product, service or results. A project is often characterized by scope, resources, time, quality, and risk aspects. The scope of the project identifies what is to be covered by the project in terms of the potential benefits of the project, and geographical scope amongst other considerations (Nyabera, 2015). The resources component of the project details the resources that was utilized during the project implementation including people, technology, and financial resources amongst others. The time aspects details a specific timeline for the project undertaking including the start of the project and end of the project (Nyabera, 2015). Project management process is composed of four aspects that is project initiation, project planning, project execution and project control amongst other aspects.

According to Justin, Mbabazize, & Zenon (2016) project initiation involves the creation of guidelines to assist in project management through identification of key components of projects and determination of necessary steps to achieve set project objectives. Amongst the aspects determined at the project initiation level include timelines for project execution, definition of the problem to be solved, and proposed solution of the problem (Nyabera, 2015). Other aspects include identification of internal and external stakeholders including their engagement and consideration of their opinions.

Project planning involves the organization of diverse components of the project with a view of making the project management process a success (Mukhwana, 2013). Amongst the aspects that need organization include diverse tasks or activities that need to be undertaken in the project, the work load distribution amongst the human resources available, procurement aspects and the timelines of diverse activities (Nyabera, 2015). Project planning must also illustrate the dependencies within diverse tasks and activities with a view of identifying a critical path that must be followed to achieve project objectives as soon as practically possible. Project planning assists with the actualization of the project management aspects.

Project implementation involves the actual actualization or achievement of the project planning and initiation processes in order to achieve the desired project deliverables. This phase involves the allocation of resources on the ground to achieve the project objectives, the coordination of diverse functions on the ground, and addressing arising aspects within that coordination. Finally, the project control aspects include aspects of collecting information about the project with a view of

enabling the management in gaining an understanding and making decisions in relations to time and costs aspects of the project amongst other factors (Mukhwana, 2013). Project control has also been examined as all the actions that are undertaken by project managers in the uncertain project implementation stages to ensure that the project is on course in relations to its mandates and objectives, timelines and cost implications. Project control includes aspects such as communication, corrective actions taken and stakeholder managements amongst other aspects (Nyabera, 2015).

Performance of the electricity connection and expansion has been a challenge across the world. In Kyrgyz republic, there are noted performance challenges with electricity supply accountability and reliability project that is funded by World Bank to the tune of US\$25 million commencing from 2014 (World Bank., 2018a). The project aimed to improve performance and reliability of electricity supply to Bishkek, Chui and Talas regions. The project was being undertaken by the state owned electricity company; Severelectro JSC. However, the World Bank in its ratings of the project's performance on 26<sup>th</sup> of December, 2017 rated it as moderately satisfactory and moderately unsatisfactory in relations to progress towards achievement of Project Development Objective (PDO) and Overall Implementation Progress respectively (World Bank., 2018a). Amongst Performance challenges that were noted and that led to Performance rating of the project as moderately unsatisfactorily were electricity losses per year at 22% against a target of 18%.

Performance of electricity connectivity projects were also noted in Philippines. The World Bank funded a rural electrification project to the tune of 16.7 United States Dollars with the project commencing in 2003 and ending in 2012 (World Bank., 2012). The purpose of the rural electrification project was expansion of electricity access to the rural communities within the country. At the completion of the project in 2012, several factors were used by the World Bank to rank Performance of the project. These factors included achievement of Project Development Objective (PDO), overall implementation progress, and overall completion outcomes. These factors were rated moderately unsatisfactory for both Project Development Objective (PDO), and overall implementation progress and moderately satisfactory for overall completion outcomes (World Bank., 2012).

In Uganda, the electricity connectivity projects have also faced challenges similar to those in other parts of the world. In 2017, Ferdsult Engineering Services Limited (FESL) which was a private company contracted to connect electricity in the rural areas discontinued electricity supply to seven districts in western Uganda (Wesonga, 2017). Amongst Performance challenges that FESL found was inability of the electricity connection being cost effective. The company was unable to pass its operating costs to its customers. The company failure to connect people within the rural set was attributed to its high connection fees (Wesonga, 2017).

Kenya has undertaken several electricity connectivity projects in the past few years which have been chiefly funded by the World Bank and Africa development bank. These projects have enjoyed diverse performance ratings during periodic performance reviews (World Bank., 2018b). For example, Kenya Electricity Modernization Project that is World Bank funded commenced in March 31 2015 and is scheduled to end in June 30, 2020. The project that is funded to the tune of 562 US dollars aims at increasing access to electricity, improving reliability of electricity service and strengthening Kenya power financial situation. The latest rating of the project dated first of February, 2018 indicated that the project was satisfactory towards achievement of PDO and progress towards completion of the project (World Bank., 2018b).

## **1.2 Statement of the Problem**

The electricity connection projects have faced diverse performance challenges across the world. In Kyrgyz Republic, the electricity supply accountability and reliability project valued at US\$25 million was rated as moderately satisfactory and moderately unsatisfactory in relations to progress towards achievement of Project Development Objective (PDO) and Overall Implementation Progress respectively (World Bank., 2018a). Amongst the challenges were lack of increase of number of customers satisfied with the electricity services, and unsatisfactory numbers of meters that had been installed. In Philippines, the rural electrification project to the tune of 16.7 United States Dollars was rated as moderately unsatisfactory for both Project Development Objective (PDO), and overall implementation progress and moderately satisfactory for overall completion outcomes (World Bank., 2012). In Uganda, Ferdsult Engineering Services Limited (FESL) discontinued the supply of electricity to rural western Uganda due to inability to pass its operating costs to its customers. The company failure to connect people within the rural set was attributed to its high connection fees (Wesonga, 2017).

Kenya Power is undertaking the last mile project with an aim of extending power supply connectivity to over 1.2 million customers. These customers are spread over the country and within the vicinity of existing 45,000 distribution transformers. The targeted customers need to be within 600 meters of the transformer. The project objectives include over 300,000 new electricity connections, construction of low voltage distribution lines, and improvement of Kenya power expertise capacity in electricity supply management aspects. The financiers of the last mile project are African Development Bank and the Government of Kenya to the tune of 13.5 billion shillings. The project is being undertaken in three phases that is phase 1 being the extension of electricity supply to customers within 600 meters of transformers, phase two being the installation of half a million new transformers and phase three being the extension of electricity supply within these installed transformers. The second and third phase of the project are estimated to reach over two and a half million kenyan.

Kenya last mile electricity connection project has continued to face diverse performance challenges. Kenya power in March of 2017 indicated there was a challenge in ability of customers to load tokens in their meters. This affected upto 940, 668 customers. The last mile project has also been hit by procurement challenges which derail its implementation In 2018, CCC international contested the awarding of a tender of building and installation of electricity to seven counties to Bajaj Electricals and Wayne Homes. The seven counties were Nandi, Kakamega, Bungoma, Nakuru, Samburu, Laikipia and Nyeri. The economic viability of the last mile project has been raised. This is due to the fact that some of the connections have been done on semi permanent houses and the customers being connected without having fully paid the requisite Ksh 15,000 which they pay in installments . This has the capacity of increasing the monthly payments. This study seeks to examine the manner in which project management processes influences Performance of Kenya power last mile connectivity project in Nakuru county.

### **1.3 Purpose of the Study**

The purpose of this study was to examine the influence of project management processes on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.

### **1.4 Objectives of the Study**

This study was guided by the following research objectives;

1. To examine influence of project initiation on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.
2. To establish the influence of project planning on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.
3. To examine the influence of project execution on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.
4. To examine the influence of project control on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.

### **1.5 Research Hypotheses**

The study was carried out to answer the following research questions;

1. **H<sub>01</sub>**: There is no statistically significant relationship between project initiation and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.
2. **H<sub>02</sub>**: There is no statistically significant relationship between project planning and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.
3. **H<sub>03</sub>**: There is no significant relationship between project execution and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.
4. **H<sub>04</sub>**: There is no significant relationship between project control and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.

## **1.6 Significance of the Study**

The research findings and its recommendations are likely to help Kenya power in better performance on their last mile connectivity projects. The project managers of Kenya power last mile connectivity projects will stand to benefit from this study in ensuring proper expectations are set around what can be delivered, by when, and for how much in project initiation process. This study will help managers in planning and executing Kenya power last mile connectivity projects through setting achievable deadlines and milestones across stakeholders. Through the findings and recommendation of this study, Kenya Power was able to address issues posing a threat to achieving the set objectives of Kenya power last mile connectivity projects.

Through the established influence of project management process on project performance by this study, Kenya Power was able to effectively monitor the progress of the project and therefore be able to fulfil the project goals. Kenya power customers will enjoy improved service delivery because of this study. Furthermore, future researcher in the subject area will form the basis of their studies from the findings of this particular study.

## **1.7 Limitations of the Study**

The study faced some limitations in carrying out this study. However, the study outlines possible ways to overcome limitations. The study was challenged in its data collection process due to the nature of work deliverables of Kenya power last mile connectivity projects staff. This led to data collection delays as the staff were busy delivering their duties in the field. In overcoming this limitation, the researcher sought appointment from Kenya Power Staff for data collections prior to the actual date of data collection.

## **1.8 Delimitations of the Study**

There are several factors that may influence Performance of Kenya power last mile connectivity projects but this study was delimited in content scope to only four project management processes namely; project initiation process, project planning, project execution and project control. The geographic scope of the study was Nakuru region and the study examined the factors influencing last mile project performance within Nakuru County. The budget scope of the study was Ksh 83,000 since the study is self-funded.

## **1.9 Basic Assumptions of the Study**

The study assumes that the respondents were cooperative, answer questions correctly and objectively. The study also assumed that the research instruments used correctly measured what the study intends to measure. Validity and reliability of the research instruments was ascertained before using the instruments for the study.

## **1.10 Definition of Significant Terms**

**Performance** Refers to the ability of completing Kenya power last mile connectivity projects



on time, within the budget allocation and on scope.

<b>Project Control</b>	This relates to the measures put in place with a view of ensuring that the project objectives are met
<b>Project Initiation</b>	The process of defining project objectives, scope, intended purpose and expected deliverables
<b>Project Execution</b>	The process through which the project activities and plans commence on the ground with a view of achieving project objectives
<b>Project Planning</b>	The set of processes performance to establish the total scope of effort, define and refine the objectives, and develop the course of action required to attain those objectives
<b>Project Management</b>	This refers to initiation, planning, execution and control process of Kenya power last mile connectivity projects.

### **1.11 Organization of the Study**

Chapter one covers background of the study, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, delimitation and limitation of the study, basic assumptions of the study, definition of significant terms used in projects and organization of the study. Chapter two covers literature review, outlines relevant theories of project management, knowledge gap and summary of the literature review. Chapter three covers research methodology with the following subtopics; introduction, research design, target population, sample size and sample selection, research instruments, data collection procedures, data analysis technique and ethical considerations. Chapter four of the study contains the data present data analysis and presentation. The chapter examined the analysis of the collected data and present the results into tables and narrative forms. Chapter five constitutes the summary, conclusion and recommendations of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Chapter two presents literature review. This chapter reviews the empirical literature on project initiation, project planning, project execution and project controls and how they influence Performance of projects. The chapter also reviews the applicable theories for this study. In this chapter, the conceptualization of study variables is done to depict the possible association of the variables. The knowledge gap to be filled by this current study as well as the summary of the reviewed literature is also presented in this chapter.

#### **2.2 Project Initiation Process and Project Performance**

In Finland, Aapaoja (2014) undertook a metadata analysis to examine the role of project initiation in project performance aspects. The study noted that in Finland, the purpose of project initiation process included evaluation of the project's feasibility and suitability from diverse project stakeholders.

In a study based in Zambia, Mkuni (2016) sought to examine the role of project initiation in the completion of road construction projects in the country. The study conceptualized the project initiation process as the process of defining project objectives, scope, intended purpose and expected deliverables. Mkuni (2016) indicated that project initiation aspects that influenced project performance included stakeholders involved in project initiation aspects. In this context, the study found that 60% of the road construction projects were initiated by the politicians. The study noted that the politicians initiated projects owing to their political influence of key decision makers within the government. Mkuni (2016) indicated the huge influence of the politicians in project initiation in Zambia led to undermining the viability of some projects as advice from experienced technocrats was sometimes not considered. Other project initiation factors that influenced project implementation success included 40% of respondents indicating that undertaken projects were not in accordance to the development strategic plans raising possibilities of projects not being a priority for the target beneficiaries.

In Rwanda, Justin, Mbabazize, & Zenon (2016b) examined the role of project initiation on project success within Rwandan health services. The study conceptualized project initiation as the creation of sound guidelines for project management and determination of steps to follow in implementation of those projects. In this context, amongst the aspects that are identified include timelines and persons in charge of diverse steps in project management aspects. Using a sample size of 86 respondents, the study found a weak but positive correlational relationship between project initiation and project success at a correlation of 0.449.

In a study based in Kenya focusing on project initiation process on project performance, Kahindi, (2014) conceptualized project initiation as the laying of foundation for everything that falls in place systematically as per the structure of the project. The study sought to examine the factors influencing project initiation in respect to the bible translation projects at the coast region. To achieve its objectives, the study utilized a mixed methodology with both qualitative and quantitative data collection methodologies. A sample size of 360 respondents composed of church leaders, area chiefs and bible translation staff were utilized for the study. Using frequency distribution, the study found that financial resources, stakeholder participation, and technical expertise were critical aspects of project initiation phase.

The role of project initiation on project performance was further examined by Nkatha (2014) in a study focusing on completion of construction projects in Korogocho slums. The study adopted a descriptive survey research design and a target population of 380 respondents derived from Korogocho dwellers. The study by Nkatha (2014) used structured questionnaires for the purposes of data collection aspects. The study found that the project initiation phase influenced project implementation through stakeholders attendance of project initiation meetings and participation in the project initiation phase. In this context, Nkatha (2014) found that upto 76% of the respondents participated in the project initiation phase. The author further indicated that 74% of the respondents were knowledgeable on the project details and the objectives of the project.

Using schools in Nyeri County, Maina (2009) study sought to examine the role of project initiation on success of academic improvement projects in the county. Similar to Kahindi (2014), the study conceptualized project initiation phase to involve definition of the project scope aspects. Using frequency distribution means of analysis, the study found that only 11% of the stakeholders were involved in the project initiation phase. Using correlational analysis, the study found a positive correlational coefficient of 0.801 between project initiation and project performance success that was significant at 0.01 level of significance.

### **2.3 Project planning and Project Performance**

Focusing on Canada, Serrador (2013) undertook a literature review of the role of project planning on the project performance in the country. The study conceptualized the role of project planning on project performance in terms of the time and resources spent on project planning aspects. The study utilized a metadata analysis methodology in which a total of 280 papers and books were examined and reviewed. In conceptualization of the project planning, Serrador (2013) is the set of processes performance to establish the total scope of effort, define and refine the objectives, and develop the course of action required to attain those objectives. The study noted that how much to plan in an extremely dynamic environment have an influence on project performance.

The study notes that there should be a balance between too much planning and too little planning aspects.

In the United States of America, Escamilla (2011) examined the role of project management planning on project performance with a focus on the renovation of historical buildings in Texas. The study utilized a sample size of 75 project management teams from the renovation of diverse historical buildings in Texas. Amongst the planning aspects that were examined included planning for budgets, performance, satisfaction, and time management aspects. The study results indicated that budget planning was the item that was first ranked in respect to its impact on project performance with 20% strongly agreeing and 40% agreeing with the metric. The planning aspects for performance had 30% of the respondents strongly agreeing with 40% agreeing with the importance of the metric towards project performance. In respect to time, project planning was indicated by 50% as a critical component leading to project performance.

Marren (2016) in a study focusing on health projects in Gedo Region, Somalia sought to examine amongst other aspects the role of project planning on project performance. Using a sample size of 50 respondents derived from world vision staff undertaking the health projects in Somalia, the study sought to find diverse ways in which project planning influences project performance. In response to the question as to whether, project planning enables effective project implementation determination 96% of the respondents indicated affirmative to the question. This indicated that a majority of the respondents felt that the project planning aspects were critical in the project implementation phase. Using a five point likert scale (5 – Great Extent, 4 – Moderate Extent, 3 - Neutral, 2 – Low Extent, 1 – No Extent), the study sought to find the extent to which the project planning aspects influenced project implementation aspects. In this context, the study found that diverse extents of project planning aspects influenced project performance at Gedo region in Somalia. These aspects included speed in deployment of project resources (mean of 2.22), ease of project staffing (mean of 4.51), adequacy of scheduling (mean of 2.19), and impact on project stakeholders understanding of project timelines (mean of 3.22). Using correlational analysis, the study revealed that project planning has a correlational coefficient of 0.625 with project implementation aspects which was significant at 0.01 level of significance.

The project planning has an impact on the project performance. According to Sefhemo, (2016) in a study focusing on project implementation in public sector in Botswana, the project planning phases involves the detailed planning of diverse aspects of project implementation phase. These components include aspects such as resources, financial aspects, quality control, risk management, communication, and procurement aspects. In the metadata analysis paper, Sefhemo, (2016) noted that project planning phase helps in project performance through defining how major tasks in the project implementation aspects was undertaken, the resources that are required , project

control mechanisms, identification of possible risks in project implementation, and technical expertise required for the project to be undertaken.

In a study focusing on building contractors project implementation, Nyaga (2016) examined the project planning aspects influence on project performance within the building industry. A descriptive research design was adopted by the study and a mixed methodology adopted by the study. Using a five point likert scale to measure the extent of usage of diverse planning softwares, Nyaga (2016) study revealed low usage of planning software. In this context, the study found that amongst the softwares utilized for planning purposes included Microsoft project (mean of 2.47), Enterprise Resource Project (mean of 1.48), Primavera (mean of 1.48), Power Project (Mean of 1.47), and PMSystems (1.17). This demonstrates poor usage of ICT resources for the purposes of planning aspects within the construction process.

The role of project planning on project performance was further examined by Njuguna, (2012) in a study focusing on Kazi Kwa Vijana projects in Kenya. The study conceptualized project planning to include diverse aspects such as selection of planning team, creation of work breakdown structure, and identification of set of activities needed complete given project milestones. Other activities included estimation of resources requirements for the project activities, estimation of time and cost expenditure, schedule development, and budget consideration amongst others (Njuguna, 2012). Using a sample size of 93 respondents derived from Youth groups in Githunguri, the study found diverse ways in which project planning influenced project performance. The study found that 44% of the respondents strongly agreed that project planning led to improved project performance. A further 32% of the respondents indicated that lack of work breakdown structure during project planning phase led to project failure.

In the construction industry, Ogero (2014) examines the role of project planning on project performance aspects. The study utilized a target population of 98 construction firms and a structured questionnaire for the purposes of data collection aspects. The study examined the project planning management tools utilized within the industry. Using a five point likert scale, the study found that amongst the project planning tools utilized included work breakdown structure (mean of 3.409), resources estimation (mean of 3.426), overall schedule (mean of 3.000), and Gantt schedule (mean of 3.573).

## **2.4 Project execution and Project Performance**

In Bangladesh, Ullah (2014) undertook a study that examined the role of project execution on Performance of construction projects in the country. The study administered structured questionnaires to 24 respondents derived that consisted of engineers in the public work construction industry. The study results revealed that procurement aspects within the project execution was

found to influence project performance aspects. The lengthy the process of procurement aspects the longer project performance took.

In the United Kingdom, Reddan (2015) examined the role of project execution on project performance aspects. The study administered questionnaires to 48 respondents composed of project managers. The study revealed the programs utilized for the purposes of project executions included flow charts, checksheets, and control charts. The study results further revealed quality management plan as being important in project implementation with upto 80% indicating that it is important.

In a study focusing on the project execution within healthcare projects in Ogaden, Somalia, Marren (2016) examined the factors influencing the project execution aspects. The study utilized a descriptive survey research design and a target population of 55 respondents composed of world vision employees working in Ogaden area of Somalia. A structured questionnaire was utilized for the purposes of data collection aspects. The study utilizing a five point likert scale (5 – Great Extent, 4 – Moderate Extent, 3 - Neutral, 2 – Low Extent, 1 – No Extent) found that diverse aspects influenced project execution aspects to a moderate and great extent aspects. Amongst these aspects include timely provision of funds for project implementation (mean of 2.43), staff project relations (mean of 2.17), systemic and efficient implementation efforts (mean of 3.81), timely project control feedbacks (mean of 2.11), and corrective measures being undertaken (mean of 4.46). In the context of project implementation aspects, Marren (2016) indicated that the aspects that were considered critical indicators for project implementation aspects included project product delivery (mean of 3.02), budget delivery (mean of 4.57), time delivery (mean of 3.42), and project product quality (mean of 4.44).

In a study focusing on Non Governmental Organizations in Nairobi, Too (2015) examined the project implementation factors within the NGO projects. Using a five point likert scale, the study revealed diverse project implementation considerations within the NGO projects in Nairobi. These aspects included completion of projects within stipulated timelines (mean of 2.91), projects costs being within budgeted amounts (mean of 2.73), quality of implemented projects (mean of 2.68), and satisfaction of the targetted beneficiaries of the project (mean of 2.68). This indicated that the respondents are moderately satisfied with the project implementation aspects. The study utilized a sample size of 121 respondents derived from the NGO staff within Nairobi and utilized structured questionnaires for data collection purposes.

Using government initiated community projects, Obiero (2017) undertook a study that sought to examine the manner in which project implementation aspects influenced community projects. To achieve its objectives, Obiero (2017) used a descriptive research design and a sample size of 100 respondents composed of diverse government officials involved in government initiated community projects. Using a five point likert scale, the study zeroed in on the role of financial

management aspects on project implementation aspects. Amongst the aspects that were examined included timely payments of contractor's payments (mean of 3.319), timely payment of site workers (mean of 2.68), timely payments of suppliers (mean of 3.13), and timely disbursement of funds (mean of 3.27). These factors were found important in order to prevent delays in implementation of projects and the smooth project work flow aspects. Using correlational analysis, the study found that there was a positive correlation of 0.691 between financial management aspects and project implementation aspects. Obiero (2017) further noted that other aspects that influenced project implementation aspects included project stakeholder coordination aspects during project execution aspects (mean of 2.52), and change management aspects within project implementation (mean of 3.56).

The role of project execution on Performance of a project was further examined by Muchiri (2014). He examined the role of project execution aspects on project performance of CDF projects in Kirinyaga county. With a view of achieving its objectives, the study utilized a descriptive research design and a sample size of 100 respondents composed CDF projects beneficiaries. Using a five point likert scale measurement, the study found diverse ways in which the project execution impacts on project performance. These aspects include meeting deadlines during project implementation (mean of 4.86), coordination of people and resources during project implementation (mean of 4.82), and activities coordination during project implementation (mean of 4.00). This indicated that the respondents agreed with the project execution aspects being influential on the project performance aspects. Using correlational analysis, the study also found a positive and significant relationship between project implementation aspects and project performance as measured using timely completion of projects. The achieved correlation coefficient was 0.523 which was significant at 0.01.

## **2.5 Project control and Project Performance**

In Myanmar, Salleh, Kajewski, & Yang (2009) in a study focusing on the construction of dams examined the manner in which project control impacted on the project performance. The study administered questionnaires to 96 respondents composed of project managers from NGOs, government and private projects. The study results indicated that a majority of 57% of the respondents strongly agreed that systematic control over project execution impacted on project performance. A further majority of 61% of the respondents strongly agreed that monitoring and controlling of project work influenced its success. On the other hand, 30% and 65% of the respondents indicated that they agreed and strongly agreed that quality control measurement influenced project performance.

Project control has been noted by diverse scholars to be an integral component of project performance aspect in Canada. Montaser (2013) undertook a study to examine the ways in which

project control can be undertaken. The study noted that project control starts with the project schedule creation after a detailed Work Breakdown Structure has been conceptualized. Montaser (2013) noted that amongst the aspects involved in project control include tracking of time used in project implementation through use of schedules. Other aspects that are tracked included expenditures and scope accomplishments against the set performance targets. The study was a metadata analysis of the other researchers' work and was thus limited in the generalizability of its findings.

In Sudan, Alex (2014) undertook a study that examined the role of project control with a focus on projects within Caritas Torir county. The study utilized a sample size of 146 respondents drawn from a population of 1464 residents of the Caritas Torir county who had benefited from diverse projects. In respect to the tools utilized in undertaking project controls, the study revealed that 8% of the respondents utilized performance indicators, 13% utilized cost benefit and cost effectiveness analysis, and 50% utilized a log frame analysis aspects while a further 17% utilized impact evaluation report.

In Ghana, Tamimu (2017) undertook a study that examined the role of project control on the water and sanitation projects in the country. The author used a mixed methodology in the study in which both the qualitative and quantitative data was collected. The study noted that the project owners relied on the reports from decentralized departments for the purposes of project controls on the ground. The collaboration between diverse stakeholders is also critical in the project control aspects within water and sanitation programs in Ghana.

Focusing on successful electricity installation, Kiarie (2017) examined the role of control and monitoring on the successful electricity installation within Nakuru region. The study utilized structured questionnaires to derive information from 100 respondents. Amongst the monitoring and evaluation processes that were found to influence successful electricity installation included monitoring of electricity installation process to ensure adherence to set timelines, scope of the exercise, set budgets, and customer satisfaction levels.

In Kenya, Makale (2013) examined project control within the context of contact center projects in commercial banks. The study identified aspects of project control to include information gathering about the project, communication aspects on any noted disparities during project implementation, analysis of causes of divergence from project objectives and project work flow examination. Using a sample size of 111 respondents drawn from construction firm heads, assistant construction firm heads, and operation firms in construction firms, Gitonga (2014) examined the role of project control on project implementation within construction firms in Mombasa, Kenya. The study conceptualized project control as the element that keeps the project on-track, on-time and



within budget which starts at the project initiation phase and ends at the post implementation examination phase.

Project control influence on project performance was also examined by Kamurua (2013) in a study focusing on projects within Ministry of Immigration, Kenya. The study using qualitative data methodologies and interview method of data collection found diverse ways in which project control influenced performance. The respondents drawn from diverse departments such as Accounting and Finance, Administration, Procurement, Human resource Information Communication Technology and Statistics that had been interviewed gave ways in which project control influenced performance. In this context, Kamurua (2013) indicated that the respondents noted that project's control enabled increase in efficiency of project management staff, increase in accountability of funds expenditure, and improvement in achievement of project objectives. The author noted that these aspects are achieved through the project control aspects assisting in helping the project managers to keep track of performance against set objectives and placing mechanisms for checking on project deviation from set objectives.

Using a likert scale based questionnaire, Lawrence (2013) examined the role of project control on the project implementation of irrigation projects in Meru Central District. The study found that the respondents tended to agree diverse project control aspects were undertaken due to the relatively high means that they scored in a five point likert scale. Lawrence (2013) study found that respondents on average tended to agree on physical verification being undertake as form of project control (mean of 4.53), regular project visits (mean of 4.50), regular group discussions (mean of 4.88), and review of achievements against set objectives (mean of 4.78). These results indicated that these components influenced irrigation project performance to a great extent within Meru central district. To achieve its objectives the study had utilized a sample size of 294 respondents derived from a target population composed of irrigation project members.

In a study focusing on Constituency Development Funded (CDF) projects, Nyakagwa (2016) examined the role of project control on the project implementations performance. The study was based on descriptive research methodology and a target of 200 CDF funded projects within schools. The study found that the project control tools utilized as indicated by respondents included performance indicators (14%), logical framework (22%), formal survey (28%), rapid appraisal (12%), and cost benefit analysis (24%). Amongst the aspects that were controlled included project information (16%), project progress (48%), project budget (24%), and project quality (12%).

## **2.6 Theoretical Framework**

The theoretical framework of the study was based on the Open Systems theory. The open systems theory was conceptualized by Karl Ludwig Von Bertalanffy for use in the biological sciences in 1928. The theory was further developed by Ross Ashby in 1956. The systems theory

examines the interrelationships between different parts within a system and the manner in which these interrelationships can be optimized in order to enhance the functioning of the system. Kwame, (2013) further indicates that the foundation of the systems theory is the interrelationship between the components of the systems and the function of the system and or sub systems within the system is influenced by diverse components within the system. The system does not work in isolation but exists in an environment that influences its functioning. These environmental aspects include diverse stakeholders. The systems theory assumes that all large organizations are comprised of multiple subsystems, each of which receives inputs from other subsystems and turns them into outputs for use by other subsystems.

The systems theory is applicable to this study in the context that project performance can be looked at as a system that is influenced by diverse components such as project initiation, project planning, project control and project execution aspects. These components are also influenced by diverse aspects within the environment that leads to time and cost expenditure as well as possible deviation from the set timelines, standards, and quality aspects. This is in line with diverse project management studies that have utilized systems theory in their works. These studies include Macharia (2014) in a study focusing on factors influencing women enterprise funds projects in Kajiado county. Kioko (2017) also used the theory in a study examining performance of Integrated Financial Management Information Systems project in Machakos County.

## **2.7 Conceptual Framework**

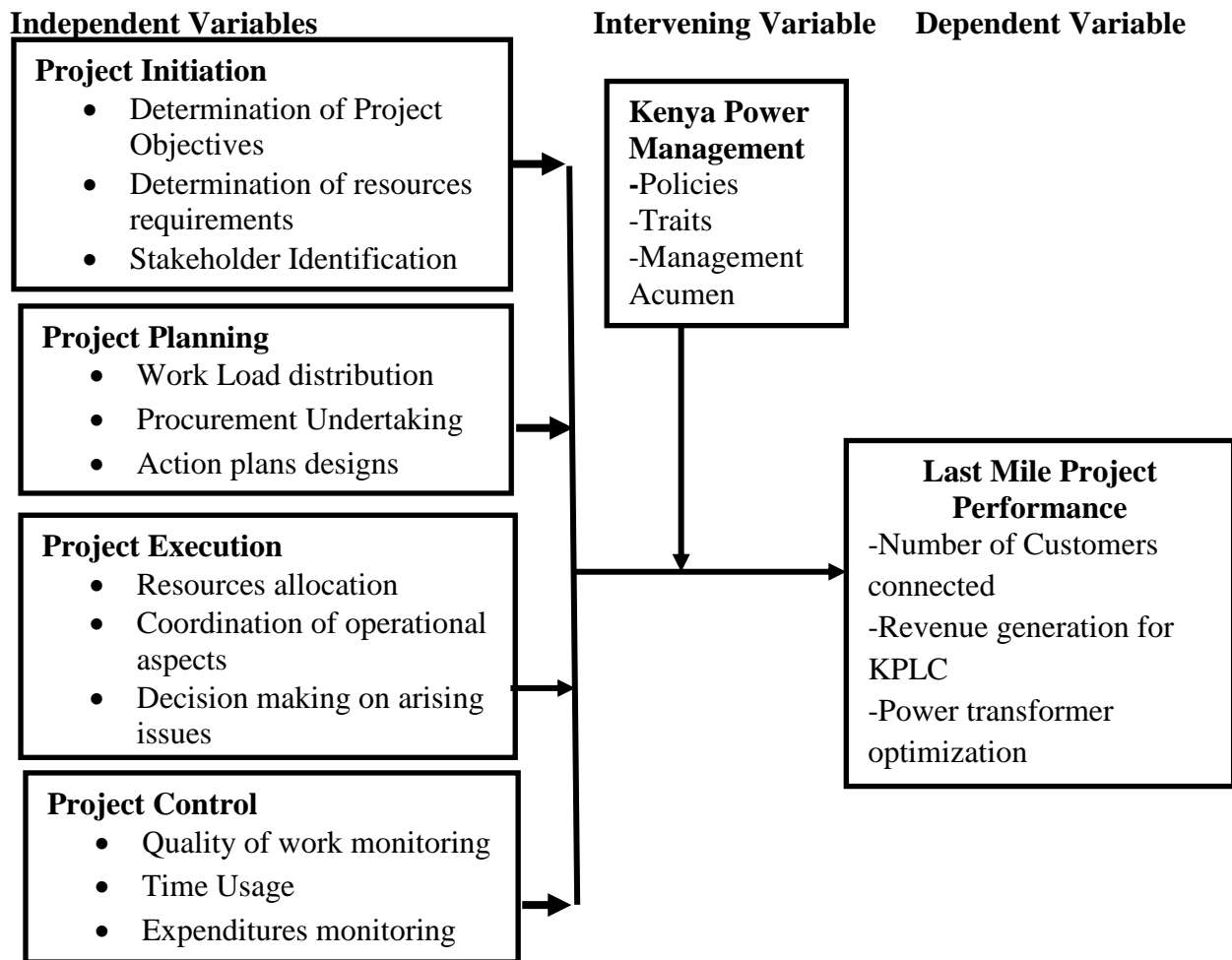
This section presents the conceptual framework formulated by this study to depict the possible associations of the study variables. Project initiation process, project planning, project execution and the project control was the independent variables for this study while Performance of Kenya power last mile connectivity projects in Nakuru County was the dependent variable. Figure 2.1 shows diagrammatic conceptualization of the variables and indicators.

The conceptual framework examines the interrelationship between the independent variables (project initiation process, project planning, project execution and project control) and the last mile project performance aspects which is the dependent variable. According to Justin, Mbabazize, & Zenon (2016) project initiation involves the creation of guidelines to assist in project management through identification of key components of projects and determination of necessary steps to achieve set project objectives. Amongst the aspects determined at the project initiation level include timelines for project execution, definition of the problem to be solved, and proposed solution of the problem (Nyabera, 2015). Other aspects include identification of internal and external stakeholders including their engagement and consideration of their opinions.. In respect to project initiation process the study utilized the following project initiation indicators that is determination of project objectives, determination of resources requirements and stakeholder identification. In respect to the

project planning the following indicators were examined the workload distribution, procurement undertaking and action plans designs.

Project execution involves the actual actualization or achievement of the project planning and initiation processes in order to achieve the desired project deliverables. This phase involves the allocation of resources on the ground to achieve the project objectives, the coordination of diverse functions on the ground, and addressing arising aspects within that coordination. Finally, the project control aspects include aspects of collecting information about the project with a view of enabling the management in gaining an understanding and making decisions in relations to time and costs aspects of the project amongst other factors (Mukhwana, 2013). In the context of the project execution, the indicators that were utilized include resource allocation, coordination of operational aspects and decision making on the arising matters.

Project control has also been examined as all the actions that are undertaken by project managers in the uncertain project implementation stages to ensure that the project is on course in relations to its mandates and objectives, timelines and cost implications. Project control includes aspects such as communication, corrective actions taken and stakeholder managements amongst other aspects (Nyabera, 2015). In the context of project control, the indicators that were utilized included quality of work monitoring, time usage and expenditure monitoring. Finally, the indicators for the last mile connectivity project include number of customers connected, revenue generation capacity for Kenya power and the power transformer optimization aspects. The intervening variable that was used in the study is Kenya Power Management aspects in which the policies of Kenya Power, traits of Kenya Power management and management acumen were the indicators of the variable.



**Figure 2.1: Conceptual Framework**

## 2.8 Knowledge Gaps

On project initiation process, a study by Kahindi (2014) only focused on frequency distributions which are quantitative in nature while this current study endeavored to provide in-depth details on project performance using qualitative approach. Nkatha (2014) focused on completion of construction projects in a slum area which presents a conceptual gap whereby this current study filled this gap by focusing on implementation process of projects in state owned corporation. Maina (2009) study presents a contextual research gap since the study was conducted among schools while this study was carried out in a state corporation. Similarly, a study by Mkuni (2016) presents a contextual gap in that the study was carried out in Zambia while this current study was carried out in Kenya.

Focusing on project planning, Sefhemo, (2016) carried out a research in Botswana which contextually presents a research gap that this study filled by looking at the situation in Kenyan Context. A study by Nyaga (2016) was done among building contractors which is different from this current study that obtained its data from electricity distribution company. Marren (2016) conducted a study on health projects in Somalia which presents a conceptual gap that this study

intends to fill by conducting a research in Kenyan Context. This study by Marren (2016) was quantitative while this study was qualitative and therefore more information was obtained in regard to project planning and performance. Similarly, studies by Njuguna (2012) focusing on Kazi Kwa Vijana projects in Kenya and Ogero (2014) focusing on construction industry were contextually different with this study.

The reviewed studies on project execution present several knowledge gaps. For instance, Marren (2016) study was done outside Kenya which opens a research gap for this study to be carried out in Kenya. Too (2015) concentrated on NGO projects who runs their projects different from State Corporation that was studied in this current research. Obiero (2017) and Muchiri (2014) on the other hand looked at how community projects and CDF projects respectively are implemented while this study looks at implementation of state projects which is broader in scope. These studies (Marren, 2016, Too, 2015, Obiero, 2017 and Muchiri, 2014) were all quantitative in nature while this study is qualitative in nature.

The available literature on project control identifies several research gaps that this current study intends to fill. A study by Kiarie (2017) examined the role of control and monitoring on the successful electricity installation projects which presents a conceptual gap in that the study did not focus on Performance of projects which is of interest to this study. On the same concept, Makale (2013) did a study on Contact Center Projects in commercial banks while this study focuses on Kenya Power projects. Similarly studies by Gitonga (2014) and Kamurua (2013) were all done outside the study area of this current study and also were done in different institutions from this current study. Studies by Lawrence (2013) and Nyakagwa (2016) are different from this proposed study in that they were quantitative in nature while this current study is qualitative in nature.

## **2.9 Summary of Reviewed Literature**

The reviewed literature indicated diverse ways in which project initiation, project planning, project execution and project control have influence on project performance. In respect to project initiation process, Kahindi, (2014) found that financial resources, stakeholder participation, and technical expertise were critical components in project initiation phase. On the other hand, Nkatha (2014) found that project initiation phase influenced project implementation through stakeholders attendance of project initiation meetings and participation in the project initiation phase. In Zambia, Mkuni (2016) indicated that the influence of politicians in road construction projects led to undermining the viability of some projects as advice from experienced technocrats were sometimes not considered. Within the context of project planning, Sefhemo (2016) noted that project planning phase helps in project performance through defining how major tasks in the project implementation aspects was undertaken, the resources that are required, project control mechanisms, identification of possible risks in project implementation, and technical expertise required for the project to be

undertaken. On the other hand, Njuguna (2012) indicated the project planning aspects influenced project performance through estimation of resources requirements for the project activities, estimation of time and cost expenditure, schedule development, and budget consideration amongst others.

Diverse scholars examined the aspects on how project execution imparted on project performance. In this context, Marren (2016) found that the project execution that impacted on project performance included timeliness of funds provision for project implementation, staff project relations, systemic and efficient implementation efforts, timely project control feedbacks, and corrective measures being undertaken. On the other hand, Too (2015) indicated that the project execution aspects influencing project performance included timelines and budget availability for the project execution aspects. Focusing on the financial aspects of project planning, Obiero (2017) indicated the planning aspects that influenced project performance included timely payments of contractor's payments, timely payment of site workers, timely payment of suppliers, and timely disbursement of funds. In respect to the influence of project control aspects on project performance, Montaser (2013) indicated that amongst the aspects that were controlled included tracking of time used in project implementation through use of schedules, expenditures and scope accomplishments against the set performance targets.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Chapter three presents the research methodology that was used in this study. The chapter covers the research design, target population, sample size and sample selection, research instruments, data collection procedures and analysis technique and concludes with a section on ethical considerations.

#### **3.2 Research Design**

As defined by Orodho & Kombo (2002), research design is the strategy a researcher uses to compile ideas and procedures in achieving the set objectives of a research. Mugenda & Mugenda (2013) defines research design as the blueprint that contains guidelines and procedures to use in data collection, analysis and reporting of findings. This study adopted descriptive research design for the qualitative data to be acquired through interview guides and correlational research design to be utilized for the quantitative data to be collected through the questionnaire.

Descriptive research design is an approach that accurately describes into details uncontrolled phenomenon or events in a population (Saunders, Lewis, & Thornhill, 2009). The phenomenon under study in this study are project initiation process, project planning, project execution and the project control. Descriptive research design is chosen for this study because of its capacity to provide detailed information even from a small sample size without manipulation as is the case in this study (Sekaran, 2003).

The correlational research design is utilized to examine the relationship between variables mostly between the independent and dependent variables in a study (Sekaran, 2003). The correlational research design utilizes diverse inferential statistical techniques to demonstrate relationships between the variables (Saunders, Lewis, & Thornhill, 2009). In this study, the regression analysis was utilized for the purposes of demonstrating relationships between independent variable and dependent variable.

#### **3.3 Target Population**

According to Kothari (2004) target population refers to all individuals belonging to a set group that contains characteristics of interest to a study. It involves elements, objects and people from which a researcher selects a sample from and the findings from the sample selected can be applied to the group (Orodho & Kombo, 2002). This study used a target population 236 respondents composed from staff from design and construction, finance, supply chain, marketing, technical services and customer service. These are the departments involved with the last mile project in Nakuru. These respondents were in a position to give detailed findings of the last mile

project performance in Nakuru as they comprise diverse departments involved in last mile project implementation in the county.

**Table 3.1: Target Population**

<b>Departments</b>	<b>Number of Staff</b>
Design and Construction	37
Finance	41
Supply Chain	22
Marketing	10
Technical Services	36
Customer Service	90
<b>Grand Total Staff-Regional Office</b>	<b>236</b>

Source: KPLC (2018)

### 3.4 Sample Size and Sample Selection

Sample size refers to the part of a population that is selected to take part in a study on behalf of the whole population and whose findings a generalization is made to the entire population (Saunders et al., 2009). A sample size bears similar characteristics with the target population from which the sample is taken from (Kothari, 2004). On the other hand, sample selection entails the procedures that are used in selecting a sample size that is a true representative of the entire population (Mugenda, 2003). The Yaro Yamane formula was utilized as follows;

$$n = \frac{N}{1 + N(E)^2}$$

Whereby;

n= desired sample size,

N=Target population

E= margin of error, given as 0.05 for 95% confidence interval.

The substitution of the population size led to a sample size of 148 being utilized as illustrated below;

$$n = 236 / (1 + 236 \times 0.05^2)$$

$$n = 148$$

### 3.5 Research Instruments

Research instruments are the tools that a researcher uses to gather data for a given study (Orodho & Kombo, 2002). This study used both primary data and secondary data. Primary data is the raw data or information collected by the researcher themselves from the field (Kothari, 2004). This study obtained its primary data by conducting interviews with the five departmental heads of the Design Department, Customer Service Department, technical teams, finance and supply chain departments. Interview refers to verbal conversation between the researcher and the respondent with an aim of obtaining relevant information about the objectives of the study ideas (Kothari, 2004). Interviews have advantage over other data collection tools in that from interviews, a



researcher is able to obtain detailed information about intrinsic factors such as feelings, perceptions and opinions. Interviews allow more detailed questions to be asked and also prevent researchers' imposition of researchers' ideas (Kothari, 2004). Mugenda (2003) adds that interviews are appropriate in helping to achieve high response rate as opposed to questionnaire. Using interviews the researcher obtained data on how project management processes affects performance of Kenya power last mile connectivity projects in Nakuru County, Kenya and also reasons behind the current status of the last mile project performance. The interview guide contained questions in regard to project initiation process, project planning, project execution and the project control.

The researcher gathered primary data from KPLC staff using closed-ended questionnaires also known as structured questionnaires. A structured questionnaire is a research tool that provides a list of all possible alternative responses to questions therein (Kothari, 2004). This type of data collection tool was used because it enables collection of data in a quicker way and enables a researcher to collect a quantitative data in a more efficient way. With structured questionnaire, the researcher does not need to be necessarily present during the data collection exercise (Mugenda, 2003). Structured questionnaires were used to complement the data that was obtained from interviews with key informants. The questionnaire was divided into six parts depending on the data sought in each part. The parts were named from A to F. Part A of the questionnaire gathered data on background information of the respondents. This part contained information in regard to gender, age, and experience among others. Part B sought to obtain information in regard to project initiation process while the Part BC of the questionnaire contained questions in respect to project planning. Part D of the questionnaire was based on project execution and the Part E on project control. The last part (Part F) of the questionnaire was on the dependent variable of the study whereby Performance of Kenya power last mile connectivity projects in Nakuru County was measured. The questions in part B all through part F of this questionnaire was measured using statements based on a five point Likert scale as follows; 0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent.

### **3.5.1 Piloting of the Study**

Piloting of the study is the undertaking of a small-scale study in similar conditions to the ones that was utilized in the final study for the purposes of examining the reliability and validity of the data collection instrument and examining factors that may hinder full realization of the research project objectives. Pilot study also helps researcher to familiarize with the study and adjust accordingly so that the actual study can be done more efficiently (Shirish, 2012). Mugenda and Mugenda (2003) recommends a pilot study to be done using at least 10% of the sample size and should be carried out among respondents who are not included in the actual study to avoid data contamination. In this study, the pilot study was carried out to ascertain the validity and reliability

of research questionnaires. The pilot study involved 15 respondents who comprised of staff in Kenya Power Naivasha office who bear almost similar characteristics with Nakuru County and therefore the office was appropriate in pilot-testing the study questionnaires.

The pilot study was also used to measure the validity and reliability of interview guides. In this particular study, the pilot study involved the examination of the interview guide to determine the set questions are indicative of the project initiation, planning, execution and control as practiced within Kenya power in the last mile connectivity project. The pilot study was undertaken using Kenya power departmental heads that was not be used in the final study.

### **3.5.2 Validity of Instruments**

Validity refers to the degree of accuracy of a research tool in measuring what the tools claims to measure (Upagade & Shende, 2012). If a research instrument is meaningful in measuring what the study intends to measure, then the instrument is valid for use in a research study (Kombo & Tromp, 2009). More simply put validity refers to trustworthiness of the instruments used to collect data (Mugenda & Mugenda, 2013). To ascertain whether the research questionnaire is valid, the study used Content Validity Index based on responses given by experts in the subject matter. Content Validity measures how close a measuring tool reflects the content in the construct (Upagade & Shende, 2012). The validation utilized the supervisor and experts who rated the relevance of the questionnaires in measuring the influence of project management processes on performance of Kenya power last mile connectivity projects in Nakuru County. The experts comprised of the research supervisor and four managers of Kenya power last mile connectivity projects. They measured the relevance of the questions based on the following scale; 0=Irrelevant, 1=Relevant, 2=Quite Relevant, and 3=Highly Relevant. Scale-level content validity index (S-CVI) was used to ascertain the validity of items measuring a latent variable cumulatively while Item to item level content validity index (I-CVI), was used to show the validity of each of the metric item measuring a latent variable. Saunders, et al., (2009) recommends an I-CVI of at least 0.5.

Expert review team was used in this study to evaluate the interview questions contained in the interview guide. Expert team review involves using individuals who are more knowledgeable on the subject matter to review the worthiness of the instrument (Sekaran, 2003). The researcher utilized the research supervisor and Kenya Power project team members. These experts helped in reducing ambiguity, misleading questions, emotive questions, stressful questions and any other insufficiencies of the interview questions and research questionnaires.

### **3.5.3 Reliability of Instruments**

Reliability in quantitative research refers to the ability of a research instrument to give consistent results each time. It refers to the degree in which results of measurement from a questionnaire can be trustworthy (Gall, Gall, & Borg, 2007). This study used Cronbach's Alpha to

test whether the research instruments are reliable using the data from the pilot study. Cronbach's Alpha coefficient of at least 0.7 is recommended by Mugenda and Mugenda (2003). The higher the value of Cronbach's Alpha coefficient, the more reliable the instrument is. This study obtained a Cronbach's Alpha coefficient 0.872 and therefore the research questionnaires were reliable for use in this study.

Reliability in qualitative research refers to the credibility of the study data (Mugenda & Mugenda, 2013). In order to make sure that the secondary data gathered for this study is reliable, the study used data triangulation approach. Data triangulation is the strategy of obtaining data from different sources (Upagade & Shende, 2012). The researcher interviewed departmental heads from the six different departments involved in Kenya Power Last Mile Connectivity Projects in Nakuru County.

### **3.6 Data Collection Procedures**

The researcher first obtained a letter of transmittal from the University of Nairobi. This letter contained the name of the researcher and also outline the purpose of the study. The letter urged the proposed study respondents to take part in the study and also assure them of their privacy in participating in the research study. After obtaining this letter, the researcher applied for permission to collect data at Kenya Power, Nakuru region from the National Commission for Science, Technology and Innovations (NACOSTI). Once permission was granted, the researcher went for an introduction visit to Kenya Power Nakuru offices to seek appointment for data collection. In addition, the researcher requested for relevant documents in writing. The letter for requesting for the secondary data clearly outlined the purpose for the study and the uses of the data requested. On the scheduled dates for data collection, the researcher distributed questionnaires to Kenya Power staff. The study adopted Drop and Pick questionnaire distribution method. The drop and pick (Upagade & Shende, 2012). On so doing, the researcher gave the respondents the questionnaire to fill and collect them after two weeks. The two weeks period was allowed in order to achieve high response rate.

The researcher will also conduct interviews with the with the five departmental heads of the Design Department, Customer Service Department, technical teams, finance and supply chain departments. During the interview, short notes were taken and audio recording was done for future referencing and transcribing. Respondents were assured that the data obtained from this study was to be used only for academic purposes.

### **3.7 Operationalization of the Variables**

This study's operationalization of the variables is presented in table 3.1 below.

**Table 3:2: Operational Definition of Variables**

<b>Objectives of the Study</b>	<b>Variables</b>	<b>Indicators</b>	<b>Measurement Scales</b>	<b>Type of analysis</b>	<b>Tools of Analysis</b>
To examine influence of project initiation process on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.	Project Initiation	<ul style="list-style-type: none"> <li>• Determination of Project Objectives</li> <li>• Determination of resources requirements</li> <li>• Stakeholder Identification</li> </ul>	Non Applicable	Likert scale; 0-4  Thematic Analysis Content Analysis	-Frequencies -Means -Std. Deviation -Regression analysis - Identification of themes in documents -Intensity of words, points of views, and emotionally laden words in documents
To establish the influence of project planning on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.	Project planning	<ul style="list-style-type: none"> <li>• Work Load distribution</li> <li>• Procurement Undertaking</li> <li>• Action plans designs</li> </ul>	Non Applicable	Likert scale; 0-4  Thematic Analysis Content Analysis	-Frequencies -Means -Std. Deviation -Regression analysis - Identification of themes in documents -Intensity of words, points of views, and emotionally laden words in documents
To examine the influence of project execution on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.	Project execution	<ul style="list-style-type: none"> <li>• Resources allocation</li> <li>• Coordination of operational aspects</li> <li>• Decision making on arising issues</li> </ul>	Non Applicable	Likert scale; 0-4  Thematic Analysis Content Analysis	-Frequencies -Means -Std. Deviation -Regression analysis - Identification of themes in documents

					-Intensity of words, points of views, and emotionally laden words in documents
To examine the influence of project control on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.	Project control	<ul style="list-style-type: none"> <li>• Quality of work monitoring</li> <li>• Time Usage</li> <li>• Expenditures monitoring</li> </ul>	Non Applicable	Likert scale; 0-4  Thematic Analysis Content Analysis	-- Frequencies -Means -Std. Deviation -Regression analysis  - Identification of themes in documents -Intensity of words, points of views, and emotionally laden words in documents

### 3.8 Data Analysis Techniques

For quantitative data analysis, the study questionnaire was checked for completeness before being coded and entered into SPSS version 22 for analysis. The data was then analyzed according to research objectives. Descriptive statistics was done to describe basic characteristics of the data whereby frequencies, means and standard deviations were used. Frequencies show the number of times a certain response is given while means shows the tendency in responses on average. The standard deviation was used to describe the spread of the data in regard to responses given. To describe the influence of project initiation, project planning, project execution and project controls influence Performance of Kenya Power Last Mile Connectivity Projects in Nakuru County, the study used multiple regression analysis as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Performance of Kenya Power Last Mile Connectivity Project

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$  = Model coefficients

$X_1$  = Project Initiation Process

$X_2$  = Project planning

$X_3$  = Project execution

$X_4$  = Project control

$\varepsilon$  = Error Term

For qualitative data, the researcher typed all the responses given through interview guides and also transcribed all the audios recorded during the interviews. The transcribed data was uploaded into Nvivo software version 11 for Document Analysis. This software codes the qualitative data according to major themes emerging from the documents uploaded. Document analysis is a form of qualitative research whereby the researcher interprets the documents to bring out meaning on the topic of assessment (Kothari, 2004). The researcher then did thematic analysis whereby major themes were presented in the research report. Additionally, Content Analysis of documents regarding Kenya Power Last Mile Connectivity Projects was done. In this regard, the researcher endeavoured to filter data that is more relevant to this study since the documents may contain a wide scope of data that may not necessarily mean to this study. The study findings were presented thematically in narrative form.

### 3.9 Ethical Considerations

In doing this research, the researcher observed all ethical considerations of research. The researcher informed the study respondents the purpose of the study before they participated in the study. Participation in the study was voluntary and no respondent was forced to participate in the

study. The respondents' identity was kept anonymous whereby their identity was coded as Respondent A, Respondent B, and so on. Permission for data collection was obtained from National Commission for Science, Technology and Innovations (NACOSTI). The researcher asked for permission to access secondary data from Kenya Power that was used for document analysis.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATIONS AND INTERPRETATION

#### 4.1 Introduction

This chapter presents the results from data analysis as well as well as discussion from the findings. The chapter presents results on the influence of project initiation, project planning, project execution and project control on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. The chapter begins by giving the response rate of the questionnaires. The study then analyzed the background information of the respondents. After this, the descriptive data analysis is done in order to explain basic characteristics of the data obtained. Inferential statistics is then done to establish the influence of project initiation, project planning, project execution and project control on performance of Kenya power last mile connectivity projects in Nakuru County. The chapter concludes by discussing the findings in order to establish the consistency of the findings with other researchers.

#### 4.2 Response Rate

Response rate is defined as the proportion of respondents that completes a given survey compared over the total number of respondents who are sampled (Kombo & Tromp, 2009). Response rate was obtained by dividing the sample size with the number of questionnaires that were completely filled and collected back by the researcher. The sample size for this study was 148 respondents from diverse departments in Kenya Power involved in last mile project implementation in the county. Out of the 148 questionnaires distributed, 125 of them were completely and properly filled and collected back for analysis. Table 4.1 presents the response rate.

**Table 4.1: Response Rate**

Respondents	Issued Questionnaires	Returned Questionnaires	Response Rate
No. of respondents	148	125	84.5%

**Source:** Researcher (2018)

The response rate for this study was 84.5%. Mugenda and Mugenda (2003) recommended a response rate of at least 80% as sufficient for data analysis. Therefore the response rate obtained was sufficient to perform the data analysis in answering the research objectives of the study.

#### 4.3 Background Characteristics of Respondents

This study sought to obtain background characteristics of respondents in order to help in explaining the study findings. This information included; gender, age group, department the respondent works in, highest education level and number of years the respondent has worked on Kenya Power Last Mile Connectivity Projects.



### 4.3.1 Gender of Respondents

The respondents were asked to indicate their gender in the questionnaire and the results are depicted in Table 4.2.

**Table 4.2: Gender of Respondents**

Gender	Frequency	Percentage
Male	76	60.8
Female	49	39.2
<b>Total</b>	<b>125</b>	<b>100.0</b>

**Source:** Researcher (2018)

The results in Table 4.2 shows that majority of respondents were male (60.8%) while the rest were female (39.2%). This implies that most of the people involved in Kenya Power Last Mile Connectivity Projects are male.

### 4.3.2 Age of Respondents

The study respondents were also required to include age group they belong to in the questionnaire. The following findings were obtained in regard age group of respondents.

**Table 4.3: Age of Respondents**

Age Group	Frequency	Percentage
Below 20 Years	6	4.8
[20-30] Years	23	18.4
[30-40] Years	66	52.8
[40-50] Years	24	19.2
Over 50 Years	6	4.8
<b>Total</b>	<b>125</b>	<b>100.0</b>

**Source:** Researcher (2018)

According to 4.3, majority of the respondents (52.8%) were between 30-40 years, followed by those between 40-50 years (19.2%) and 20-30 years (18.4%) above 45 years (24.3%). The study established that respondents aged below 20 years and those aged above 50 years were the reset with each category having 4.8% of the total respondents.

### 4.3.3 Highest Education Level of Respondents

In regard to respondents' highest level of education, the following results were obtained as summarized in Table 4.4.

**Table 4.4: Highest Education Level of Respondents**

Highest Education Level	Frequency	Percentage
Diploma	33	26.4
Graduate	77	61.6
Post-Graduate	15	12.0
<b>Total</b>	<b>125</b>	<b>100.0</b>

**Source:** Researcher (2018)

Majority of the respondents in this study had an undergraduate degree (61.6%), followed by those with a diploma (26.4%) and the rest (12.0%) had reached at postgraduate level in their

education. Therefore the respondents could be able to comprehend the questions contained in the questionnaire.

#### 4.3.4 Department of respondents in Kenya Power

The study sought to find out the distribution of respondents across the departments in Kenya Power in order to find out if there was representation of respondents across the departments. The following were the findings from this quest.

**Table 4.5: Distribution of Respondents across Departments**

Highest Education Level	Frequency	Percentage
Design and Construction	20	16.0
Finance	22	17.6
Supply Chain	12	9.6
Marketing	5	4.0
Technical Services	19	15.2
Customer Services	47	37.6
<b>Total</b>	<b>125</b>	<b>100.0</b>

**Source:** Researcher (2018)

The study found out that majority (37.6%) of respondents involved in Kenya Power Last Mile Connectivity Projects was from customer service department. It was also found out that 16.0% of the respondents belonged to Design and Construction Department, 17.6% to Finance, 9.6% to Supply Chain, 4.0% to Marketing while 15.2% of the respondents belonged to technical Services. There was inequitable distribution of respondents however; the distribution was proportionate to department size in terms of the number employees and therefore there was fair representation from each department in Kenya Power.

#### 4.3.5 Length of Involvement in Last Mile Projects

Lastly on background information of respondents, the study sought to determine the length of time in which the respondents have been involved in Kenya Power Last Mile Connectivity Projects. The findings in regard to this metric were computed and tabulated as shown in Table 4.6.

**Table 4.6: Length of Involvement in Last Mile Projects**

Highest Education Level	Frequency	Percentage
Below 1 Year	17	13.6
[1-3] Years	33	26.4
Above 3 Years	75	60.0
<b>Total</b>	<b>125</b>	<b>100.0</b>

**Source:** Researcher (2018)

The study established that most of the respondents (60.0%) had been involved in Kenya Power Last Mile Connectivity Projects for more than three years while 26.4% of them had been involved in projects for between 1-3 years. Small proportion (13.6%) of respondents was in involved in Kenya Power Last Mile Connectivity Projects for less than a year. This implies that there was high experience and therefore most of the respondents were well knowledgeable in regard

to the influence of project management processes on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.

#### **4.4 Descriptive statistics**

This study did descriptive analysis of the data to describe the basic characteristics of the data using frequency, mean and standard deviation. Frequencies showed the number of respondents who gave a particular response. Mean score showed the inclination of respondents on average. While standard deviation showed the spread of the data. Standard deviation shows the degree of consensus of the respondents about the questions asked (Sekaran & Bougie, 2011). The descriptive statistical analysis was guided by the study objectives.

##### **4.4.1 Project Initiation and Project Performance**

The first objective of the study was to examine influence of project initiation on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. In achieving this objective, the study used the following statements: Determination of all objectives of Kenya Power Last Mile Connectivity projects is done during project initiation phase; Enough financial resources were set aside during initiation phase of Kenya Power Last Mile Connectivity projects; All stakeholders were identified before commencing of Kenya Power Last Mile Connectivity projects; Mobilization of all human resources was done during the initiation stages of Kenya Power Last Mile Connectivity projects; and Frequent meetings were organized with structure agendas before commencing of Kenya Power Last Mile Connectivity projects. The respondents were required to rate the statements using the following Likert scale; 0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent. The rating obtained is as shown in Table 4.7.

As shown in Table 4.7, 12% of the respondents disagreed that determination of all objectives of Kenya Power Last Mile Connectivity projects is done during project initiation phase while 22.4% of the respondents agreed to the statement to a small extent. Majority (22.4%) of the respondents cited to a moderate extent that determination of all objectives of Kenya Power Last Mile Connectivity projects is done during project initiation phase. It was also established that 20.8% and 6.4% of respondents to a large extent and very large extent respectively agreed with the statement. Similar sentiments were expressed by 40% of respondents in a study by Mkuni (2016) who indicated that undertaken projects were not in accordance to the development strategic plans raising possibilities of projects not being a priority for the target beneficiaries.

**Table 4.7: Frequencies, Means and Standard Deviations for Project Initiation**

Statement	No Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Total	
	%	%	%	%	%	Mean	Std. Dev.
Determination of all objectives of Kenya Power Last Mile Connectivity projects is done during project initiation phase.	12.0	22.4	38.4	20.8	6.4	1.87	1.077
Enough financial resources were set aside during initiation phase of Kenya Power Last Mile Connectivity projects	0.8	5.6	34.4	33.6	25.6	2.78	0.923
All stakeholders were identified before commencing of Kenya Power Last Mile Connectivity projects	9.6	28.8	44.0	16.0	1.6	1.71	0.905
Mobilization of all human resources was done during the initiation stages of Kenya Power Last Mile Connectivity projects	1.6	30.4	51.2	16.8	0.0	1.83	0.715
Frequent meetings were organized with structure agendas before commencing of Kenya Power Last Mile Connectivity projects	0.8	4.0	32.8	45.6	16.8	2.74	0.815

**Source:** Researcher (2018)

In regard to whether enough financial resources were set aside during initiation phase of Kenya Power Last Mile Connectivity projects, the study found out that 0.8% of the respondents were in disagreement with the statement while 5.6% of them were partially (small extent) in agreement to the same statement. On the same context, the study found out that 34.4% of respondents moderately agreed, 33.6% agreed to a large extent while 25.6% of them showed a very large extent of agreement to the statement.

In regard to the identification of stakeholders, 9.6% of the respondents disagreed that all stakeholders were identified before commencing of Kenya Power Last Mile Connectivity projects. On the same metric, 28.8% and 44.0% of respondents showed a small and moderate extent in agreement respectively. Table 4.7 also show that some respondents largely agreed (Large extent =16.0%, Very Large Extent =1.6%) that all stakeholders were identified before commencing of Kenya Power Last Mile Connectivity projects. The study also established that mobilization of all human resources was done during the initiation stages of Kenya Power Last Mile Connectivity projects. In this respect, the study found out that majority of the respondents to a small extent (30.4%) and moderate extent (51.2%) agreed that mobilization of all human resources was done during the initiation stages of Kenya Power Last Mile Connectivity projects. Only 1.6% of the respondents disagreed with the above statement.

It was also established that majority of the respondents to a large (Large Extent = 45.6%; Very Large Extent = 16.8%) agreed that frequent meetings were organized with structure agendas before commencing of Kenya Power Last Mile Connectivity projects. The findings on this statement also show that 32.8% of the study respondents reported that meetings were organized with structure agendas before commencing of Kenya Power Last Mile Connectivity projects but only to a moderate extent with 4.0% of the respondents indicating a small extent in which this is done. It was also noted that 0.8% of that respondents disagreed that frequent meetings were organized with structure agendas before commencing of Kenya Power Last Mile Connectivity project that frequent meetings were organized with structure agendas before commencing of Kenya Power Last Mile Connectivity projects.

The study computed the mean scores for the five metric measuring influence of project initiation measures on project performance of Kenya Power Last Mile Connectivity projects. The mean score on the extent in which determination of all objectives of Kenya Power Last Mile Connectivity projects was done during project initiation phase was 1.87. Setting aside enough financial resources during initiation phase of Kenya Power Last Mile Connectivity projects showed a mean score of 2.78. The mean score obtained in regard to the extent in which stakeholders were identified before commencing of Kenya Power Last Mile Connectivity projects was 1.71. Mean score of 1.83 was obtained in establishing the extent in which Mobilization of all human resources was done during the initiation stages of Kenya Power Last Mile Connectivity projects. A mean score of 2.74 was obtained on the extent in which frequent meetings were organized with structured agendas before commencing of Kenya Power Last Mile Connectivity projects.

In utilizing a Likert scale of 0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent; a mean ( $\mu$ ) of  $3.5 < \mu \leq 4$  imply a tendency to agree to a very large extent,  $2.5 < \mu < 3.5$  imply a tendency to agree to a large extent,  $1.5 < \mu < 2.5$  a tendency to agree moderately,  $0.5 < \mu < 1.5$  a tendency to agree to a small extent, and a mean score of 0 to 0.5 indicate a tendency to disagree (Saunders, Lewis, & Thornhill, 2009). The mean scores of all the statements measuring the extent in which project initiation influenced performance of Kenya power last mile connectivity projects in Nakuru County were between 1.5 and 2.5; except that stating that frequent meetings were organized with structure agendas before commencing of Kenya Power Last Mile and enough financial resources being set aside during initiation phase of Kenya Power Last Mile Connectivity projects. Therefore, on average, determination of project objectives, setting aside enough financial resources, identification of stakeholders and mobilization of all human resources during initiation phase of Kenya Power Last Mile Connectivity projects was done to a moderate extent. This also implies that, on average, organizing meetings with structure agendas before commencing of Kenya Power Last Mile Connectivity projects and enough financial resources being

set aside during initiation phase of Kenya Power Last Mile Connectivity projects was done to a large extent. These findings collaborate those of Kahindi, (2014) in a study focusing on project initiation process on project performance that study found that financial resources, stakeholder participation, and technical expertise were critical aspects of project initiation phase.

The study further analyzed the standard deviations of the statements measuring the influence of project initiation on project performance. The standard deviation obtained on different metrics is as follows; 1.077 on determination of project objectives, 0.923 on setting aside enough financial resources, 0.905 on identification of stakeholders, 0.715 on mobilization of all human resources and 0.815 on organizing meetings with structure agendas before commencing of Kenya Power Last Mile Connectivity projects. Using a five-point Likert scale of 0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent; a standard deviation ( $\sigma$ ) of  $\sigma \leq 0.5$  imply high consensus,  $0.5 < \sigma \leq 1$  moderate consensus and  $\sigma > 1$  denote low of consensus between the respondents on the corresponding item on the questionnaire (Sekaran & Bougie, 2011).

The standard deviation obtained from responses in regard to the extent in which project initiation influenced Performance of Kenya power last mile connectivity projects in Nakuru County was between 0.5 to 1.0 for four metric and above 1.0 for one of the metric. This implies that there was moderate consensus on the extent in setting aside enough financial resources, identification of stakeholders, mobilization of all human resources and organizing meetings with structure agendas is done by Kenya Power. This also implies that, there was a low consensus on the extent in which determination of all objectives of Kenya Power Last Mile Connectivity projects was done during project initiation phase.

The efficiency of the project initiation processes was raised by several respondents during the interview phase. Amongst the aspects noted to be a challenge was the meetings for the last mile being undertaken at the head office and the results of the same being cascaded to staff in an adhoc manner. The way the transformers for the last mile were chosen were an issue as the exercise was undertaken in a hurry and within the course of a single weekend. This led to the team choosing the transformers over relying on Google maps and the transformers within the system as opposed to checking the transformers from the ground. The net effect of this process was that some of the transformers that were chosen were not viable in nature. The lack of viability of these transformers arose from the fact that some had already been optimized in the system and some were simply not economically viable to be optimized based on the number of customers surrounding a single transformer.

There was political interference with some of the transformers that were identified due to Constituency Development Fund (CDF) consideration of some areas and with politicians influencing the areas to be considered for last mile electricity connection aspects. Mkuni (2016) in

an examination of the role of project initiation in the completion of road construction projects in the country. Iso noted that the politicians initiated projects owing to their political influence of key decision makers within the government. Mkuni (2016) indicated the huge influence of the politicians in project initiation in Zambia led to undermining the viability of some projects as advice from experienced technocrats was sometimes not considered.

#### 4.4.2 Project Planning and Project Performance

The second objective of the study was to establish the influence of project planning on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. In meeting this research objective, the study used the following statements: Stakeholders are involved in all planning meetings of Kenya Power Last Mile Connectivity projects; Kenya power plans for all resource requirements needed in execution of Kenya Power Last Mile Connectivity projects; All workload required for Kenya Power Last Mile Connectivity projects is distributed to different stakeholders; All procurement undertakings are done prior to execution of Kenya Power Last Mile Connectivity projects; and All action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects. The respondents were required to rate the statements using the following Likert scale; 0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4=very large extent. The rating obtained is as shown in Table 4.7.

**Table 4.8: Frequencies, Means and Standard Deviations for Project Planning**

Statement	No Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Total	
	%	%	%	%	%	Mean	Std. Dev.
Stakeholders are involved in all planning meetings of Kenya Power Last Mile Connectivity projects	1.6	26.4	55.2	16.8	0.0	1.87	0.695
Kenya power plans for all resource requirements needed in execution of Kenya Power Last Mile Connectivity projects	8.0	30.4	33.6	23.2	4.8	1.86	1.019
All workload required for Kenya Power Last Mile Connectivity projects is distributed to different stakeholders	1.6	24.8	52.0	20.8	0.8	1.94	0.744
All procurement undertakings are done prior to execution of Kenya Power Last Mile Connectivity projects	8.8	32.8	37.6	16.0	4.8	1.75	0.989
All action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects	0.0	4.8	32.0	51.2	12.0	2.70	0.741

**Source:** Researcher (2018)

Table 4.8 shows, 1.6% of the respondents disagreed that stakeholders are involved in all planning meetings of Kenya Power Last Mile Connectivity projects is done during project initiation phase while 26.4% of the respondents agreed to the statement to a small extent. Majority (55.2%) of the respondents cited that to a moderate extent that stakeholders are involved in all planning meetings of Kenya Power Last Mile Connectivity projects is done during project initiation phase. It was also established that 16.8% to a large extent agreed with the statement. In regard to whether Kenya Power plans for all resource requirements needed in execution of Kenya Power Last Mile Connectivity projects, the study found out that 8.0% of the respondents were in disagreement with the statement while 30.4% of them were agreed with the statement to a small extent. On the same context, the study found out that 36.6% of respondents moderated agreed, 23.2% agreed to a large extent while 4.8% of them showed a very large extent of agreement to the statement.

In regard to the workload required for Kenya Power Last Mile Connectivity projects, 8.8% of the respondents disagreed that all workload required for Kenya Power Last Mile Connectivity projects is distributed to different stakeholders. On the same metric, 24.8% and 52.8% of respondents showed a small and moderate extent in agreement respectively. Table 4.8 also shows that some respondents largely agreed (Large extent =20.8%, Very Large Extent =0.8%) that all workload required for Kenya Power Last Mile Connectivity projects is distributed to different stakeholders. In respect to the extent in which procurement undertakings are done prior to execution of Kenya Power Last Mile Connectivity projects, the study found out that majority of the respondents to a small extent (32.8%) and moderate extent (37.6%) agreed that all procurement undertakings are done prior to execution of Kenya Power Last Mile Connectivity projects. It was also found out that 16.0% and 4.8% agreed to a large extent and very large extent respectively with that statement and only 8.8% of the respondents disagreed with the same statement.

It was also established that majority of the respondents to moderate and large extent (Moderate Extent = 32.0%; Large Extent = 51.2%) agreed that all action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects. It was also found that 12.0% of the study respondents to a very large extent agreed that all action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects and a small extent in agreement to the statement was shown by 4.8% of the respondents.

The mean score on the extent in which stakeholders are involved in planning meetings of Kenya Power Last Mile Connectivity projects was 1.87. The extent in which Kenya Power plans for all resource requirements needed in execution of Kenya Power Last Mile Connectivity projects was 1.86. The mean score obtained in regard to the extent in which workload required for Kenya Power Last Mile Connectivity projects is distributed to different stakeholders was 1.94. Mean score of 1.75 was obtained in establishing the extent in which procurement undertakings were



done prior to execution of Kenya Power Last Mile Connectivity projects. A mean score of 2.70 was obtained on the extent in which action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects.

The mean scores of all the statements measuring the extent in which project initiation influenced performance of Kenya power last mile connectivity projects in Nakuru County were between 1.5 and 2.5; except that stating that action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects. Therefore, on average, stakeholders' involvement in planning meetings, planning for all resource requirements needed in execution, workload distribution to different stakeholders and procurement undertakings prior to execution of Kenya Power Last Mile Connectivity projects was done to a moderate extent. This also implies that, on average, designing action plans to a large extent was done during the planning stage of Kenya Power Last Mile Connectivity projects.

The standard deviation obtained on different metrics is as follows; 0.695 on stakeholders' involvement in planning meetings, 1.019 on planning for all resource requirements needed in execution, 0.744 on workload distribution to different stakeholders, 0.989 on procurement undertakings prior to execution of Kenya Power Last Mile Connectivity projects and 0.741 on designing action plans for the projects. The standard deviation ranged between 0.5 to 1.0 for four metrics and above 1.0 for one of the metrics. This implies that there was moderate consensus on the extent in which stakeholders' involvement in planning meetings, workload distribution to different stakeholders, procurement undertakings prior to execution of projects and designing action plans for projects were done. This also implies that, there was a low consensus on the extent in which planning for all resource requirements needed in execution of Kenya Power Last Mile Connectivity projects was done.

The project planning component aspect of the last mile was a component that was raised by diverse respondents who were interviewed. Amongst the aspects that were raised included the selection of maximization transformers within constituencies, procurement related aspects and administrative planning of the project. The selection of the maximization transformers was heavily influenced by the political considerations with the politicians influencing which areas to benefit from the project. This led to the situation in which even areas that were not economically viable for the purposes of electricity maximization benefitted from the project. The procurement aspects were a challenge in the context that there was no clear demarcated supplies for the purposes of the last mile. This led to a situation in which the procured supplies were heavily interfered with by the normal operations work such as maintenance purposes. The administrative planning of the project was also a challenge in the context that some marketing team were used in customer identification aspects while they lacked the technical capacity to undertake project identification aspects.

The role of project planning on project performance was also examined by Njuguna, (2012) in a study focusing on Kazi Kwa Vijana projects in Kenya. The study also found that project planning led to improved project performance and that lack of work breakdown structure during project planning phase led to project failure. Ogero (2014) also made similar findings in a study on construction firms and found that amongst the project planning tools utilized included work breakdown structure (mean of 3.409), resources estimation (mean of 3.426), overall schedule (mean of 3.000), and Grant schedule (mean of 3.573).

#### **4.4.3 Project Execution and Project Performance**

The third objective to examine the influence of project execution on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. In achieving this objective, the study used the following statements: There is proper coordination of human resources during the execution of Kenya Power Last Mile Connectivity projects; There is proper management of the available funds for the execution of Kenya Power Last Mile Connectivity projects; There is timely payment of diverse third parties (such as contractors, suppliers etc) of Kenya Power Last Mile Connectivity projects; There is proper coordination of diverse stakeholders during the execution of Kenya Power Last Mile Connectivity projects; and There is proper management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects. The respondents were required to rate the statements using the following Likert scale; 0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent. The rating obtained is as shown in Table 4.9.

As shown in Table 4.9, 1.6% of the respondents disagreed that there is proper coordination of human resources during the execution of Kenya Power Last Mile Connectivity projects while 28.0% of the respondents agreed to the statement to a small extent. Majority (54.4%) of the respondents cited that to a moderate extent that there is proper coordination of human resources during the execution of Kenya Power Last Mile Connectivity projects. It was also established that 13.6% and 2.4% of respondents to a large extent and very large extent respectively agreed with the statement. In regard to whether there is proper management of the available funds for the execution of Kenya Power Last Mile Connectivity projects, the study found out that 0.8% of the respondents were in disagreement with the statement while 7.2% of them were partially (small extent) in agreement to the same statement. On the same context, the study found out that 28.8% of respondents moderated agreed, 38.4% agreed to a large extent while 24.8% of them showed a very large extent of agreement to the statement.

**Table 4.9: Frequencies, Means and Standard Deviations for Project Execution**

Statement	No Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Total	
	%	%	%	%	%	Mean	Std. Dev.
There is proper coordination of human resources during the execution of Kenya Power Last Mile Connectivity projects	1.6	28.0	54.4	13.6	2.4	1.87	0.751
There is proper management of the available funds for the execution of Kenya Power Last Mile Connectivity projects	0.8	7.2	28.8	38.4	24.8	2.79	0.927
There is timely payment of diverse third parties (such as contractors, suppliers etc) of Kenya Power Last Mile Connectivity projects	3.2	25.6	48.0	21.6	1.6	1.93	0.815
There is proper coordination of diverse stakeholders during the execution of Kenya Power Last Mile Connectivity projects	1.6	24.0	52.8	17.6	4.0	1.98	0.803
There is proper management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects	2.4	28.0	54.4	13.6	1.6	1.87	0.851

**Source:** Researcher (2018)

About the payment of diverse third parties, 3.2% of the respondents disagreed that there is timely payment of diverse third parties (such as contractors, suppliers etc) of Kenya Power Last Mile Connectivity projects. On the same metric, 25.6% and 48.0% of respondents showed a small and moderate extent in agreement respectively. Table 4.9 also show that some respondents largely agree (Large extent =21.6%, Very Large Extent =1.6%) that there is timely payment of diverse third parties. The study found out that majority of the respondents to a small extent (24.0%) and moderate extent (52.8%) agreed that there is proper coordination of diverse stakeholders during the execution of Kenya Power Last Mile Connectivity projects. It was also found out that 17.6% and 4.0% of the respondents to a large extent and very large extent respectively agreed with the statement. Only 1.6% of the respondents disagreed with the above statement.

It was also established that majority of the respondents to a small (28.0%) and moderate (54.4%) extent agreed that there is proper management within the department and cross-functional management in executing Kenya Power Last Mile Connectivity projects. The findings on this statement also show that 13.6% of the study respondents reported that to a large extent agreed that there is proper management within the department and cross-functional management in executing Kenya Power Last Mile Connectivity projects but only to a with 1.6% of the respondents indicating

a very large extent in which this is done. It was also noted that 2.4% of that respondents disagreed that there is proper management within the department and cross-functional management in executing Kenya Power Last Mile Connectivity projects.

The mean score of 1.87 was obtained on coordination of human resources, 2.79 on management of the available funds, 1.93 on payment of diverse third parties, 1.98 on coordination of diverse stakeholders and a mean score of 1.87 on management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects. The mean scores of all the statements measuring the extent in which project execution influenced performance of Kenya power last mile connectivity projects in Nakuru County were between 1.5 and 2.5; except that stating that there is proper management of the available funds for the execution of Kenya Power Last Mile Connectivity projects. Therefore, on average, coordination of human resources, payment of diverse third parties, coordination of diverse stakeholders and management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects were done to a moderate extent. This also implies that, on average, management of the available funds for the execution of Kenya Power Last Mile Connectivity projects was done to a large extent.

The standard deviation obtained on different statements is as follows; 0.751 on coordination of human resources, 0.927 on management of the available funds, 0.815 on payment of diverse third parties, 0.803 on coordination of diverse stakeholders and 0.851 on management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects. The standard deviation obtained was between 0.5 to 1.0 for all the statements, which implies that there was moderate consensus on the extent in coordination of human resources, management of the available funds, payment of diverse third parties, coordination of diverse stakeholders and management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects.

In a study focusing on the project execution within healthcare projects in Ogaden, Somalia, Marren (2016) also found that timely provision of funds for project implementation, staff project relations, systemic and efficient implementation efforts timely project control feedbacks, and corrective measures being undertaken are amongst the project execution aspects influencing project implementation. Similar findings were also made by Too (2015) within the NGO projects. The study revealed the project implementation considerations included completion of projects within stipulated timelines, projects costs being within budgeted amounts, quality of implemented projects, and satisfaction of the targetted beneficiaries of the project. Obiero (2017) also found that timely payments of contractor's payments, timely payment of site workers, timely payments of

suppliers, and timely disbursement of funds were important in order to prevent delays in implementation of projects and the smooth project work flow aspects.

The interviewees noted that the project execution phase has been problematic at Kenya power. Amongst the challenges that were noted were the delays in the roll out of materials within some regions due to diverse issues thus leading to delayed timelines in completion of projects. There were noted delays in roll out of materials within some regions due to diverse issues thus leading to delayed timelines in completion. The materials and procurement aspects were a challenge during the project execution phase of the last mile. The procured materials were placed in one central pool with the regional offices without clear demarcations of the purpose of those materials in respect to diverse uses. This led to competition for materials between last mile and other ongoing maintenance work within the company. The maintenance team often working of emergencies and arising issues would often pick materials from the store at the expense of the last mile connectivity project. Procurement aspects were a challenge due to the lengthy time it took to procure some of the materials from abroad. The procurement backlogs would often lead to delays within metering aspects of last mile project with some customers not metered within the seven days stipulated timelines for metering. Ullah (2014) in a study that examined the role of project execution on Performance of construction projects in the country made similar findings. The study revealed that the longer the process of procurement aspects the longer project performance took.

There is immense pressure to deliver and with diverse stringent delivery targets which acts to compromise the quality. There has been an emphasis on the numbers of the customers connected sometimes at the expense of the quality of those connectivity. There was challenge of interdepartmental help. This arose when the marketing team required help from other departments but such help would not be captured on performance appraisal. This had the effect of making some departments reluctant to offer help as staff prioritized their own targets. Due to pressure to deliver on the connectivity numbers, the timelines allocated for identification of transformers is too little

#### **4.4.4 Project Control and Project Performance**

The last objective of the study was to establish the influence of project planning on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. In meeting this research objective, the study used the following statements: There is proper tracking of scope accomplishments against the set performance targets; There are proper risk mitigation controls to monitor Kenya Power Last Mile Connectivity projects; There is regular site visits to monitor the progress of Kenya Power Last Mile Connectivity projects; There is proper control of expenditure for Kenya Power Last Mile Connectivity projects to align with the budgeted funds; There is proper utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects; The respondents were required to rate the statements using the following Likert scale; 0=no extent,

1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent. The rating obtained is as shown in Table 4.10.

**Table 4.10: Frequencies, Means and Standard Deviations for Project Control**

Statement	No Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Total	
	%	%	%	%	%	Mean	Std. Dev.
There is proper tracking of scope accomplishments against the set performance targets.	7.2	29.6	38.4	22.4	2.4	1.89	1.233
There are proper risk mitigation controls to monitor Kenya Power Last Mile Connectivity projects	8.0	31.2	35.2	20.8	4.8	1.83	1.006
There is regular site visits to monitor the progress of Kenya Power Last Mile Connectivity projects	0.8	19.2	55.2	24.0	0.8	2.05	0.705
There is proper control of expenditure for Kenya Power Last Mile Connectivity projects to align with the budgeted funds	8.8	27.2	39.2	20.0	4.8	1.85	1.000
There is proper utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects	0.0	3.2	29.6	44.8	22.4	2.86	.797

**Source:** Researcher (2018)

According to Table 4.10, 7.2% of the respondents disagreed that there is proper tracking of scope accomplishments against the set performance targets while 29.6% of the respondents agreed with the statement to a small extent. Majority (38.4%) of the respondents cited to a moderate extent that there is proper tracking of scope accomplishments against the set performance targets. It was also established that 22.4% of the respondents to a large extent agreed with the statement. Only 2.4% showed very large extent intracking of scope accomplishments against the set performance targets. In respect to whether there are proper risk mitigation controls to monitor Kenya Power Last Mile Connectivity projects, the study found out that 8.0% of the respondents said that there are no proper risk mitigation controls to monitor Kenya Power Last Mile Connectivity projects while 31.2% of them were agreed with the statement to a small extent. On the same context, the study found out that 35.2% of respondents moderately agreed, 20.8% agreed to a large extent and 4.8% of them showed a very large extent of agreement to the statement.

In respect to the workload required for Kenya Power Last Mile Connectivity projects, 0.8% of the respondents disagreed that there is regular site visits to monitor the progress of Kenya Power Last Mile Connectivity projects. On the same metric, 19.2% and 55.2% of respondents showed a small and moderate extent in agreement respectively. Table 4.10 also shows that some respondents

largely agreed (Large extent =24.0%, Very Large Extent =0.8%) that there is regular site visits to monitor the progress of Kenya Power Last Mile Connectivity projects. In respect to the extent of control of expenditure for Kenya Power Last Mile Connectivity projects, the study found out that majority of the respondents to a small extent (27.2%) and moderate extent (39.2%) agreed there is proper control of expenditure for Kenya Power Last Mile Connectivity projects to align with the budgeted funds. It was also found out that 20.0% and 4.8% agreed to a large extent and very large extent respectively with that statement and only 8.8% of the respondents disagreed with the same statement.

It was also established that majority of the respondents agreed to a moderate and large extent (Moderate Extent = 29.6%; Large Extent = 44.8%) that there is proper utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects. It was also found that 24.4% of the study respondents to a very large extent agreed that there is proper utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects. It was noted that 3.2% of the respondents showed a small extent of agreement to the statement.

The mean score on the extent in which tracking of scope accomplishments against the set performance targets was done was 1.89. The extent in which risk mitigation controls to monitor Kenya Power Last Mile Connectivity projects are done was 1.83. The mean score obtained in regard to the extent in which site visits to monitor the progress of Kenya Power Last Mile Connectivity projects are done was 2.05. Mean score of 1.85 was obtained in establishing the extent in which control of expenditure for Kenya Power Last Mile Connectivity projects to align with the budgeted funds was done. A mean score of 2.86 was obtained on utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects.

The mean scores ranged between 1.5 and 2.5; except that 'there is proper utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects'. Therefore, on average, tracking of scope accomplishments against the set performance targets, risk mitigation controls, site visits and control of expenditure were done to a moderate extent. This also implies that, on average, utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects was done to a great extent. Kamurua (2013) in a study focusing on projects within Ministry of Immigration in Kenya also noted that project's control enabled increase in efficiency of project management staff, increase in accountability of funds expenditure, and improvement in achievement of project objectives. These aspects are achieved through the project control aspects assisting in helping the project managers to keep track of performance against set objectives and placing mechanisms for checking on project deviation from set objectives.

The standard deviation obtained on different metrics is as follows; 1.233 on tracking of scope accomplishments against the set performance targets, 1.006 on risk mitigation controls, 0.705

on site visits, 1.000 on control of expenditure and 0.797 on utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects. This implies that there was moderate consensus on the site visits and utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects. There was low consensus in on tracking of scope accomplishments against the set performance targets, risk mitigation controls and control of expenditure among the study respondents.

There was lack of a structured approach to transformer identifications for the last mile with the process of identification left to individual marketers for mapping of the transformers. Some of the transformers were mapped from google maps as opposed to physical site visitation. The interviewees noted that some of the last mile sites have not been handed over due to the challenges in completion of the sites. Tamimu (2017) in a study on the water and sanitation projects in Ghana the collaboration between diverse stakeholders is also critical in the project control aspects within water and sanitation programs in Ghana. The project owners relied on the reports from decentralized departments for the purposes of project controls on the ground. Nyakagwa (2016) in a study focusing on Constituency Development Funded (CDF) projects found that the project control tools utilized included performance indicators, logical framework, formal survey, rapid appraisal, and cost benefit analysis while the aspects that were controlled included project information, project progress, project budget, and project quality.

#### **4.4.5 Project Performance**

In measuring the dependent variable of this study, the following statements were used: There is accountability of funds expenditure towards Kenya Power Last Mile Connectivity projects; Kenya Power has increased revenue generation as a result of Kenya power last mile connectivity projects; There is high number of customers connected to electricity as a result of Kenya power last mile connectivity projects; High power transformer optimization has been achieved through Kenya power last mile connectivity projects; Customer satisfaction levels have increased as a result of Kenya power last mile connectivity projects.

The respondents were requested to rate the statements using the following Likert scale; 0= no extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent. The rating obtained is as shown in Table 4.11. As shown in Table 4.11, The presence of accountability of funds expenditure towards Kenya Power Last Mile Connectivity projects had 1.6%, 5.6%, 32.0%, 45.6% and 15.2% of the respondents indicating to no extent, small extent, moderate extent, large extent and very large extent respectively. In relations to Kenya Power increasing revenue generation as a result of Kenya power last mile connectivity projects, a majority of 41.6% of the respondents indicated to a small extent in respect to the metric. On the other hand, a further 25.6% of the respondents indicated to a moderate extent. Up to 39.2% of the respondents indicated that to a large



extent there is a high number of customers connected to electricity as a result of Kenya power last mile connectivity projects. On the other hand, 31.2% indicated that to a moderate extent the high numbers of customers connected to electricity as a result of Kenya power last mile connectivity project. In regards to high power transformer optimization being achieved through Kenya power last mile connectivity projects, a majority of 58.4% of the respondents indicated that optimization effects were achieved to a large extent. Finally, in respect to customer satisfaction levels increasing as a result of Kenya power last mile connectivity projects, 32.0%, 39.2%, 16.0%, 8.8% and 4.0% of the respondents indicated to no extent, small extent, moderate extent, large extent and very large extent respectively.

**Table 4.11: Frequencies, Means and Standard Deviations for Project Control**

Statement	No Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Total	
	%	%	%	%	%	Mean	Std. Dev.
There is accountability of funds expenditure towards Kenya Power Last Mile Connectivity projects	1.6	5.6	32.0	45.6	15.2	2.67	0.859
Kenya Power has increased revenue generation as a result of Kenya power last mile connectivity projects	22.4	41.6	25.6	5.6	4.8	1.29	1.030
There is high number of customers connected to electricity as a result of Kenya power last mile connectivity projects	0.0	9.6	31.2	39.2	20.0	2.70	0.900
High power transformer optimization has been achieved through Kenya power last mile connectivity projects	1.6	0.8	12.0	58.4	27.2	3.09	0.752
Customer satisfaction levels have increased as a result of Kenya power last mile connectivity projects	32.0	39.2	16.0	8.8	4.0	1.14	1.088

**Source:** Researcher (2018)

The mean score on the extent in which accountability of funds expenditure towards Kenya Power Last Mile Connectivity projects was done was 2.67. The increase in revenue generation as a result of Kenya power last mile connectivity projects was 1.29. A mean score of 2.70 was obtained on the increase in the number of customers connected to electricity as a result of Kenya power last mile connectivity projects. The mean score obtained in regard to the extent in which transformer power optimization has been achieved through Kenya power last mile connectivity project was done was 3.09. Mean score of 1.14 was obtained in establishing the extent in which customer satisfaction levels have increased as a result of Kenya power last mile connectivity projects.

The mean scores ranged between 2.5 and 3.5 for three statements and 0.5 to 1.5 for two statements. Therefore, on average, accountability of funds expenditure, increase in the number of customers connected to electricity and transformer power optimization was done to a large extent. This further implies that, on average, revenue generation and customer satisfaction as a result of Kenya Power Last Mile Connectivity projects was done to a small extent.

The standard deviation obtained on different statements is as follows; 0.859 on accountability of funds expenditure, 1.030 on revenue generation, 0.900 on the number of customers connected to electricity, 0.752 on transformer optimization and 1.088 on customer satisfaction as a result of Kenya Power Last Mile Connectivity projects. This implies that there was moderate consensus on the accountability of funds expenditure as well as on the number of customers connected to electricity and on transformer optimization in Kenya Power Last Mile Connectivity projects. There was low consensus in on revenue generation and customer satisfaction among the study respondents.

#### 4.5 Inferential Statistics

This study carried out a multiple regression analysis to establish the influence of project initiation, project planning, project execution and the project control on Performance of Kenya Power Last Mile Connectivity projects. Table 4.12 shows the model summary and overall fit statistics for the multiple linear regression.

**Table 4.12: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.895 <sup>a</sup>	0.802	0.795	0.10249

a. Predictors: (Constant), Initiation, Planning, Execution, Control

The table shows column for R, R Square, Adjusted R Square and standard Error of the Estimate. R is the correlation between the predicted values and the observed values of the dependent variable, which indicates the quality of the regression model in predicting the dependent variable in a model. R Square is the square of the correlation between the predicted values and the observed values of dependent variable and indicates the percentage of variation explained by the independent (predictor) variables. It shows the goodness-of-fit of the regression model. The adjusted R indicates the expected improvement of model by chance in case additional predictors are included in the regression model. The standard error of the estimate is the standard deviation between the predicted values and the observed values of dependent variable in the model and is used to indicate the accuracy of prediction of the regression model (Saunders, Lewis, & Thornhill, 2009).

As shown in Table 4.12, R = 0.895 which shows there was strong correlation between the observed values and predicted values of project performance in this model and therefore the model is of good quality. R<sup>2</sup> value of 0.802 indicates that 80.2% of the variation in Performance of Kenya

Power Last Mile Connectivity projects can be explained by how project initiation process, project planning, project execution is done. Therefore there is high goodness-of-fit data into the regression model. There was low standard error of the estimate of 0.122684 and therefore the regression model is accurate in its prediction. The study further used F-test to test the significance of the regression model as shown in Table 4.13.

**Table 4.13: Analysis of Variance**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.096	4	1.274	121.295	0.000 <sup>b</sup>
Residual	1.260	120	0.011		
Total	6.357	124			

a. Dependent Variable: Project performance

b. Predictors: (Constant), Initiation, Planning, Execution, Control

The F-test of overall significance indicates the model capacity to statistically and significantly predict the dependent variable better than a model that contains no independent variables. If the P-value value is less than the significance level chosen for this study (this study used 0.05 significance level), then it would imply that the model has significant predictive capacity (Upagade & Shende, 2012). From the ANOVA results,  $F(4, 120) = 121.295$ ,  $p < 0.05$ . This implies that the model has statistically significant predictive capability. Therefore the regression model is significant and provides goodness of fit to the data. Table 4.14 shows the regression coefficients of the variables used in the study.

**Table 4.14: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.179	0.094		1.897	.060
Initiation	0.250	0.022	0.472	11.257	.000
Planning	0.208	0.023	0.365	8.877	.000
Execution	0.213	0.029	0.309	7.320	.000
Control	0.238	0.021	0.484	11.524	.000

a. Dependent Variable: Project Performance

The unstandardized beta for this regression model according to Table 4.14 was 0.250 for project initiation, 0.208 for project planning, 0.213 for project execution and 0.238 for project control. The unstandardized beta coefficients show the level of influence of the independent variable on the dependent variable (Upagade & Shende, 2012). This implies that for every one-unit increase in project initiation aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.250 units. It also means that for every one-unit increase in project planning aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.208 units. Additionally, for every one-unit increase in project execution aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.213 units. Lastly, for every one-unit increase in

project control aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.238 units. From the above findings, project initiation has the greatest influence on performance of Kenya Power Last Mile Connectivity projects, followed by project control, execution and lastly project planning, however their influence are relatively the same.

Table 4.14 also shows the t-statistics and its associated p-values. T-statistics shows the significance of each predictor in the multiple regression in predicting the dependent variable in the model. If the p-value falls below 0.05, which is the chosen significant level in this study, the corresponding variable significantly predicts the dependent variable in the regression model. The t-statistics and its associated p-values were used to test the study hypothesis as follows;

H<sub>01</sub>: There is no statistically significant relationship between project initiation and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. In regard to the first hypothesis of the study, it was found out that there is statistically significant relationship ( $t=11.257$ ,  $p<0.05$ ) between project initiation and performance of Kenya power last mile connectivity projects in Nakuru County. Therefore, based on the findings of this study, the null hypothesis of the study was rejected. This implies that project initiation is a significant predictor of performance of Kenya power last mile connectivity projects in Nakuru County.

H<sub>02</sub>: There is no statistically significant relationship between project planning and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. In view of this second hypothesis, it was found out that there is statistically significant relationship ( $t=8.877$ ,  $p<0.05$ ) between project planning and performance of Kenya power last mile connectivity projects in Nakuru County. Therefore, the null hypothesis of the study was rejected. This implies that project planning is a significant predictor of performance of Kenya power last mile connectivity projects in Nakuru County.

H<sub>03</sub>: There is no statistically significant relationship between project execution and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. The study found out that there is statistically significant relationship ( $t=7.320$ ,  $p<0.05$ ) between project execution and performance of Kenya power last mile connectivity projects in Nakuru County. Therefore, the null hypothesis of the study was rejected. This implies that project execution is a significant predictor of performance of Kenya power last mile connectivity projects in Nakuru County.

H<sub>04</sub>: There is no statistically significant relationship between project control and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. The study found out that there is statistically significant relationship ( $t=7.320$ ,  $p<0.05$ ) between project control and performance of Kenya power last mile connectivity projects in Nakuru County. This null

hypothesis of the study was therefore rejected and hence project control is a significant predictor of performance of Kenya power last mile connectivity projects in Nakuru County.

In conclusion, the study established that project initiation process, project planning, project execution and the project control are significant predictors of Performance of Kenya Power Last Mile Connectivity projects. Therefore, the following multiple regression model was arrived at;  $Y = 0.179 + 0.250X_1 + 0.208X_2 + 0.213X_3 + 0.238X_4 + 0.010249$ , where;  $X_1$  =Project Initiation Process,  $X_2$ = Project Planning,  $X_3$ = Project Execution and  $X_4$ = Project Control.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

Chapter five presents the summary of findings, conclusion and recommendation. This section contains the main findings from the study and makes conclusions based on the findings and also recommends what is supposed to be done based on the conclusion of the study.

#### **5.2 Summary of Findings**

From the data analysis, the study makes summary of the major findings. The mean score on the extent in which determination of all objectives of Kenya Power Last Mile Connectivity projects was done during project initiation phase was 1.87. Setting aside enough financial resources during initiation phase of Kenya Power Last Mile Connectivity projects showed a mean score of 2.78. The mean score obtained in regard to the extent in which stakeholders were identified before commencing of Kenya Power Last Mile Connectivity projects was 1.71. Mean score of 1.83 was obtained in establishing the extent in which Mobilization of all human resources was done during the initiation stages of Kenya Power Last Mile Connectivity projects. A mean score of 2.74 was obtained on the extent in which frequent meetings were organized with structured agendas before commencing of Kenya Power Last Mile Connectivity projects. The null hypothesis stating that there is no statistically significant relationship between project initiation and performance of Kenya power last mile connectivity projects in Nakuru County, Kenya was rejected. It was found that for every one-unit increase in project initiation aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.250 units.

The mean score on the extent in which stakeholders are involved in planning meetings of Kenya Power Last Mile Connectivity projects was 1.87. The extent in which Kenya Power plans for all resource requirements needed in execution of Kenya Power Last Mile Connectivity projects was 2.86. The mean score obtained in regard to the extent in which workload required for Kenya Power Last Mile Connectivity projects is distributed to different stakeholders was 1.94. Mean score of 1.75 was obtained in establishing the extent in which procurement undertakings were done prior to execution of Kenya Power Last Mile Connectivity projects. A mean score of 2.70 was obtained on the extent in which action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects. The null hypothesis stating that there is no statistically significant relationship between project planning and performance of Kenya power last mile connectivity projects in Nakuru County was rejected. It was found out that for every one-unit increase in project planning aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.208 units.

The mean score of 1.87 was obtained on coordination of human resources, 2.79 on management of the available funds, 1.93 on payment of diverse third parties, 1.98 on coordination

of diverse stakeholders and a mean score of 1.87 on management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects. The null hypothesis stating that there is no statistically significant relationship between project execution and performance of Kenya power last mile connectivity projects in Nakuru County was rejected. It was found out that for every one-unit increase in project execution aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.213 units.

The mean score on the extent in which tracking of scope accomplishments against the set performance targets was done was 1.89. The extent in which risk mitigation controls to monitor Kenya Power Last Mile Connectivity projects are done was 1.83. The mean score obtained in regard to the extent in which site visits to monitor the progress of Kenya Power Last Mile Connectivity projects are done was 2.05. Mean score of 1.85 was obtained in establishing the extent in which control of expenditure for Kenya Power Last Mile Connectivity projects to align with the budgeted funds was done. A mean score of 2.86 was obtained on utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects. The null hypothesis stating that there is no statistically significant relationship between project control and performance of Kenya power last mile connectivity projects in Nakuru County was rejected. It was found out that for every one-unit increase in project execution aspects, Performance of Kenya Power Last Mile Connectivity projects increases by 0.238 units.

The mean score on the extent in which accountability of funds expenditure towards Kenya Power Last Mile Connectivity projects was done was 2.67. The increase in revenue generation as a result of Kenya power last mile connectivity projects was 1.29. A mean score of 2.70 was obtained on the increase in the number of customers connected to electricity as a result of Kenya power last mile connectivity projects. The mean score obtained in regard to the extent in which transformer power optimization has been achieved through Kenya power last mile connectivity project was done was 3.09. Mean score of 1.14 was obtained in establishing the extent in which customer satisfaction levels have increased as a result of Kenya power last mile connectivity projects. The following multiple regression model was arrived at;  $Y = 0.179 + 0.250X_1 + 0.208X_2 + 0.213X_3 + 0.238X_4 + 0.010249$ , where;  $X_1$  = Project Initiation Process,  $X_2$  = Project Planning,  $X_3$  = Project Execution and  $X_4$  = Project Control. The regression model had an R Square value of 0.802, which indicates that 80.2% of the variation in performance of Kenya power last mile connectivity projects in Nakuru County can be explained by project initiation, project planning, project execution and the project control. The model has a statistically significant predictive capability as shown by  $F(4, 120) = 121.295$ , p-value less than 0.05.

### **5.3 Conclusions of the Study**

In regard to the influence of project initiation on performance of Kenya power last mile connectivity projects in Nakuru County, the study concludes there is statistically significant influence of project initiation aspects on Performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. Focusing on the influence of project planning on Performance of Kenya power last mile connectivity projects in Nakuru County, it is concluded that there is statistically significant influence of project planning aspects on Performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.

In respect to the influence of project execution on performance of Kenya power last mile connectivity projects in Nakuru County, the study concludes that there is statistically significant influence of project execution aspects on Performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. On the influence of project control on performance of Kenya power last mile connectivity projects in Nakuru County, the study concludes that there is statistically significant influence of project control on Performance of Kenya power last mile connectivity projects in Nakuru County, Kenya.

### **5.4 Recommendations of the Study**

This study recommends Kenya Power to identify all project stakeholders before commencing of Kenya Power Last Mile Connectivity projects. This recommendation is based on relatively low mean obtained on this metric. This will ensure efficiency in the other stages of project implementation. This study also recommends that all procurement undertakings to be done prior to execution of Kenya Power Last Mile Connectivity projects. There was small extent in which this consideration was made.

The coordination of human resources during the execution of Kenya Power Last Mile Connectivity projects was found to be low and therefore the study recommends Kenya Power to improve on employee supervision to ensure there is optimum output by each employee. This study also recommends risk mitigation controls to be put in place to monitor Kenya Power Last Mile Connectivity projects. The study makes this recommendation because the study found a low extent in which Kenya Power puts this aspect into consideration. In addressing Performance aspects of Kenya Power Last Mile Connectivity projects, the study recommended Kenya power to first consider project initiation aspects, followed by project control, execution and lastly project planning aspects.

### **5.5 Suggestion for further Research**

In examine project control measure that Kenya power has put in place to monitor implementation of its Kenya Power Last Mile Connectivity projects, there was lack of consensus on



how tracking of scope accomplishments against the set performance targets was being done. Therefore, the study suggests the following aspects to be examined for further studies:

1. A further investigation to be done on the utilization of monitoring and evaluation aspects in project implementation.
2. A further study can be done on the relationship between the project objectives and project performance and to include time aspects of setting up project objectives

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## APPENDICES

### Appendix i: Letter of Transmittal

Francis Xavier Kweyu,  
P.O Box 14990 -20100,  
Nakuru.

Dear Respondents,


My name is Francis Xavier Kweyu, a student pursuing Masters of Project Planning and Management course at the University of Nairobi, ODeI Campus. I am undertaking a research project entitled **“Influence of Project Management Processes on Performance of Kenya Power Last Mile Connectivity Projects in Nakuru County, Kenya”** as part of my degree program.

With a view of collecting data for the above research project, I intend to undertake interviews with key informants involved with the last mile project at Kenya power within Nakuru County. You have been identified as a key informant in the study. The collected data in the study was used only for academic purposes and all the responses was kept anonymous in writing of the report.

Yours Faithfully,

Francis Xavier Kweyu.

## Appendix ii: Research Permit by NACOSTI



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

Telephone: +254-20-3213471,  
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Fax: +254-20-318245, 318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

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

Date: **18<sup>th</sup> August, 2018**

Ref. No: **NACOSTI/P/18/34083/24328**

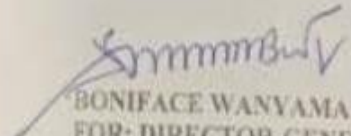
Francis Xavier Kweyu  
University of Nairobi  
P.O. Box 30197-00100  
NAIROBI.

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *"influence of project management processes on performance of Kenya Power Last Mile Connectivity Projects in Nakuru County, Kenya."* I am pleased to inform you that you have been authorized to undertake research in **Nakuru County** for the period ending **17<sup>th</sup> August, 2019**.

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

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

  
**BONIFACE WANYAMA**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Nakuru County.

The County Director

THIS IS TO CERTIFY THAT:  
**MR. FRANCIS XAVIER KWEYU**  
of UNIVERSITY OF NAIROBI, 0-20100  
NAKURU, has been permitted to conduct  
research in Nakuru County

on the topic: **INFLUENCE OF PROJECT  
MANAGEMENT PROCESSES ON  
PERFORMANCE OF KENYA POWER LAST  
MILE CONNECTIVITY PROJECTS IN  
NAKURU COUNTY, KENYA**

for the period ending:  
**17th August, 2019**

Applicant's  
Signature

Permit No : NACOSTI/P/18/34083/24328  
Date Of Issue : 18th August, 2018  
Fee Received : Ksh 1000



*[Signature]*  
Director General  
National Commission for Science,  
Technology & Innovation

#### CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
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REPUBLIC OF KENYA



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**RESEARCH CLEARANCE  
PERMIT**

Serial No.A 20181



### Appendix iii: Research Questionnaire for Turnkey Contractors

## INFLUENCE OF PROJECT MANAGEMENT PROCESSES ON PERFORMANCE OF KENYA POWER LAST MILE CONNECTIVITY PROJECTS IN NAKURU COUNTY, KENYA

**Instructions:** Please fill in the questionnaires as honestly as possible. Kindly do not put any identifying details on the questionnaire. Answer the questions by ticking the choice that best describes your response. Your responses will be kept confidential.

### Part A: Background Information

1. What is your gender?

Male ( )      Female ( )

2. What is your age group?

Below 20 Years ( )      20-30 Years ( )      30-40 Years ( )  
40-50 Years ( )      Over 50 Years ( )

3. Which department do you belong to at Kenya Power?

Design and Construction ( )      Finance ( )      Supply Chain ( )  
Marketing ( )      Technical Services ( )      Customer Service ( )

4. What is your highest education level?

Secondary School ( )      Diploma Level ( )  
Graduate Level ( )      Post Graduate ( )

5. How many years have you worked on Kenya Power Last Mile Connectivity Projects?

Below 1 year ( )      1-2 Years ( )      Above 3 Years ( )

### Part B: Project Initiation Process and Performance of Kenya Power Last Mile Connectivity Projects

The following statements are used to measure the influence of project initiation process on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. Using a five point Likert scale as follows; **0=No Extent, 1=Small Extent, 2=Moderate Extent, 3=Large Extent, And 4= Very Large Extent**; please indicate the extent of agreement to the statements.

	<b>To what extent do you agree that;</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>6.</b>	Determination of all objectives of Kenya Power Last Mile Connectivity projects is done during project initiation phase.					
<b>7.</b>	Enough financial resources were set aside during initiation phase of Kenya Power Last Mile Connectivity projects					
<b>8.</b>	All stakeholders were identified before commencing of Kenya Power Last Mile Connectivity projects					
<b>9.</b>	Mobilization of all human resources was done during the initiation stages of Kenya Power Last Mile Connectivity projects					
<b>10.</b>	Frequent meetings were organized with structure agendas before commencing of Kenya Power Last Mile Connectivity projects					

### **Part C: Project planning and Performance of Kenya Power Last Mile Connectivity Projects**

The following statements are used to measure the influence of project planning on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. Using a five point Likert scale as follows; **0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent**; please indicate the extent of agreement to the statements.

	<b>To what extent do you agree that;</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>11.</b>	Stakeholders are involved in all planning meetings of Kenya Power Last Mile Connectivity projects					
<b>12.</b>	Kenya power plans for all resource requirements needed in execution of Kenya Power Last Mile Connectivity projects					
<b>13.</b>	All workload required for Kenya Power Last Mile Connectivity projects is distributed to different stakeholders					
<b>14.</b>	All procurement undertakings are done prior to execution of the Kenya Power Last Mile Connectivity projects					
<b>15.</b>	All action plans are designed during the planning stage of Kenya Power Last Mile Connectivity projects					

### **Part D: Project execution and Performance of Kenya Power Last Mile Connectivity Projects**

The following statements are used to measure the influence of project execution on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. Using a five point Likert scale as follows; **0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent**; please indicate the extent of agreement to the statements.

	<b>To what extent do you agree that;</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>16.</b>	There is proper coordination of human resources during the execution of					

	Kenya Power Last Mile Connectivity projects					
17.	There is proper management of the available funds for the execution of Kenya Power Last Mile Connectivity projects					
18.	There is timely payment of diverse third parties such as contractors, suppliers etc of Kenya Power Last Mile Connectivity projects					
19.	There is proper coordination of diverse stakeholders during the execution of Kenya Power Last Mile Connectivity projects					
20.	There is proper management within the department and cross functional management in executing Kenya Power Last Mile Connectivity projects					

### Part E: Project control and Performance of Kenya Power Last Mile Connectivity Projects

The following statements are used to measure the influence of project control on performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. Using a five point Likert scale as follows; **0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent**; please indicate the extent of agreement to the statements.

	To what extent do you agree that;	0	1	2	3	4
21.	There is proper tracking of scope accomplishments against the set performance targets.					
22.	There are proper risk mitigation controls to monitor Kenya Power Last Mile Connectivity projects					
23.	There is regular site visits to monitor the progress of Kenya Power Last Mile Connectivity projects					
24.	There is proper control of expenditure for Kenya Power Last Mile Connectivity projects to align with the budgeted funds					
25.	There is proper utilization of time in executing different tasks of Kenya Power Last Mile Connectivity projects					

### Part F: Performance of Kenya Power Last Mile Connectivity Projects

The following statements are used to measure Performance of Kenya power last mile connectivity projects in Nakuru County, Kenya. Using a five point Likert scale as follows; **0=No extent, 1=small extent, 2=moderate extent, 3=large extent, and 4= very large extent**; please indicate the extent of agreement to the statements.

	To what extent do you agree that;	0	1	2	3	4
26.	There is accountability of funds expenditure towards Kenya Power Last Mile Connectivity projects					

<b>27.</b>	Kenya Power has increased revenue generation as a result of Kenya power last mile connectivity projects					
<b>28.</b>	There is high number of customers connected to electricity as a result of Kenya power last mile connectivity projects					
<b>29.</b>	High power transformer optimization has been achieved through Kenya power last mile connectivity projects					
<b>30.</b>	Customer satisfaction levels have increased as a result of Kenya power last mile connectivity projects					

**Thank you for your time and responses**

## **Appendix iv: Interview Guide for KPLC Departmental Heads**

### **Background Information**

Key informants to detail their involvements on Last Mile Project including the specific roles undertaken

1. Key informants to detail the last mile project targets for their departments/section of work
2. Have those targets been met?
3. What are the challenges (if any) leading to the last mile project performance aspects in your department?
4. What aspects have influence the last mile project performance targets in your department?

### **Project Initiation Process**

1. In your department, how were the following aspects factored in during project initiation to meet your departmental targets relating to Last mile projects
  - Financial resources
  - Human resources
  - Technical expertise of participants
  - Frequency of meetings
  - Structure of meetings including agenda's
  - Stakeholders involved in the planning process
2. In what ways have the above noted aspects influenced the last mile project performance aspects?
3. What aspects would you say were done well at the project initiation level in your department? In what ways have they contributed to Performance of the last mile project?
4. What aspects would you say were not done well at the project initiation level in your department? In what ways have they contributed to Performance of the last mile project?

### **Project planning and Project Performance**

5. Which aspects of project planning were undertaken at your department in last mile project?  
How important were those aspects in the last mile project performance?
6. How were the following factors considered in your project planning aspects?
  - Resources requirements
  - Project control mechanisms
  - Risk management aspects
  - Technical expertise required
7. Which project management tools are utilized in project planning in your department?

8. What other aspects of project planning have influenced project performance? In what ways did those factors influence project performance?

### **Project execution and Project Performance**

9. In what ways have the following aspects influenced last mile project performance in your department?
- Human resources availability and management
  - Financial resources availability and management
  - Payment to diverse third parties such as contractors, suppliers etc
  - Coordination aspects amongst diverse stakeholder
  - Management aspects within the department and cross functional management
  - Resources coordination aspects
10. What other aspects have influence project execution aspects and in what ways?

### **Project control and Project Performance**

11. In what ways are the following aspects tracked in your department in respect to last mile project performance? And how important are those aspects in project performance aspects?
- Time Usage
  - Expenditures
  - Scope Accomplishments Against The Set Performance Targets.
  - Adherence To Set Timelines
  - Scope Of The Exercise
  - Set Budgets,
  - Customer Satisfaction Levels.
12. What other project controls have impacted on last mile project in your department?

# INFLUENCE OF PROJECT MANAGEMENT PROCESSES ON PERFORMANCE OF KENYA POWER LAST MILE CONNECTIVITY PROJECTS IN NAKURU COUNTY, KENYA

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