FACTORS INFLUENCING THE IMPLEMENTATION OF ELECTRICITY POWER EXPANSION PROJECTS IN KENYA. CASE OF MANDERA EAST SUB COUNTY.

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2020

DECLARATION

This Research Project is my original work and has not been presented for a degree award in this or any other University.

SIGNATURE: …….. DATE: …….

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L50/84591/2016

This Research Project has been submitted for examination with the approval of the University Supervisor.

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DEDICATION

This research is dedicated to my dearest wife Tasneem Ibrahim,my sons Mahir Abdirizack and Munir Abdirizack and my Father Ibrahim Hassan for their encouragement during my study

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I first of all pass my sincere gratitude to the almighty God who kept me strong throughout the course and has enabled me to complete this dissertation

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LIST OF ABBREVIATIONS

RE	rural electrification
UEB	Uganda Electricity Board
REB	Rural Electrification Board
REA	Rural Electrification Agency
KPLC	Kenya Power and Lighting Company
ULCPDP	Updated Least Cost Power Development Plan
IEA	International Energy Agency
SSA	Sub- Saharan Africa
TOC	Theory of constraints
PPP	Public - private partnerships

ABSTRACT

The electric power segment in Kenya is at present unbundled into Generation, Transmission and Dissemination. Most government ventures flop because of absence of legitimate administration practices and usage. The study was set to investigate factors influencing the implementation of electricity power expansion projects in Kenya. Case of Mandera East Sub County. The study was guided by the main objectives; To examine the influence of availability of financial resources on the implementation electricity of power expansion projects, to establish the influence of community support on implementation of electricity power expansion projects and to determine the influence of leadership support on the implementation of electricity power expansion projects in Mandera East Sub County .The researcher used descriptive research design. The study targeted 10 project managers and 70 project team managers. Questionnaires were used to collect data from the respondents. From the research findings, most of the respondents indicated that availability of financial resources had effect on the implementation of electricity power expansion projects. 90% of the respondents agreed to a very great extent that financial resources influence the implementation of electricity power expansion projects while only 10% agreed to a great extent. it was established that all (100%) the respondents agreed that community support affected the implementation of electricity power expansion projects. it was also established that 75% of the respondents indicated that community support influenced the implementation of electricity power expansion projects to a very great extent and 25% to a great extent. It was established that 55% of the respondents strongly agreed that Government leaders communicate the requirements of expansion projects to all concerned parties and 45% agreed while none of them disagreed which was an indication that all the respondents supported the statement. It was also revealed that 70% of the respondents strongly agreed while 30% agreed that top management in the sub county is involved in the planning and monitoring of the projects and resource allocation. The study findings were; that financial difficulties are the major cause of poor implementation of projects leading to delay in the timely completion of the expansion of projects in Mandera East Sub County, that community support and leadership support affect the implementation of electricity power expansion projects in Mandera East Sub County.it was recommended that Mandera East Sub County should set objectives, assess assets, resources, and estimate future financial needs and making plan to achieve monetary goals and also the financial activities should be planned for, recorded, monitored and controlled for effective project implementation. The study suggested that a similar study to be carried out in a different county and different objective should be adopted.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Electricity supply is almost synonymous with economic growth as one cannot talk about the economic growth of a country without mentioning electric power supply (Sanusi, 2014). The global outlook of electric power is characterized by growing demand. This is evidenced by the ever increasing rate of urbanization, rapid population growth and expansion in global economy. yet the increased demand has not been met (IRENA, 2017). Practical Action (2013) notes that, approximately 300 million pupils worldwide go to schools with no electricity supply. This is clear evidence that the sector in the global scenario is marred with a number of challenges hence making it difficult to meet the demand for electric power.

Despite widely recognized importance, electricity is not available everywhere with many people still depending on alternative sources of energy such as wood, charcoal and kerosene (Pellegrin&Tasciotti, 2012). Although literature indicates that rural electrification (RE) is a global phenomenon,1.3 billion people in the world do not have access to electricity, representing 18 percent of the global population, many of them live in Africa and South Asia (IEA, 2013). Bringing electricity to rural areas started in United States of America (USA) in 1920s and by 1965, all the rural areas in USA had electricity (Katie, 2010). All developed countries and some Asian countries such as Vietnam, Thailand and Sri-Lanka currently have access to electricity in rural areas. First growing economies have higher rural electrification rates with Brazil having rural access rate of 88%, China 99%, India 52.1%, South Africa 55% by 2009 (Alexander, 2010).

The 1999 electricity act legalized the privatization of Uganda Electricity Board (UEB) and initiated the formation of numerous successor companies (Ezor et al, 2009). The act established the Rural Electrification Board (REB) and Rural Electrification Agency (REA) to promote, support, and provides rural electrification through Public and Private sector participation (Ezor et al, 2009). REB and REA operating semi-autonomously under the Ministry of Energy and Mineral Development solicit funding from parliament, donors and related agency surpluses through Rural Electrification Fund and recommends the appropriate type of project for selected areas (Ezor et al, 2009).

Kenya is among the largest economies in the Sub Saharan Region. The country has for some time had an ok performance in power generation and supply compared to other worse performing countries within the region (USAID, 2016). This performance would have moved from just being ok to doing great if power projects were treated like any other projects requiring adequate planning, monitoring, evaluation and stakeholder performance including and not limited to strong private sector involvement.

At present, electric power segment in Kenya is unbundled into Era, Transmission and Dissemination. Generation includes Kenya Power Generating Organization (KenGen) and Free Power Makers which are associated with electrical energy generation. Transmission and conveyance is finished by Kenya Power and Lighting Company (KPLC) and includes transportation of the electrical vitality from the creating stations to the heap focuses and retailing it to the clients (GOK, 2007). The dynamic idea of the earth and expanding aggressiveness is driving many benefit and non-benefit associations to reevaluate on the most proficient method to stay focused. Creating nations are likewise investigating approaches to understand a higher and supportable development of the economy in a more impartial condition. Keeping in mind the end goal to make business esteem, more associations/open division is swinging to task administration to help them move past places of forceful

hindrance or equality. Pursue (2003) characterizes venture as "a progression of related occupations ordinarily coordinated toward a couple of essential yield and requiring a noteworthy timeframe. The electricity quarter in Nairobi County is currently unbundled into generation, Transmission and Distribution. Generation comprises of Kenya energy producing company (KenGen) and impartial energy manufacturers (IPPs) which are concerned in electrical power manufacturing. Transmission and distribution is accomplished by means of Kenya energy and lights employer (KPLC) and involves transportation of the electrical energy from the generating stations to the load centers and retailing it to the customers. There are future plans of unbundling transmission and distribution to enhance competition at the distribution level. The installed generation capacity in the county is approximately 2,295 MW. The IPPs contribute 606 MW to the national grid. The bulk of the installed capacity is hydro based (60%) while the rest is thermal and geothermal.

According to Stephen (2014), the electric power supply in Kenya is significantly insufficient and covers a mere 20% of the population. Experience has shown that past electric power projects have not realized the expectations in terms of their implementation and quality at entry. Stephen (2014) adds that in 2009, Kenya witnessed a significant reduction in electric power supply compared to the demand. This situation is attributed to the country's overreliance on hydroelectric power, which is greatly influenced by climatic variations.

The Service of Vitality of the Ministry of Energy and Petroleum and that of Kenya Power and Lighting Organization have thought of Updated Least Cost Power Development Plan (ULCPDP) 2008/2028. The plan shows the incoming generation projects and retirement of old ones to give a capacity of 4,871 MW by year 2028 at estimated cost of 5.1 billion US dollars (GOK, 2007). Similarly the transmission plan intends to construct approximately 5000km of transmission lines and other substation project at estimated cost of 538.6 million US dollars in a couple of years (GOK, 2007).

It is imperative for the power sector stakeholders to ensure that the success rate of these power projects is increased given the high cost and long implementation time for power projects. It is important to increase efficiency and effectiveness of the energy development process at all levels including planning, contracting and construction. This should be done while enhancing the local content (materials and services) and also human resources. This study, therefore, seeks to find out the factors influencing the implementation of electricity power expansion projects in Kenya.

1.2 Statement of the problem

Kenya like any other developing country is not an exception in facing an energy problem. According to International Energy Agency (IEA) (2008) overall electricity access rates in Sub- Saharan Africa (SSA) in 2008 was estimated at 28.5%, with the urban and rural area figures standing at 57.5% and 11.9%, respectively. Likewise, in Kenya, inadequate electricity generation capacity and an unreliable power supply have been perennial problems for over a decade (Nyoike, 2002). According to the Ministry of Environment and Natural Resource (2005) indicated that over 70% of total population in Kenya derive their source of energy from wood based where more than 93% of rural households depend on this source. KPLC (2006) electrification in Kenya's is below the SSA average with 15% overall access and a breakdown of 51.3% and 5% for urban and rural areas respectively. Statistics from Rural electrification Authority (REA) show that rural electrification has increased from 4 per cent in 2003 to 28 per cent in June 2012 (REA, 2012). The connectivity to electricity also varies from region to region; Nairobi 53.47%, Central 42.4%, North Eastern 14.5% and Western 14.7% (Kioko, 2013). Furthermore, the REP funds obtained from a 5% levy have been mandatory at the county level for all those electrified, thus, it is expected that this would have provided substantial income for achieving the desired increased rural coverage. This

electrification in Kenya's is below the SSA average with 15% overall access and a breakdown of 51.3% and 5% for urban and rural areas respectively. Despite this ambition, Kenya's rural population access to electricity is considerably lower than that of the urban population (more than 80%), with some 99.5% of rural households not having access to electricity (Rabah, 2005).

Kenya's installed capacity for electricity generation is estimated at 1,600 Megawatts according to the Kenya National Bureau of Statistics economic indicators (2012). This is against the population which has access to the electricity is less than 20% (KNBS economic survey 2012). According to the vision 2030 strategic plan, the national access to electricity is estimated at 20%, but the government of Kenya as part of its Vision 2030 aims to increase access to 40% by 2020. As per the Kenya power resettlement plan 2012, the current proportionate power demand by regions is estimated at 50% in Nairobi, 20% in west Kenya, 20% in the coast region as well and 10% in the mount Kenya region. This shows that the demand in MANDERA East is higher than the vision 2020 projections. Therefore, this study sought to investigate factors influencing implementation of electricity power expansion projects in Kenya.

1.3 Purpose of the study

The study was set to investigate factors influencing the implementation of electricity power expansion projects in Kenya. Case of Mandera East Sub County.

1.4 Research objectives

The research was guided by the following objectives

i. To examine the extent to which availability of financial resources influence the implementation of electricity power expansion projects in Mandera East Sub County.

ii. To establish the level at which community involvement influence the implementation of electricity power expansion projects in Mandera East Sub County.

iii. To determine the extent to which leadership support influence the implementation of electricity power expansion projects in Mandera East Sub County.

1.5 Research questions

i. To what extent does availability of financial resources influence the implementation of electricity power expansion projects in Mandera East Sub County?

ii. To what level does community involvement influence the implementation of electricity power expansion projects in Mandera East Sub County?

iii. To what extent does leadership support influence implementation of electricity power expansion projects in Mandera East Sub County?

1.6 Significance of the study

The research work may be of importance to the National Administration in understanding the issues that may be hindering the successful implementation of electricity projects in Nairobi which will also paint a picture of the whole country. This is relevant to the National Government as it informs achievement of energy access targets set by the Government including ensuring 100% access to electricity and modern cooking appliances by 2030; Enhancing energy efficiency at national level.

The study will provide additional information into the already existing body of knowledge regarding the electricity power generation and expansion projects in Kenya.

The findings of this study will enrich existing knowledge and hence will be of interest to both researchers and academicians who seek to explore and carry out further investigations. It will provide basis for further research.

The study is significant to Power Sector stakeholders i.e. Ken Gen, KPLC, IPPs and Mop who are the primary stakeholders on the influence of the development management practices on venture achievement and their role towards improving the project managers overall performance. It is hoped that this will lead to increase of successful projects resulting to lower electricity cost and improved quality of supply to customers.

1.7 Scope of the study

The study was carried out in Mandera East Sub County to establish how availability of finance, community support and leadership support influence the implementation of electricity power expansion projects.

1.8 Limitations of the study

The research came across uncooperative respondents were unwilling to participate in the study. This challenge was minimized by assuring the respondents that no names of the participants were used in reference to the study since the purpose of the research was only for academic. The researcher carried an introduction letter from the university as proof.

Other likely constraints were resources of finances and time. This was because a lot was expected to be undertaken within limited time that was available. A budget was a crucial tool to manage finances while a time schedule was required to manage time.

1.9 Assumptions of the study

The study assumed that the respondents involved were willing to answer the questions raised in the questionnaire honestly. It was also assumed that the data collection instruments answered the desired questions and that the sample represented the population.

1.10 Definition of significant terms

Energy Regulatory Authority Involvement: This is the responsibility, authority and

participation of the Energy Regulatory Authority towards ensuring reliability of power supply through monitoring, provision of funds and establishment of inter-agency collaboration policy.

Implementation- is the carrying out, execution, or practice of a plan, a method, or any design, idea, model, specification, standard or policy for doing something. As such, implementation is the action that must follow any preliminary thinking in order for something to actually happen.

Expansion - Expansion is the process of becoming greater in size, number or amount.

Project Implementation -The phase where visions and plans become reality; it forms the consistent inference, subsequently assessing, determining the plan and vision and finding the financier of the project (Dvir, Sadeh, &Malach-Pines, 2006).

Community involvement-it is the power to bring positive, measurable change to both communities in which you operate and to your business. It includes in-kind and financial donations, employee volunteer days, enduring nonprofit partnership and more.

Leadership-it is a process by which an executive can direct, guide and influence the behavior and work of others towards accomplishment of specific goals in a given situation

Resources – these refers to economic or productive factors required to directly undertake and accomplishing a project activity or used as a means in achieving desired outcomes. They can either be financial funds, human-the technical team, human labour or material resources and land

1.11 Organization of the study

This study was organized in to five chapters. Chapter one covered background of the study, statement of the problem, the purpose of the study, objectives of the study, research

questions, significance of the study, scope of the study, assumptions of the study, limitations of the study as well as the definitions of significant terms and organization of the study. Chapter two consist of literature review of researches done by other researchers on the topic and conceptual frame work .chapter three dealt with the research design ,target population, sample and sampling techniques, the research instruments, their validity and reliability, methods of data collection and analysis. Chapter four captures the data presentation, analysis and interpretation while chapter five gives the summary of the findings of the study, conclusions and recommendations of the study. This is followed by references and appendices sections.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section involved systematic identification, location and analysis of document containing information related to the study. Literature review made it possible for the researcher to come up with a clear and extensive study. It involved evaluation of any already existing literature related to the study to identify gaps in the previous studies. It began by reviewing the theoretical literature of implementation of electricity power expansion projects in Kenya.

2.2 Theoretical frame work

Various theories that make up a basis of this research are what form the theoretical framework. This study was guided by theory of constraints and Resource Based Theory.

2.2.1 Theory of Constraints

Theory of constraints (TOC) began as a production scheduling aid, developed by EliyahuGoldratt in the late 1970s, terming it as 'optimized production time table' and was quickly developed in to a software package commonly known as optimized production technology (Davis &Mabin, 2009). Ten years later, due to failures caused by the expectations associated with a turnkey package led Goldratt and others to realize that what was needed was to convince people to change ways, rather than tailor the package to simply automate their old policies and procedure – changes to their thinking and actions were needed if the potential gains were to be realized (Davis &Mabin, 2009).

According to Togar et al (2004) TOC aims to initiate and implement breakthrough improvements through focusing on a constraint that prevents a higher level of performance, further noting that TOC paradigm essentially states that every firm must have at least one constraint. Goldratt and Cox defined constraint as any element or factor that limits the system

from doing more of what it was designed to accomplish, that is achieving its goal (Togar et al, 2004). Sebastiano and Ragnhild (2014), revealed that what is considered as a constraint in project management can be categorized in to four; as political constraints (such as defined vision, mission, scope of projects), technical constraints (such as competencies, technologies, existing infrastructure and natural conditions like geology, landscape and climate), social constraints (such as codes of conduct, organizational hierarchies, personal relationships and accepted/expected behaviors) and administrative constraints (such as budgets, project schedules, scope, written contractual agreements among others). Theory of Constraints (TOC) challenges managers to rethink some of their fundamental assumptions about how to achieve the goals of their organizations, about what they consider productive actions, and about the real purpose of cost management. This theory relates to the factors that hinder or affect the implementation of electricity expansion projects e.g. availability of finance, community support and leadership support.

2.2.2 Resource Based Theory

Assets are contributions to an association's generation procedure, for example, capital, and gear, abilities of individual representatives, licenses, fund, and capable directors. Assets are either unmistakable or elusive in nature. With expanding adequacy, the arrangement of assets accessible to the firm has a tendency to wind up plainly bigger. Singular assets may not respect an upper hand. It is through the synergistic mix and joining of sets of assets that upper hands are framed. The Asset based Hypothesis (RBT) is a task administration hypothesis that is broadly utilized as a part of undertaking administration. It looks at how assets can drive upper hand (Killen, Mulvey, &Hitti, 2012).

The RBT has become one of the most influential project management theories cited in project management literature due to its immediate face validity, appealing core message, and ease to grasp and teach. However, these advantages don‘t come without criticism. Those who

are against the application of the RBT are criticizing areas that are mainly related to the state of the definitions that RBT is based on, the conceptual and empirical methodology, and so-called deficiencies of the concept. With the help of this theory one can understand how to utilize the available resources, select our suppliers, do contract reviews to accomplish and implement a given project effectively by prioritizing the project needs.

2.3 Empirical Review

This is the review of factors which influence the implementation of electricity power expansion projects.

2.3.1 Influence of availability of financial resources

Funding is a crucial part of any creative project or business. Project finance is the long-term financing of infrastructure and industrial projects based upon the projected cash flows of the project rather than the balance sheets of its sponsors (Kerzner 2009). Usually, a project financing structure involves a number of equity investors, known as 'sponsors', as well as a 'syndicate' of banks or other lending institutions that provide loans to the operation (Kerzner 2009). They are most commonly nonrecourse loans, which are secured by the project assets and paid entirely from project cash flow, rather than from the general assets or creditworthiness of the project sponsors, a decision in part supported by financial modeling. The financing is typically secured by all of the project assets, including the revenue producing contracts. Project lenders are given a lien on all of these assets and are able to assume control of a project if the project company has difficulties complying with the loan terms.

Generally, a special purpose entity is created for each project, thereby shielding other assets owned by a project sponsor from the detrimental effects of a project failure. As a special purpose entity, the project company has no assets other than the project. Capital contribution commitments by the owners of the project company are sometimes necessary to ensure that

the project is financially sound or to assure the lenders or the sponsors' commitment (Kerzner 2009).

Project finance is often more complicated than alternative financing methods. Traditionally, project financing has been most commonly used in mining, transportation, telecommunications and energy industries. More recently, particularly in Europe, project financing principles have been applied to other types of public infrastructure under public - private partnerships (PPP).

Finance is a major resource in project, without which it cannot operate and so the resource should be given the attention it deserves if the youth projects have to survive. Financial activities in any organization should be planned for, recorded, monitored and controlled if the projects have to be sustainable. Massie (2006) noted that the demand for careful project planning has made financial management a key activity in organizations and projects in general. Financial Management is the process of managing the financial resources, including accounting and financial reporting, budgeting, collecting accounts receivable, risk management, and insurance for a business.

According to Madison (2009), financial planning involves setting objectives, assessing assets and resources, estimating future financial needs and making plan to achieve monetary goals. Madison (2009) continued to suggest that, one systematic approach for attaining effective management performance is financial planning, budgeting and that sustainability of any project lies in effective financial management right from the implementation stage to post implementation phase. It is important to lay and plan our budget for the amount of money received (Kiogora, 2013).

2.3.2 The influence of community involvement

Expansion of electricity projects benefit more by involving local communities or suffer from absence of it (Vinod, 2003). In Bangladesh, setting up rural electrification committees to represent the local communities during project implementation helped in smooth implementation of projects through educating consumers, promoting wider use of electricity and obtaining right of way or way leave as well as encouraging consumers to connect power (Vinod, 2003). In Thailand, local leaders were encouraged to raise and contribute funds so that their constituents' can be supplied before planned time (Barnes & Floor, 2010).

Barnes and Floor (2006) show clearly that rural electrification programs can benefit greatly from the involvement of local communities or suffer because of its absence. Setting up a rural electrification committee to represent the local community can do, much to smooth the implementation of the program. The committee can play a crucial role in helping assess the level of demand, educating consumers in advance, encouraging them to sign up for a supply, and promoting the wider use of electricity.

The study conducted by Bongani (2013) on stakeholder perception of socio-economic benefits of rural electrification in Zimbabwe disclosed that educated rural people observed a lot of benefits from rural electrification while uneducated people did not realize and appreciate the importance of rural electrification. The study though important did not reveal, how that perception affected effectiveness of rural electrification program. It also did not cover other stakeholders other than direct beneficiaries of rural electrification program. Further, the study did not disclose how the rural population participated in rural electrification implementation program. Thomsett (2012) in an extensive examination of 20 failing projects over a period of 18 years expanded this criteria of success as: "satisfies stakeholder groups, meets functional requirements, meets quality expectations and requirements, within cost, within deadline, delivers sustained and actual benefits and provides

the team with professional satisfaction and learning". Although the causes for project success and failure have been the focus of numerous research studies, there has been no consensus on the issue. Ghana, as a developing country, is faced with a myriad of project management challenges both technical and nontechnical. For example, the very nature of project funding in Ghana poses a significant challenge for government as well as non-governmental agencies (Ofori&Sakyi, 2006).

2.3.3 Influence of leadership support

The literature of project management makes a strong sense for realizing and recognizing the importance of top management support (McComb et al., 2008). Furthermore, Green (2009) concluded after investigating the 213 R & D projects that the projects with top management support were less likely to be unsuccessful. In addition, Green (2009) termed the project with top management support as "sacred cows" which means that these types of projects seldom fail. Moreover, while studying the implementation of projects, several researchers have reported various aspects of top management support. For example, Guimareas&Igbaria (2007) argued that top management interests, understandings and encouragements are much important elements for project success. While of the researchers suggested that for successful implementation of projects, top management should represent themselves as project champions (McComb et al., 2008; Naranjo-Gil, 2009).

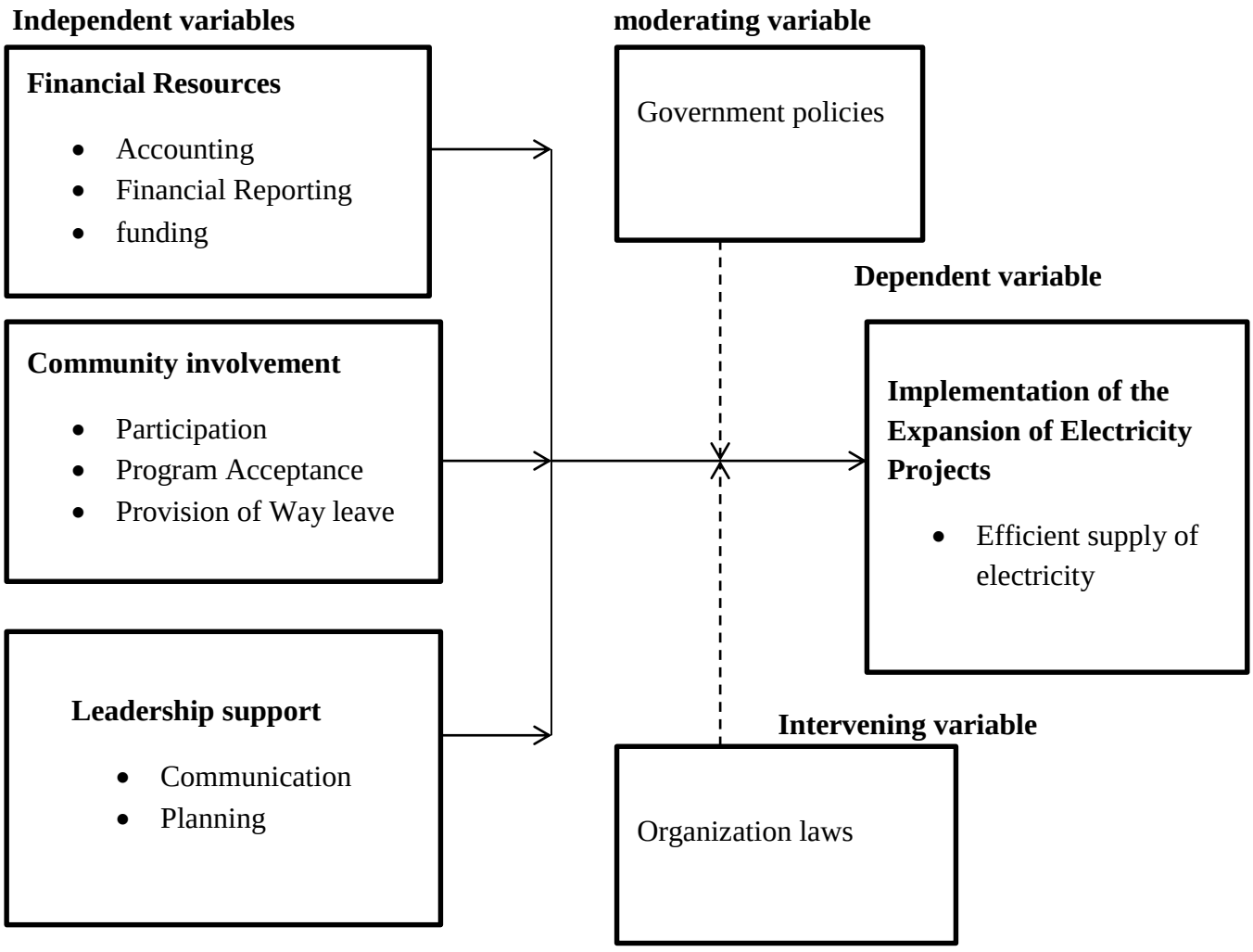
The scope of project leadership is wide as compared to traditional project management (Sumner et al., 2006). Similarly, project managers' leadership support has significant impact on project success (Geoghegan&Dulewicz, 2008). Moreover, leadership support has been considered as influential source for achieving the organizational success but still in project management role of project managers as leaders need to be discussed in detail (Turner et al., 2009). In addition, Young & Jordan (2008) discussed that top management support is often, discussed as a paradigm which is related to the project success alone. Although some authors

realized top management support with some desirable behaviors and attitudes (McComb et al., 2008; Naranjo-Gil, 2009), but they ignored the existence of top management as supporting variable to project leadership in relation to project success .

2.4 Conceptual frame work

Mugenda, (2008) defines conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. In this study, the dependent variable is implementation of electricity power expansion projects while the independent variables are financial resources, community support and leadership support.

Figure 1: Conceptual framework



2.5 Summary of the literature review

This chapter started with an introduction, theoretical framework and went on to look on the predictor variables influencing the implementation of the expansion of electricity projects. Since the variables influencing the implementation of the expansion of electricity projects are diverse, the chapter reviewed; financial resources, community involvement and leadership support. This chapter further looked at conceptual framework which was composed of independent and dependent variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter consists of research design, target population, sample and sampling techniques, research instruments, data collection procedure, validity and reliability of the research instruments and methods of data analysis.

3.2 Research design

The study adopted descriptive research design because it helps describe a specific group characteristic sand proportionally estimates peoples predictions and characteristics according to Schindler (2003) This design was adopted because according to Mugenda & Mugenda (2003) this design inquires through a systematic and empirical ways in that the researcher cannot control the outcome as their manifestation has appeared already or because the independent variable cant inherently be manipulated.

3.3 Target population

A population is an entire group of individuals, events or objects having common characteristics that conform to a given specification (Mugenda & Mugenda, 2012). According to Mugenda & Mugenda (2003) population refers to an entire group of individuals, events or objects having a common observable characteristic. The target population of this study consisted of 10 project managers and 70 project team managers. This is as presented in Table 3.3.1

Table 3.3.1 Target population

Category	Target population	Percentage
Project managers	10	12.5%
Project team members	70	87.55
Total	**80**	**100**

3.4 Sampling and sampling procedures

A sample is referred to as a subset of a population selected especially with interest to study some characteristics of the population. Sampling is the process of selecting, events, people or organizations from a population we are interested in and the results obtained represent the entire population. The sample size is effective in research because a researcher is unable to reach the entire population due to constraints of time and money (Mugenda &Mugenda, 2003). A sample of 24 respondents was selected which was 30% of the total population. Stratified random sampling method was used where all the project managers and project team managers had an equal chance of being selected as a sample. Table 3.4.1 shows the sample sizes of different target population.

Table 3.4.1 Sample size

Category	Target population	Sample size	Percentage
Project managers	10	3	12.5
Project team members	70	21	87.5
Total	**80**	**24**	**100**

From the table above, 87.5% of the respondents were project team members and 12.5% were project managers.

3.5 Research instruments

The researcher used questionnaires to collect data from the respondents. They included both open and closed-ended questions. The questionnaires were distributed and picked later. This method was easier because all the answers were written and later submitted to the researcher in good time for analysis. Questionnaires were sued in the study since they were presented in paper format. There was no opportunity for interviewer's bias. The questionnaires were drafted in such a way that they were simple and understandable in order to encourage high response rate.

3.6 Validity and reliability of research instruments

Validity and reliability are important in research as they are useful in strengthening propositions and conclusions. When properly used, they develop a strong foundation for a thorough and meaningful research to be conducted.

3.6.1 Validity of research instruments

Validity is the accuracy and meaningfulness of inferences which are based on research results (Mugenda and Mugenda 2003). In this study, validity was measured through the test instruments ability to measure what it is supposed to measure. To ensure validity in this study, the researcher carried out a pre-test study which included project managers and project team members. All the shortcomings noticed were corrected with the advice of the supervisor.

3.6.2 Reliability of research instruments

Reliability of a measuring instrument is the degree of consistency with which it measures whatever it is meant for (Ary 1979). Reliability is a measure of the degree to which a research

instrument yields consistent results or data after repeated trial. However reliability in the research is influenced by random error (WOCCU, 2006). To ensure reliability, the researcher used split-half technique to calculate reliability coefficient (Spearman-Brown coefficient formulae) which was within the recommended reliability coefficient of between 0.7-1 (Nachmias & Nachmias 1996).

3.7 Data collection procedures

To implement the general objective plans of a research study, methods of data collection must always be used. McMillan and Schumacher (1993) argues that in order to begin the research, the researcher should formally acquire an introduction letter from the university identifying who he/she is, stating the intent of the student to conduct a research, the purpose and within what period.

3.8 Data analysis procedures

Yin (2003) pointed out that analysis of data involves examining, categorizing, tabulating or otherwise combining the evidence to address the initial propositions of a study. Before data entry, screening would be done. Data screening ensured that responses were legible and understandable and that responses were within an acceptable range and were complete, and all of the necessary information is included (Leary 2004). The data was then be coded and checked for any errors and omissions (Kothari, 2004). It was analyzed both qualitatively and quantitatively. Descriptive statistics were used to summarize the data including percentages and frequencies and tables were used for presentation.

3.9 Ethical consideration

The data collected as well as the results was highly confidential. To ensure this level of confidentiality, full consent of the participants was sought and they were advised not to write their identities anywhere on the questionnaires.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presented the results of the study. The results were obtained after analyzing, interpreting and presenting the data in tables. The discussion of findings had been arranged in accordance with demographic characteristics of respondents' and objectives of the study as were formulated in chapter one of this report. The interpretation of the data intended to enable the researcher make appropriate conclusions and recommendations for better understanding of the research problem.

4.2 Response rate

The researcher administered 24 questionnaires to the respondents and 20 of them were returned duly filled. This information is presented in Table 4.1 below

Table 4.1 Response rate

Category	Frequency	Percentage
Returned	20	83.3%
Not returned	4	16.7%
Total	**24**	**100**

From Table 4.1 above, the return rate was 83.3%.

4.3 Demographic information

4.3.1 Gender

The researcher established the gender distribution as shown in Table 4.2

Table 4.2 Gender

Gender	Frequency	Percentage
Male	12	60
Female	8	40
Total	**20**	**100**

Majority 60% of the respondents were male while 40% were female, these findings show that both genders were involved in this study and thus the findings of the study did not suffer from gender biasness.

4.3.2 Age brackets

The researcher sought to find out the age bracket of respondents. The response were shown in Table 4.3

Table 4.3 Age brackets

Age	Frequency	Percentage
20-25 years	1	5
25-30 years	2	10
30-35 years	6	30
35-40 years	7	35
over 40 years	4	20
Total	**20**	**100**

The Table above showed that 35% of the respondents were aged 35-40, 30% were between 30-35 years 20% were over 40 years 10% were between 25-30 years and 5% were between 20-25 years. The study therefore concluded that respondents between 30 years to over 40 years exceeded others.

4.3.3 Education level

The researcher sought to establish the education level of the respondents and the results were as presented in the Table 4.4 below

Table 4.4 Education level

Education level	frequency	Percentage %
Post graduate	2	10%
Undergraduate	8	40%
Diploma	7	35%
Certificate	3	15%
Total	**20**	**100**

From Table 4.4 above, it was established that 40% of the respondents were undergraduate, 35% were diploma holders, 15% had certificates and only 10% were post graduates. This showed that majority of the respondents had attained a higher level of education and would therefore contribute adequately to the study.

4.3.4 Duration of service

The respondents were asked to indicate how long they had worked in electricity power expansion projects. The responses were as shown in the Table below

Table 4.5 Duration of service

	Frequency	Percentage
Less than a year	0	0
1-5 years	2	10
5-10 years	5	25
Over 10 years	13	65

Total	**20**	**100**

From the above Table, 65% had worked in electricity power expansion projects for over 10 years, 25% for 5-10 years and 10% for 1-5 years. This was an indication that the respondents had served for long enough be able to handle the questionnaires

4.3.5 Main profession

The respondents were asked to indicate their main profession and the results were as follows

Table 4.6 Main profession

Profession	**Frequency**	**Percentage**
Project management	4	20
Engineering	9	45
Technical	5	25
Procurement	2	10
Total	**20**	**100**

Table 4.6 above showed that 45% of the respondents were in engineering, 25% technical, 20% project management and 10% in procurement. This indicated that the sample was made up of respondents from different professions.

4.4 .1 Influence of availability of financial resources on the implementation of electricity power expansion projects

The respondents were asked to indicate whether the availability of financial resources affected the implementation of electricity power expansion projects and the results were as presented in the Table below.

Table 4.7 Do financial resources affect the implementation of electricity power expansion projects

Responses	Frequency	Percentage
Yes	15	75
No	5	25
Total	**20**	**100**

Table 4.7 above it was revealed that a large number 75% of the respondents indicated that availability of financial resources had effect on the implementation of electricity power expansion projects.

The study further sought to establish the extent to which the availability of financial resources influenced the implementation of electricity power expansion projects. The results were as shown in the Table below

Table 4.8 The extent to which financial resources influence the implementation of electricity power expansion projects

The extent	Frequency	Percentage
To a very great extent	18	90
To a great extent	2	10
To a moderate extent	0	0
To a low extent	0	0
To a very low extent	0	0
Total	**20**	**100**

Majority (90%) of the respondents agreed to a very great extent that financial resources influence the implementation of electricity power expansion projects while only 10% agreed to a great extent.

The respondents were given statements on a five-point likert scale to indicate their extent to which they concur regarding the influence of financial resources on implementation of electricity power expansion projects in Kenya. The results were as shown in the Table below.

Table 4.9 Rate of agreement with statements on financial resources

Statement		**SD**	**D**	**N**	**A**	**SA**	**Total**
unit increase in financial resources would lead to increase in the implementation of electricity power expansion projects	Frequency(F) Percentage (%)	0 0	0 0	0 0	1 5	19 95	**20** **100**
Project budgeting is performed at the initial stages of project planning and usually in parallel with the development of the project schedule.	Frequency Percentage (%)	0 0	0 0	0 0	0 0	20 100	**20** **100**
Financial difficulties are the major cause of poor implementation of projects leading to delay in the timely completion of projects	Frequency Percentage (%)	0 0	0 0	0 0	0 0	20 100	**20** **100**

95% of the respondents strongly agreed while 5% agreed that unit increase in financial resources would lead to increase in the implementation of electricity power expansion projects. All the respondents (100%) strongly agreed that project budgeting is performed at the initial stages of project planning and usually in parallel with the development of the

project schedule. Lastly 100% of the respondents strongly agreed that financial difficulties are the major cause of poor implementation of projects leading to delay in the timely completion of projects.

4.4.2 Influence of community support on the implementation of electricity power expansion projects.

The study sought to establish whether community support affect the implementation of electricity power expansion projects and the results were as presented in Table 4.10 below

Table 4.10 Influence of community support

Responses	Frequency	Percentage
Yes	20	100
No	0	0
Total	**20**	**100**

From Table 4.10 above, it was revealed that all (100%) the respondents agreed that community support affected the implementation of electricity power expansion projects.

The study further sought to establish the extent that community support influences the implementation of electricity power expansion projects. This was represented in Table 4.11

Table 4.11 Extent to which community support influence the implementation of electricity power expansion projects

The extent	Frequency	Percentage
To a very great extent	15	75
To a great extent	5	25
To a moderate extent	0	0

To a low extent	0	0
To a very low extent	0	0
Total	**20**	**100**

From the table above, it was established that 75% of the respondents indicated that community support influenced the implementation of electricity power expansion projects to a very great extent and 25% to a great extent. From these findings it can be concluded that community support is a serious factor influencing implementation of electricity power expansion projects in Kenya. The respondents were further given statements to indicate their level of agreement or disagreement with them. Their responses were as presented in the Table below.

Table 4.12 Rate of agreement with statements on community support.

Statement		**SD**	**D**	**N**	**A**	**SA**	**Total**
Community participation in power expansion project is done through public hearing and public committees	Frequency(F) Percentage (%)	0 0	0 0	0 0	2 10	18 90	**20** **100**
The government has created awareness of proper use of electricity as well as educating the community against vandalism of power expansion projects	Frequency Percentage (%)	0 0	0 0	0 0	0 0	20 100	**20** **100**

90% of the respondents strongly agreed while 10% agreed that Community participation in power expansion project is done through public hearing and public committees. On whether the government has created awareness of proper use of electricity as well as educating the community against vandalism of power expansion projects all (100%) of the respondents strongly agreed.

4.4.3 Influence of leadership support on the implementation of electricity power expansion projects

The researcher wanted to know if leadership support had effect on the implementation of electricity power expansion projects and the respondents' responses were as indicated in Table 4.13

Table 4.13 Influence of leadership support

Response	Frequency	Percentage
Yes	9	45
No	11	55
Total	**20**	**100**

From the Table above, 45% of the respondents agreed that leadership support affected the implementation of electricity power expansion projects while 55 % disagreed. This was an indication that there were other factors that greatly influenced the implementation of electricity power supply like availability of finance and community support.

The researcher sought to establish the extent that leadership support influenced the implementation of electricity power expansion project. The Table below indicates their responses.

Table 4.14 Extent that leadership support influenced the implementation of electricity power expansion project

The extent	Frequency	Percentage
To a very great extent	0	0
To a great extent	2	10
To a moderate extent	11	55
To a low extent	7	35
To a very low extent	0	0
Total	**20**	**100**

It was revealed that indicated that leadership support influenced the implementation of electricity power expansion projects to a moderate extent, 35% to a low extent and 10% to a great extent. The respondents were asked to indicate the extent of agreement with some statements on leadership support where the results were as given in the Table below.

Table 4.15 Rate of agreement with statements on leadership support.

Statement		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Total
Government leaders communicate the requirements of expansion projects to all concerned parties	Frequency(F) Percentage (%)	11 55	9 45	0 0	0 0	0 0	20 100
Top management in the sub county is involved in the planning and monitoring of the projects and	Frequency Percentage (%)	12 70	8 30	0 0	0 0	0 0	20 100

resource allocation							

From the table above, it was established that 55% of the respondents strongly agreed that Government leaders communicate the requirements of expansion projects to all concerned parties and 45% agreed while none of them disagreed which was an indication that all the respondents supported the statement. It was also revealed that 70% of the respondents strongly agreed while 30% agreed that top management in the sub county is involved in the planning and monitoring of the projects and resource allocation

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSIONS, RECOMMENDATION AND SUGGESTIONS FOR FURTHER STUDIES

5.1 Introduction

This chapter presented the discussion of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to, the conclusions and recommendations drawn were focused on addressing the objective of the study.

5.2 Summary of the finding

It was revealed that a large number 75% of the respondents indicated that availability of financial resources had effect on the implementation of electricity power expansion projects. 90% of the respondents agreed to a very great extent that financial resources influence the implementation of electricity power expansion projects while only 10% agreed to a great extent. 95% of the respondents strongly agreed while 5% agreed that unit increase in financial resources led to increase in the implementation of electricity power expansion projects. All the respondents (100%) strongly agreed that project budgeting was performed at the initial stages of project planning and usually in parallel with the development of the project schedule. Lastly 100% of the respondents strongly agreed that financial difficulties are the major cause of poor implementation of projects leading to delay in the timely completion of projects.

It was also established that all (100%) the respondents agreed that community support affected the implementation of electricity power expansion projects. it was also established that 75% of the respondents indicated that community support influenced the implementation of electricity power expansion projects to a very great extent and 25% to a great extent. From

those findings it was concluded that community support was a serious factor that influenced implementation of electricity power expansion projects in Kenya. 90% of the respondents strongly agreed while 10% agreed that Community participation in power expansion project is done through public hearing and public committees. On whether the government has created awareness of proper use of electricity as well as educating the community against vandalism of power expansion projects all (100%) of the respondents strongly agreed.

Lastly, 45% of the respondents agreed that leadership support affected the implementation of electricity power expansion projects while 55 % disagreed. This was an indication that there were other factors that greatly influenced the implementation of electricity power supply like availability of finance and community support. It was revealed that indicated that leadership support influenced the implementation of electricity power expansion projects to a moderate extent, 35% to a low extent and 10% to a great extent. It was established that 55% of the respondents strongly agreed that Government leaders communicate the requirements of expansion projects to all concerned parties and 45% agreed while none of them disagreed which was an indication that all the respondents supported the statement. It was also revealed that 70% of the respondents strongly agreed while 30% agreed that top management in the sub county is involved in the planning and monitoring of the projects and resource allocation.

5.3 Conclusion of the study

The study concluded that financial resources affect the implementation of electricity power expansion projects in Kenya Power. Project budgeting is performed at the initial stages of project planning and usually in parallel with the development of the project schedule. Financial difficulties are the major cause of poor implementation of projects leading to delay in the timely completion of the expansion of projects in Mandera East Sub County. The study

also concluded that community support and leadership support affect the implementation of electricity power expansion projects in Mandera East Sub County.

5.4 Recommendations of the study

The study recommends that Mandera East Sub County should set objectives, assess assets, resources, and estimate future financial needs and making plan to achieve monetary goals and also the financial activities should be planned for, recorded, monitored and controlled for effective project implementation.

5.5 Suggestion for further studies

The study suggested that a similar study to be carried out in a different county and different objective should be adopted.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Appendix I: Introduction Letter

Dear Sir/Madam,

RE: REQUEST TO CARRY OUT DATA COLLECTION.

I am a student at the University of Nairobi. I am currently Carrying out a research study to fulfill the requirements of the Award of the degree of masters of arts in Project planning and management on the **FACTORS INFLUENCING THE IMPLEMENTATION OF ELECTRICITY POWER EXPANSION PROJECTS IN KENYA.CASE OF MANDERA EAST SUB COUNTY.** You have been selected to participate in this study and I would highly appreciate if you assist me by responding to all questions in the attached questionnaire as completely, correctly and honestly as possible. The information you will give will be treated with utmost confidentiality and will be used for research purposes of this study only.

Thank you in advance for your co-operation.

Yours faithfully,

HASSAN ABDIRIZACK IBRAHIM

APPENDIX TWO: QUESTIONNAIRE

Being one of the respondents you are requested to fill this questionnaire by either ticking or explaining where appropriate. The information gathered will be used strictly for academic purpose only and will be treated with utmost confidentiality.

PART A: DEMOGRAPHIC INFORMATION

1. What is your gender?

[ ] Male [ ] Female

2. In which of the following age brackets does your age fall?

[ ] 20-25 years [ ] 25-30 years [ ] 30-35 years [ ] 35-40 years [ ] over 40 years

3. What is your education level?

[ ] Post graduate [ ] undergraduate [ ] Diploma [ ] Certificate

4. How long have you worked in electricity power expansion projects?

[ ] Less than a year [ ] 1-5 years [ ] 5-10 years [ ] Over 10 years

5. Indicate your main profession

[ ] Project management [ ] Engineering [ ] Technical [ ] Procurement

PART B: INFORMATION RELATED TO RESEARCH OBJECTIVES

1. **Influence of financial resources on the implementation of electricity power expansion projects.**

6. In your own opinion, do financial resources affect the implementation of electricity power expansion?

[ ] **Yes** [ ] **No**

7. Indicate the extent to which availability of financial resources influence the implementation of electricity power expansion projects

[ ] To a very great extent [ ] To a great extent [ ] To a moderate extent [ ] To a low extent [ ] To a very low extent

8. State the extent to which you agree with the following statements on the influence of financial resources

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
unit increase in financial resources would lead to increase in the implementation of electricity power expansion projects					
Project budgeting is performed at the initial stages of project planning; usually in parallel with the development of the project schedule.					
Financial difficulties are the major cause of poor implementation of projects leading to delay in the timely completion of projects					

2. Influence of community involvement on the implementation of electricity power expansion projects.

9. Community involvement affects the implementation of electricity power expansion projects

[ ] Yes [ ] No

10. Indicate the extent that community involvement influences the implementation of electricity power expansion projects

[ ] To a very great extent [ ] To a great extent [ ] To a moderate extent [ ] To a low extent [ ] To a very low extent

11. State the extent to which you agree with the following statements on the influence of community involvement.

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
Community participation in power expansion project is done through both public hearing and public committees					
The government has created awareness of proper use of electricity by educating the community against vandalism of power expansion projects					

3. Influence of leadership support on the implementation of electricity power expansion projects.

12. Leadership support affects the implementation of electricity power expansion projects

[ ] Yes [ ] No

13. Indicate the extent that leadership support influences the implementation of electricity power expansion projects

[ ] To a very great extent [ ] To a great extent [ ] To a moderate extent [ ] To a low extent [ ] To a very low extent

14. State the extent to which you agree with the following statements on the influence of leadership support

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
Government leaders communicate the requirements of expansion projects to all concerned parties					
Top management in the sub county is involved in the planning and monitoring of the projects and resource allocation					

Thank you