

**CHALLENGES IN THE IMPLEMENTATION OF ELECTRICITY POWER
GENERATION EXPANSION PROJECTS IN KENYA: A CASE OF KENGEN**

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of Master of Arts Degree in Project Planning and Management of the University of Nairobi**

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DECLARATION

This project report is my own original work and has not been submitted for any academic award in any university

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Signature

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DEDICATION

I dedicate this research project report to my wife Saadia Bare, my children Anisa, Amal, Ashwaq, Fahim, Fahad for their support they gave me as I was compiling my research report all throughout which was much demanding.

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ABBREVIATIONS AND ACRONYMS

ERC	-	Energy Regulatory Commission
GDC	-	Geothermal Development Company
KenGen	-	Kenya Electricity Generating Company Limited
KETRACO	-	Kenya Electricity Transmission Company limited
KPC	-	Kenya Power Company
KPLC	-	Kenya Power and Lighting Company
MoE	-	Ministry of Energy
MW	-	MegaWatts
REA	-	Rural Electrification Authority
RDT	-	Resource Dependence Theory
SPSS	-	Statistical Package of Social Sciences
TMTT	-	Top Management Team Theory

ABSTRACT

Kenya has a long-term development strategy, The Vision 2030, whose aim is to drive the country into a globally competitive and prosperous economy with high quality of life. The energy sector is an important sector because energy plays a key role in enabling economic growth. The electric power supply in Kenya is significantly insufficient and covers a mere 20% of the population. Experience has shown that past electricity power projects have not realized the expectations in terms of their implementation and quality at entry. There is therefore the need to study the challenges in the implementation of electricity power generation expansion projects in Kenya. The purpose of this study was to determine the challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on Kenya Electricity Generating Company (KenGen). The main objective of this study was to establish the extent to which: financial resources; top management support; community support; and procurement process and procedures influence implementation of electricity power generation expansion projects in Kenya. The study adopted a descriptive research design. The target population for this study included all 100 chief officers and 28 managers of KenGen. In this study however no sampling will be done given the number of respondents is small, a census survey of all chief officers and managers will be conducted. The study relied on data collected through questionnaires structured to meet the objectives of the study. Responses were tabulated, coded and processed by use of a computer Statistical Package for Social Science (SPSS) version 20.0 programme to analyze the data. It is believed the study will be significant to the management of KenGen and energy regulators because they will be able to understand the challenges in the implementation of electricity power generation expansion projects in Kenya and therefore make informed decisions on related issues. The study found that there exists a positive association between: financial resources on implementation of electricity power generation expansion projects; influence of top management support on implementation of electricity power generation expansion projects; influence of community support on implementation of electricity power generation expansion projects; influence of procurement procedures on implementation of electricity power generation expansion projects to challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen. This positive association suggests that when one increases, challenges in the implementation of electricity power generation expansion projects in Kenya increase. The study therefore concludes that financial resources, top management support, community support community support and procurement procedures are challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Energy is undoubtedly one of the major drivers of socio-economic development of every nation, and its impact in this regard cannot be overemphasized. Access to electricity plays a huge role as compared to other forms of energy (Sanusi, 2014). The contribution of electricity to various sectors and facets of human endeavour such as education, health, agriculture and all households has made life much easier (Kanagawa and Nakata, 2008). Access to electricity in rural areas of developing countries has helped in increasing agricultural productivity, crop irrigation, preservation of farm produce and agro-processing (Haanyika, 2006; Kiplagat, Wang, and Li, 2011). Access to electricity is very essential in our daily lives as well as crucial to economic growth and development. However, access to energy in most parts of the world especially in the rural areas of developing countries is often elusive. A substantial part of the world's population estimated to be over 1.3 billion living in developing countries still lack access to electricity services with 85% of them residing in rural areas of Asia and Sub-Saharan Africa (Gualberti, Bazilian, and Carvalho, 2012; Sanusi, 2014).

Strong growth in electricity demand in Kenya is being driven by a combination of normal economic growth, increased efforts towards rural electrification, and reinforcement of the transmission and distribution grids by Kenya Power and Lighting Company (KPLC) (Omuoso, 2013). On the supply side, drought conditions in 2006 exacerbated the problem of very low reserve margins by reducing the capability of the hydro-electric plants to produce. This put the

spotlight on the high risk of over-reliance on hydro-electric power plants to secure power supply to the country. This led the Government of Kenya to seek alternative energy sources such as geothermal, wind and solar to expand electricity power generation. The government put up various projects aimed towards expansion of electricity power generation most of which implementation has been successful and others still ongoing.

Crawford and Bryce (2013) observe that a project is only successful if it comes on schedule, on budget, it achieves the deliverables originally set for it and it is accepted and used by the clients for whom the project was intended. Clark (2009) contends that different people measure project success in different ways at different times. Clark (2009) also found that the satisfaction of the key project stakeholders, including the customer, was the overriding measure of project success, with stakeholders being satisfied if their quality related criteria were met.

Completion of projects within schedule is a major contribution towards the competitive edge in organizations. This is based on the realization that the achievement of the targeted objectives is determined by the ability to deliver the targeted output within the stipulated time (Kariungi, 2014). In electrical power installation projects, different activities are involved and hence the need for proper management to ensure that materials and works are procured and supplied within schedule (Kariungi, 2014). A project is considered successful if the project is delivered on time, on schedule and acceptable quality (Loring, 2007). However, measuring project success is a complex task since success is tangible and can hardly be agreed upon (Clark, 2009).

According to Macharia and Ngugi (2014), to increase the chances of a project succeeding it is necessary for the organization to: (i) know the factors that are critical in determining the success of a project, and (ii) to systematically and quantitatively assess these critical success factors, anticipating possible effects, and then choose appropriate methods of dealing with them. Gaturu and Muturi (2014) indicated that the completion of projects in a timely manner is often a critical factor and measure of project success and the success of any project is highly dependent on its completion time from start to delivery of results. The completion of projects in a timely manner has a direct bearing on management decisions such as budgets, targets and standards (Westerveld, 2003). Kariungi (2014) similarly stated that completion of projects within schedule is a major contribution towards the competitive edge in organizations.

In the United Kingdom, Akintoye *et al.* (2005) contends that effective procurement, project implementation ability, government guarantees, and favourable economic conditions are critical success factors (CSFs) for public-private partnership projects. In Lithuania, Gudiene, Ramelyte and Banaitis (2013) stated that project management's experience, project value, project manager's experience, experience of contractor, project size, competence of project team members, clear and realistic goals, decision making effectiveness of project management, and technical capability of project management are the most important success factors for any project.

1.1.1 Kenya Electricity Generating Company Limited

Kenya Electricity Generating Company Limited, KenGen is the leading electric power generation company in Kenya, producing about 75 percent of electricity capacity installed in the country (KenGen, 2017). KenGen traces its history back to 1954 when the Kenya Power Company (KPC) was formed (KenGen, 2017). KPC was set up to construct an electric power interconnector to transmit power from the Owen Falls Power Station in Uganda and to develop electricity generation facilities in Kenya. From its inception, KPC was operated by KPLC through a management contract. This arrangement continued until 1997 when the electricity industry was unbundled. KenGen was then established and it incorporated KPC's generation assets. KenGen remained wholly state-owned until 2006 when it was partially privatised. This was in tune with government's 2003 economic strategy that acknowledged that electricity supply in Kenya was expensive and unreliable and that some form of public-private partnership would be necessary to 'mobilise the investment needed for expanding generating capacity' (Government of Kenya, 2003).

KenGen utilizes various sources to generate electricity ranging from hydro, geothermal, thermal and wind (KenGen, 2017). Hydro is the leading source, with an installed capacity of 819.9MW, which is 51 per cent of the company installed capacity. Geothermal is currently at 533.8MW (of which 81.1MW is from the innovative wellheads technology raising geothermal capacity to about 32% of the total installed capacity. Our total thermal capacity is 253.5MW while wind comprises 25.5MW. Following the full operationalization of the 280MW Geothermal plant in Olkaria, the national electricity consumption by mode 47% geothermal, 39% hydro, 13% thermal and 1% wind (KenGen, 2017).

Omuoso (2013) contends that KenGen is the primary source of generation of electricity for the country, and will continue to be the most important player in the provision of new generation capacity. The most critical set of activities is to increase supply to the grid and widen the safety margin between demand and supply (KenGen, 2017). This heavily depends on the choice and execution of the appropriate strategy to add cheap and clean energy to the grid. In the bid to bridge the gap between demand and supply, KenGen is involved directly in the implementation of electricity power generation expansion projects in Kenya.

1.2 Statement of the Problem

Kenya has witnessed a significant reduction in electric power supply compared to the demand which is significantly insufficient and covers a mere 20% of the population (Kariungi, 2014). This led the Government of Kenya to seek alternative energy sources such as geothermal, wind and solar to expand electricity power generation. Many electricity power generation projects have therefore emerged with an intention of mitigating this deficit. Experience has shown that past electricity power projects have not realized the expectations in terms of their implementation and quality. Even though various electricity power generation expansion projects are still ongoing, power rationing, low connectivity in rural areas and power outages is still experienced. Delays in electricity power generation projects have negatively impacted on both the social and economic benefits in Kenya that would have accrued if the projects were completed on time. There is need for a study that will attempt to determine the challenges faced in the implementation of electricity power generation expansion projects in Kenya.

A number of studies carried out on electricity power generation projects and projects management in the energy sector such by Masila (2016); Loring (2007); Njoroge (2010); Sanusi (2014); Ohiare and Soile (2012); Ogweno *et al.* (2016); and Kariungi (2014) have failed to give detailed insights on challenges in the implementation of electricity power generation expansion projects. Although the studies among others attained their objectives, they did not delve into the challenges in the implementation of electricity power generation expansion projects. There is a paucity of published work on challenges in the implementation of electricity power generation expansion projects, particularly in the context of developing countries in the dynamic African region and specifically in Kenya. This study intended to bridge this gap in knowledge that exists.

1.3 Purpose of the Study

The purpose of this study was to determine the challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen.

1.4 Objectives of the Study

This study was guided by the following objectives:

- i) To establish the extent to which financial resources influence implementation of electricity power generation expansion projects in Kenya.
- ii) To determine the extent to which top management support influences influence implementation of electricity power generation expansion projects in Kenya
- iii) To find out how community support influences influence implementation of electricity power generation expansion projects in Kenya

iv) To establish the extent to which procurement process and procedures influence implementation of electricity power generation expansion projects in Kenya

1.5 Research Questions

The study sought to answer the following questions;

- i) To what extent do financial resources influence implementation of electricity power generation expansion projects in Kenya?
- ii) To what extent does top management support influence implementation of electricity power generation expansion projects in Kenya?
- iii) How does community support influence implementation of electricity power generation expansion projects in Kenya?
- iv) To what extent does procurement process and procedures influence implementation of electricity power generation expansion projects in Kenya?

1.6 Significance of the Study

The study is of importance to the management team of Kenya Electricity Generating Company (KenGen) in charge of implementation of electrical power generation projects in Kenya. The study will also be significant to the management team of Kenya Electricity Transmission Company limited (KETRACO), Geothermal Development Company (GDC), Rural Electrification Authority (REA) and other energy sectors e.g. Kenya Power and Lighting Company (KPLC) since they will be able to use the findings as the base upon which to review challenges in electricity power expansion projects in Kenya. Necessary improvements identified could be undertaken to enhance electricity power generation expansion projects. On the basis of

the findings of the study, the energy sector in Kenya will implement electricity power generation expansion projects from a point of knowledge.

The regulators and the policy makers such as the Ministry of Energy (MoE) which funds most of the electrification projects and develops policies for energy generation, transmission and distribution and the Energy Regulatory Commission (ERC) which regulates the energy sector can use the finding as reference for policy guideline on electricity power generation expansion projects. They will be able to use the findings of the study to formulate viable policy documents that effectively will in turn boost expansion and access to electricity. These may relate to regulating those aspects that threaten to adversely impact on the operations and development of such organizations.

The study will provide additional information into the already existing body of literature 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.

1.7 Limitations of the Study

In the course of the study, some of the challenges and constraints that the study expected to encounter include: limited availability of information and literature, inaccurate data, poor cooperation by respondents, gathering and interpreting background research and difficulties with

getting appointments with interviewees. The study handled the challenge by working extra hours so as to finish up the project in time. The problem of limited availability of literature when developing the background research will be overcome by conducting extensive and detailed research from various sources such as Kenyan journals, local newspapers and websites. During the course of this study, a continuous, detailed and meticulous research was carried out.

The research was most likely to come across uncooperative respondents who may be unwilling to participate in the study. This challenge was minimized by assuring the respondents that no names of the participants will be used in reference to the study since the purpose of the research is only for academic. The researcher also carried an introduction letter from the university as proof.

Some respondents may also refuse to be interviewed claiming they lack time or challenge of getting most of the respondents in the offices to fill the questionnaires since they may be in the field most of the time. However the study addressed the challenge by making the research instruments brief and straight to the point as well as assuring the respondents that the exercise will take very little time out of their busy schedule. In the event some respondents are out of office on assignments, the questionnaires will be left behind for them or sent via email to the respondents so as to increase reliability of the study by ensuring maximum response rate is attained.

1.8 Delimitation of the Study

The study was made successful by easy access of respondents by researcher in gathering information regarding the challenges in the implementation of electricity power generation expansion projects in Kenya. The study was also grounded on a well-researched literature review. The study focused on the challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen. The respondents were KenGen chief officers and managers who were sampled and supplied with questionnaires with the aim of getting their views regarding the subject matter of the study.

1.9 Assumptions of the Study

This study was based on the following assumptions:

First, it is assumed that there are challenges that affect the implementation of electricity power generation expansion projects in Kenya which this study seeks to establish. Second, it is assumed that the selected respondents will cooperate and provide the required information honestly and objectively. Finally, it is assumed that the information obtained from this study would be very useful in highlighting the critical issues that need to be addressed to improve electricity supply in Kenya.

1.10 Definition of Significant Terms

Connectivity: measure of the extent to which the components (nodes) of a network are connected to one another, and the ease (speed) with which they can converse

Deliverable:	a tangible or intangible good or service produced as a result of the project that is intended to be delivered to a customer (either internal or external)
Expansion:	a thing formed by the enlargement, broadening, or development of something
Implementation:	the process of putting a decision or plan into effect
Procurement:	act of finding, acquiring, buying goods, services or works from an external source, often via a tendering or competitive bidding process
Project management:	discipline of initiating, planning, executing, controlling, and closing the work of a team to achieve specific goals and meet specific success criteria
Project:	planned set of interrelated tasks to be executed over a fixed period and within certain cost and other limitations
Stakeholder:	a person with an interest or concern in something, especially a business
Strategy:	a method or plan chosen to bring about a desired future, such as achievement of a goal or solution to a problem

1.11 Organization of the Study

This study comprises of the proposal which entails chapters one, two and three. This chapter has presented the background information, problem statement, purpose of the study, objectives of the study, research questions, significance of the study, scope of the study, limitations of the study and definition of terms used. Chapter two provides a salient review of literature related to the study that illuminates work which has influenced this research and which justifies the need for extending the current research. Chapter three details the research methodology which will be employed in this research. Chapter four details the data analysis, interpretation and presentation while Chapter five is the summary of findings, discussions, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explores the existing literature relevant to the study as presented by various researcher and scholars'. The chapter covers the theoretical review, empirical literature and the conceptual framework of variables. The review includes other scholar's work both at international and local scale. By pointing at the weaknesses and gaps of the previous researches, it will help support the current study with a view of suggesting possible viable measures or ways of filling them.

2.2 Empirical Literature

This section presents empirical literature of the study in relation to the study objectives as presented by other authors, scholars' and researchers. This section has sub-sections that look at the influence of financial resources on expansion projects; influence of top management support on expansion projects; influence of community support on expansion projects; and influence of procurement process and procedures on expansion projects.

2.2.1 Influence of Financial Resources on Expansion Projects

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 projects have to survive (Masila, 2016). 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).

Massie (2006), points out that financial statements contain valuable information that managers can use to analyze past performance of a project. Stoner *et al.* (2007) noted that financial statements are used to track the monetary value of goods and services into and out of the organization. Sanga (2009) who argued that proper record keeping sustains and expands an organization and without it the business runs a risk of hitting cash flow crunches wasting money and missing out opportunities to expand. This then calls for the project managers to have a careful financial management strategy to guarantee the sustainability of these projects.

Wernham (2004) observes that in a project planning process, resources such as people, skills, facilities and money to implement the strategy must be adequate. Many organizations today are

focusing on becoming more competitive by launching competitive strategies that give them an edge over others. Effective implementation of any projects depends on rational and equitable resource allocation across the organization and investment (Masila, 2016). Resource allocation helps strategic managers to coordinate operations and facilitates control of project performance. It is important to have a budget for the whole organization or sub-unit. The financial objectives of all the departments should be indicated. The project activities should be linked to the annual business plan (Birnbaum, 2000).

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 non-recourse 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 (Masila, 2016).

Money and other resources in terms of adequate funding until project completion and availability of resources are obvious imperatives to carry out projects. Availability of funds/resources has also been ranked highest by Belassi and Tukel (1996); and White and Fortune (2002). Although

project delivery process does not have a stage called funding, budgetary constraints affect each stage of the process (Sullivan & Mayer, 2010). The Right of Way to a project is not identified by a project that only fulfills the environmental process, only for the policy makers to disagree with the chosen source of funding. Divakar & Subramanian (2009) reviewed the correlation between cost overruns and project delays and realized that a good agreement exists between the two factors.

2.2.2 Influence of Top Management Support on Expansion Projects

A project manager is accountable for delivering project outputs (Masila, 2016). However, as a project is a complex endeavor, project managers can expect support from others in the organisation. Particularly, the active involvement of senior managers of the performing organisation can help project managers to successfully complete the project. Consistently, the project management literature has found that top management support positively contribute to project success (Besner & Hobbs, 2008). According to Johnson *et al.* (2009) top management support is considered to be among project management Critical Success Factors (CSFs). This means that the more top management processes are practiced in organisations, the higher the level of project success is. However, with executive limited time and resources, it is also important to identify the most effective support processes for different project scenarios.

Top managers play a crucial role in providing and creating the needed conditions for the project success (Staehr, 2010). Moreover, top management generally, plays an important role in defining the scope of a project and selection of project team as well (Boonstra, 2013). In addition, they remain in a position to structure the context of the organizations and they also facilitate the

provision of resources. Usually top management support results in availability of financial resources, in-time allocation of human and other physical resources and also it refers to the delegation of necessary power to project leaders and project team for successful completion of projects (Kandelousi *et al.*, 2011). Ofer (2008) argued top management support is the main ingredient in project success.

Zwikael (2008) supports the high importance of top management involvement in projects and concludes that different top management support processes should be implemented in any industry and culture. Kandelousi *et al.* (2011) mentioned that top management support can be viewed in several forms, for example, helping teams in dealing with hurdles, exhibiting commitment to the work and encouraging the subordinates. Usually top management support results in availability of in time financial resources, allocation of human and other physical resources and also it refers to the delegation of necessary power to project leaders and project team for successful completion of projects (Masila, 2016). Moreover, top management support is important recommendation in achievement of project success (Lin, 2010). In contrast, top management cannot provide even the due support to each and every project in the organization (Young & Jordan, 2008) therefore, they must realize the existence to project leaders who are directly involved in day to day activities of project.

Project management is not only dependent on top management for authority, direction, and support, but ultimately the conduit for implementing top management's plans, or goals of the organization (Ogweno et al., 2016; Bhatti, 2005). Sustained management support is related with sustained management commitment, both at top and middle levels during the implementation, in terms of their own involvement and the willingness to allocate valuable organizational resources (Esteves and Pastor, 2000). Management support is, therefore, important for accomplishing project goals and objectives and aligning these with strategic business goals (Morgan, 2012). Top management support is needed throughout the implementation phase of a project and it must be committed with its own involvement and willingness to allocate valuable resources to the implementation effort (Cooper and Kleinschmidt, 1987; Nah *et al.* 2001). Top management needs to constantly monitor the progress of the project and provide direction to the implementation teams (Cooke-Davis, 2002; Meredith and Mantel, 2010).

2.2.3 Influence of Community Support on Expansion Projects

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 (Masila, 2016).

Community involvement is another factor in the communication component. It has been found to be an important factor in previous studies (Awakul and Ogunlana, 2002). Large-scale construction projects are usually fraught with controversy. Therefore, a supportive and understanding community is necessary for smooth implementation. This cannot be achieved unless the project information is shared adequately. Yeo (1995) noted that a large infrastructure project needs support and understanding from the community affected by the project, especially during the construction period. He added that managing public reactions and opinions and understanding public attitudes are an integral part of the project management's responsibility. It is essential that the project participants should truthfully share the project information and obtain different public perspectives regarding their project (Kariungi, 2014).

2.2.4 Influence of Procurement Process and Procedures on Expansion Projects

Procurement is the entire process of acquiring materials, property and services required for a particular project (Kariungi, 2014). Procurement is the acquisition of goods, services and/or infrastructure at the best possible total cost of ownership in the right quantity and quality, at the right time, in the right place for the direct benefit or use of governments, corporations or

individuals, generally via a contract (Ganuza, 2007). The process starts with the identification of need, followed by a decision on procurement requirements. The process continues through risk assessment, identification and evaluation of alternative solutions, contract award, delivery and payment of the property or service (Ombaka, 2009). Divakar & Subramanian (2009) explains that an effective procurement process ensures that materials are available at the right time, right quantity, for the right client, and at a reasonable price and quality.

Procurement is an important aspect and if not managed well, then project aid can be withheld, disbursements can be delayed, contracts can be cancelled and worse still contractors debarred from doing business with development partners which can be a costly affair (Ongweno *et al.*, 2016). According to Akintoye *et al.* (2005), the critical success factor components of effective procurement are: (i) Transparency in the procurement; (ii) Competitive procurement process; (iii) Good governance; (iv) Well committed public agency; (v) Social support and (vi) Thorough and realistic assessment of the cost and benefits. Murray *et al.*, (2002) cites that stringent conditions for pre-qualification and tendering, lack of transparency in the procurement of public works, and lack of affirmative policies for the promotion of local contractors as contributing factors to the lack of effectiveness and mediocre performance of donor-funded projects, even resulting in unfair competition and corruption.

World Bank Report (2009), the average project funds absorption rate was less than 10% per annum. This scenario has been blamed on an inefficient and bureaucratic procurement system. Kirungu (2011) established that policies have a great effect on the implementation of the donor funded projects. Kirungu (2011) concluded that the major implementation obstacles for donor

funded projects implementation is procurement policies and donor guidelines due to bureaucracy which results in low disbursement of donor funds. The fact that both donor and GoK procurement policies and guidelines are applied concurrently only serves to compound an already worse implementation situation (Masila, 2016).

2.3 Theoretical Literature

A theory is a set of assumptions, propositions that attempts to provide a plausible or rational explanation of cause-and-effect (causal) relationships among a group of observed phenomenon (Blattberg, 2004). In this section, the focus is on various theories under which the study is underpinned. It specifically focuses on resource dependence theory, top management team theory, and system theory.

2.3.1 Resource Dependence Theory (RDT)

According to Nyandika & Ngugi (2014), resource dependence theory (RDT) is concerned with how organizational behaviour is affected by external resources the organization utilizes, such as raw materials. The theory is important because an organization's ability to gather, alter and exploit raw materials faster than competitors can be fundamental to success. Resource dependence theory is underpinned by the idea that resources are key to organizational success and that access and control over resources is a basis of power (Ongweno *et al.*, 2016). Resources are often controlled by organizations not in the control of the organization needing them, meaning that strategies must be carefully considered in order to maintain open access to resources. Organizations typically build redundancy into resource acquisition in order to reduce their reliance on single sources e.g. by liaising with multiple suppliers, (Davis, and Cobb, 2010).

Resource dependence theory has implications regarding the optimal divisional structure of organizations, recruitment of board members and employees, production strategies, contract structure, external organizational links, and many other aspects of organizational strategy (Meroka, 2011). Organizations depend on multidimensional resources: labor, capital, raw material, etc. Organizations may not be able to come out with countervailing initiatives for all these multiple resources. Hence organization should move through the principle of criticality and principle of scarcity. Critical resources are those the organization must have to function (Hillman, Withers and Collins, 2009). Resource dependence concerns more than the external organizations that provide, distribute, finance, and compete with a firm. Although executive decisions have more individual weight than non-executive decisions, in aggregate the latter have greater organizational impact (Boyd, 1990).

2.3.2 Top Management Team Theory

According to Nyandika & Ngugi, (2014), top management team theory (TMTT) studies the strategic choice and organizational performance determinants from the process of cognitive psychology of top management team. As the cognitive psychological process of TMT is too complicated, TMTT invokes prior marketing research on demography to suggest that managerial characteristics and its heterogeneity (such as age, work experience, educational background) are reasonable proxies for underlying differences in cognitions, values, and perceptions process, which could be good predictor to predict organizational outcome (Nyandika & Ngugi, 2014; Müller & Jugdev, 2012). In relation to this study, the skills and the support of the top management is paramount in the success of development projects. It reduces the timeline of projects as it helps to smoothen the communication process.

2.3.3 Systems Theory

System theory originates from Margaret Mead who states that organizations are social systems and real systems are open to and interact with their environments (Bertalanffy, 1993). The different parts/elements within and around the organization intermingle to affect the way organization operate and therefore strategy implementation. It can be argued from a system's approach to strategic management that many of the reasons for strategies failure may be attributed to the successive dominance of different reductionism approaches to strategic management (Gregory, 2011). Such partial approaches to project management ignore the complex, embedded and dynamic nature of today's organization. Taking the system approach in project implementation helps managers of organizations to have to understand the customer, better predict environmental reaction, estimate resource competence, and coordinate strategic project activities, obtain management commitment, estimate time requirements, ability to follow the plan, manage the strategic change and ensure effective communication (Müller & Jugdev, 2012).

2.4 Conceptual Framework

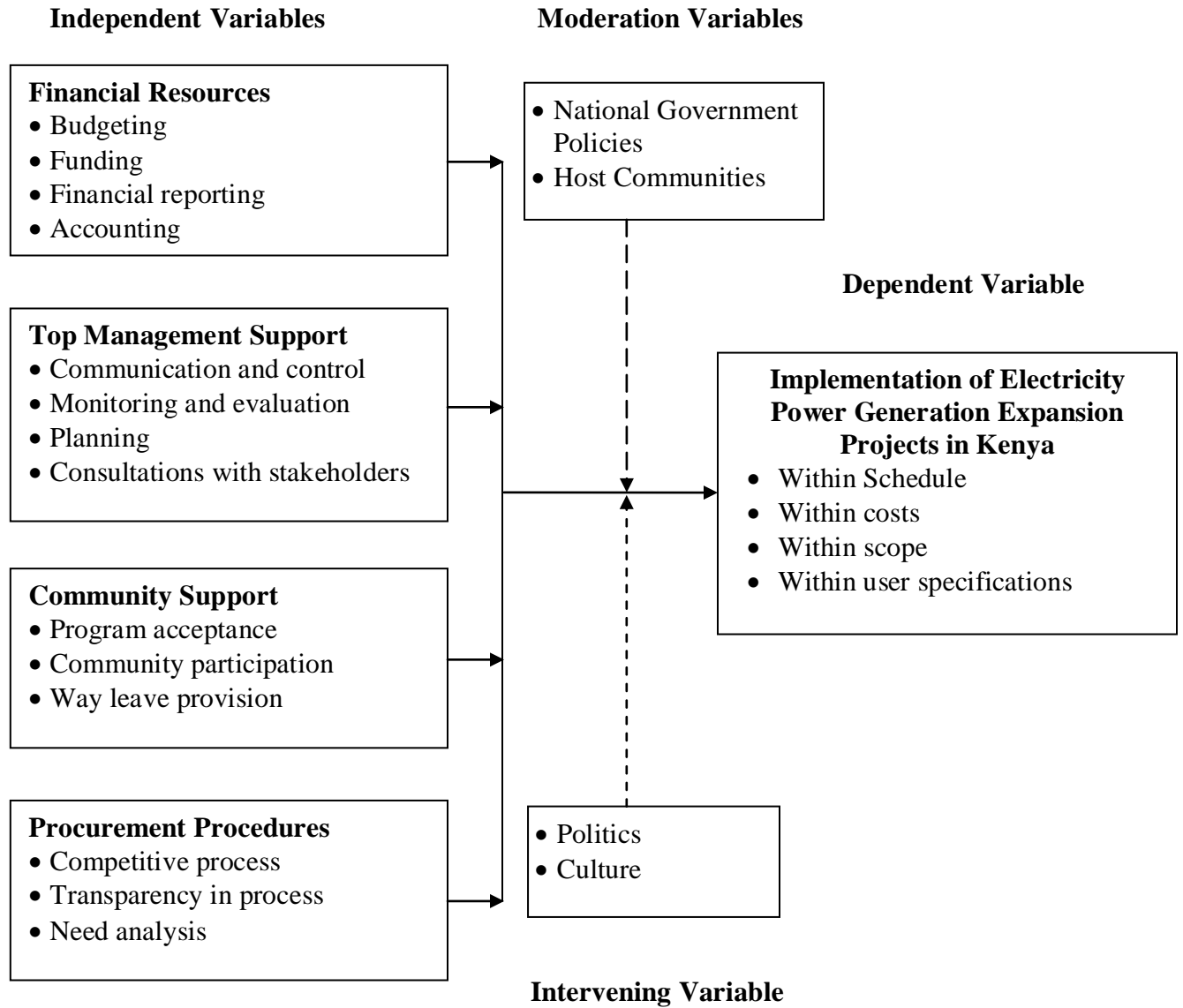


Figure 1: Conceptual Framework

A conceptual framework is a hypothesized model identifying the concepts under study and their relationships (Mugenda and Mugenda, 2003). In this study's conceptual framework, there are certain factors influencing implementation of electricity power generation expansion projects in

Kenya. These factors include but are not limited to financial resources, top management support, community support, and procurement process and procedures. National government policies and host communities are the moderating variables while politics and culture are the intervening variables. Implementation of electricity power generation expansion projects in Kenya is the dependent variable that is affected by the independent variables. The study will be guided by the conceptual framework as shown in Figure 1 relating the dependent and independent variables.

2.5 Research Gaps

Numerous studies carried out on the factors that affect the implementation of expansion projects have ended up providing identifiable recommendations that will boost project success. However the studies have failed to give detailed insights on challenges in the implementation of electricity power generation expansion projects. There is scarcity of empirical evidence on how financial resources, top management support, community support, and procurement process and procedures influence implementation of electricity power generation expansion projects. This study intends to bridge this gap in knowledge that exists. Table 1 presents the research gaps:

Table 1: Research Gaps Table

Author	Focus of the Study	Methodology used	Findings	Gap Knowledge in	Focus of current study
Ogweni, B., Muturi, W., and Rambo, C. (2016).	The purpose of the study was to assess the determinants of timely completion of road construction projects in Kisumu County, Kenya	The study adopted a descriptive survey design	The study found out that top management support was more critical in determining the timely completion of road construction projects in this study than effective procurement process	The study focused on road construction projects	This study focuses on electricity generation expansion projects
Masila, P. (2016).	Factors affecting the implementation of electricity power expansion projects in Kenya: a case of Kenya Power and Lighting Company	Case study	The study concluded that, financial difficulties are a major cause of poor implementation of projects leading to delay in the timely completion of the expansion of projects in Kenya Power, Community awareness is done on the importance of providing way leave.	The study looked at Kenya Power and Lighting Company	This study focuses on KenGen
Kariungi, S. (2014)	Determinants of Timely Completion of Projects in Kenya: A Case of Kenya Power and Lighting Company	Descriptive and exploratory research designs were adopted	Procurement delays, timely availability of funds and climatic factors were observed to be the main factors that influenced the timely completion of KPLC projects in the studied area	The study looked at Kenya Power and Lighting Company and completion of projects	This study focuses on KenGen and electricity generation expansion projects
Githenya, M. & Ngugi, K. (2014)	Assessment of the Determinants of Implementation of Housing Projects in Kenya	The study employed descriptive study	The study found that project planning, project control, motivated project team and project management competency have a great influence on housing project implementation in Kenya	The study focuses on Housing Projects in Kenya	This study focuses on electricity generation expansion projects
Macharia, M. & Ngugi, K. (2014)	Determinants of successful completion of power projects in Kenya Power and Lighting Company	The study adopted descriptive survey and case study design	The study found that top management support, stakeholder influence, information technology, and organization structure have a great positive influence on successful completion of power projects in Kenya Power & Lighting Company	The study looked at Kenya Power and Lighting Company and completion of projects	This study focuses on KenGen and electricity generation expansion projects
Wanjau, B. (2015).	Factors influencing completion of building projects in Kenya, ministry of land, housing and urban development, Nairobi County	The design of this research was a descriptive survey research	The study found out that there is a positive relationship between completion of building projects and business related factors, project procedures, project management factors and human related factors	The study focuses on building projects in Kenya, ministry of land, housing and urban development, Nairobi County	This study focuses on electricity generation expansion projects

2.6 Chapter Summary

This chapter has presented the theories upon which the study is grounded on. The chapter has also discussed and presented empirical literature regarding the challenges in the implementation of electricity power generation expansion projects as presented by other authors and scholars. The conceptual framework of variables has also been discussed. The research gaps as well have been identified.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter identifies the procedures and techniques that will be used in the collection, processing and analysis of data. The sub-topics covered in this chapter are: research design, target population, sample size and sampling procedure, research instruments, data collection methods, research procedures, pre testing of instruments, data analysis, operational definitions of terms, and ethical considerations.

3.2 Research Design

The current study employed a descriptive research design. The research design was chosen for this research due to its ability to ensure minimization of bias and maximization of reliability of information gathered. Kothari (2008) contends that a descriptive research design is appropriate where the study needs to draw conclusions from a larger population. Mugenda and Mugenda (2003) asserts the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study.

3.3 Target Population

Wambugu, Kyalo, Mbii & Nyonje (2015) define a population as the entire group of people, events or things of interest that the researcher wishes to investigate and is abbreviated as N. Cohen, Manion, and Morrison (2007) define a target population as a specific proportion of the entire population that can be narrowed to achieve research objectives. The research targeted all

chief officers and managers of Kenya Electricity Generating Company Limited. KenGen has a total of 100 chief officers and 28 managers (KenGen Human Resource Data, 2017).

Table 2: Target Population

Target Population	Number (N)	Frequency
Managers	28	21.9
Chief Officers	100	78.1
Total	128	100.0

Source: KenGen Human Resource Data (2017)

3.4 Sample Size and Sampling Procedure

A sample is a subset of the population. Cohen, Manion, and Morrison (2007) define sampling as the process of selecting a small part (sample) from the entire population to be studied. Choosing a sample is a key feature of any research undertaking. In this study however no sampling was done given the number of respondents is small a census survey of all KenGen chief officers and managers were conducted.

3.5 Data Collection Instruments

A structured questionnaire was used to collect primary data. The questionnaires were preferred in this study because respondents of the study are assumed to be literate and quite able to answer questions asked adequately. It contained a mix of questions, allowing for both open-ended and specific responses to a broad range of questions. Kothari (2008) terms the questionnaire as the most appropriate instrument due to its ability to collect a large amount of information in a

reasonably quick span of time. It is for the above reasons that the questionnaire was chosen as an appropriate instrument for this study.

3.6. Pretesting of the Instrument

Before administering the research instruments to the respondents, pre-testing was done so as to help in determining the validity and reliability of the research tools to ensure that the questions are applicable and clearly understandable.

3.6.1 Validity of the Research Instrument

According to Kothari (2008) validity is the most critical criterion of sound measurement and indicates the degree to which an instrument measures what it purports to measure. This study adopted content validity which is the extent to which a measuring instrument provides adequate coverage of the topic under study. In order to establish content validity and make adjustments and/or additions to the research instruments, consultations and discussions with the supervisor were done.

3.6.3 Reliability of the Research Instrument

Reliability is the degree of consistency that the instrument or tool demonstrates on repeat trials (Wambugu *et al.*, 2015). To ensure reliability the study employed self-administration approach of data collection and monitored the process to ensure that people outside the sample did not fill the questionnaires. Cronbach's Coefficient Alpha approach recommended by Cohen, Manion and Morrison (2007) for its ability to give average split-half correlation for all possible ways of dividing the test into two parts will be used to measure internal consistency of the research

instruments. Computation of Cronbach's Alpha was done using SPSS for windows version 20.0 programme. Correlation coefficient varies on a scale of 0.00 (indicating total unreliability) and 1.00 (indicating perfect reliability). 0.8-0.9 indicates high reliability, 0.6-0.8 indicates acceptable reliability value while below 0.5 is unacceptable (Wambugu *et al.*, 2015). The questionnaires were accepted at reliability indices of 0.70 and above.

3.7 Data Collection Procedure

The researcher first obtained a transmittal letter from the University department offices and a permit from the National Council for Science and Technology in order to aid get authorization from the general manager of KenGen to enable collect data from the respondents in the premises. The researcher used trained and qualified research assistants to assist with the questionnaire distribution. To ensure that the purpose of the study was achieved, the researcher interviewed one person at a time in a period less than five minutes each. The researcher explained the purpose of the study and offered guidance to the respondents on the way to fill in the questionnaire before administering the questionnaire. The questionnaires were filled and assistance was sought where possible thus raising the reliability.

As for the busy respondents or those out of office, the questionnaires were administered through drop and pick method whereby the respondents were left with the questionnaire to fill in their convenient time. The researcher thereafter followed up by making subsequent visits and courtesy calls when necessary to remind the respondents to fill the questionnaires and in so doing increasing the response rate. The respondents were assured verbally that the information

obtained from them was treated with ultimate confidentiality. They were therefore requested to provide the information truthfully and honestly. The study relied on data collected through a questionnaire structured to meet the objectives of the study.

3.8 Data Analysis

Data collected from the completed questionnaires was summarized, coded, tabulated and checked for any errors and omissions. Frequency tables, percentages and means were used to present the findings. Responses in the questionnaires were processed by use of a computer Statistical Package for Social Science (SPSS) version 20.0 programme to analyze the data. The responses from the open-ended questions were listed to obtain proportions appropriately; the responses were then reported by descriptive narrative as qualitative analysis. Quantitative data was analyzed using descriptive statistics including, averages, percentages, means and standard deviations. Correlation analysis was done to establish the relationship between the variables. Correlation was done to determine the relationship between the independent and dependent variables.

3.9 Operational Definition of Variables

Table 2 gives a summary of research objectives, variables of study, their indicators, level of measurement, tools of analysis for each objective and type of tool employed for each objective.

Table 3: Operational Definition of Variables

Research Objectives	Variable	Indicator	Measurement scale	Tools of Analysis	Analysis Techniques
Challenges in the implementation of electricity power generation expansion projects in Kenya	Implementation of electricity power generation expansion projects in Kenya	<ul style="list-style-type: none"> • Within Schedule • Within costs • Within scope • Within user specifications 	-Interval -Nominal	SPSS	Percentages, frequencies, means, and standard deviation
To establish the extent to which financial resources influence implementation of electricity power generation expansion projects in Kenya	Financial Resources	<ul style="list-style-type: none"> • Budgeting • Funding • Financial reporting • Accounting 	-Interval -Nominal	SPSS	Percentages, frequencies, means, and standard deviation
To determine the extent to which top management support influences influence implementation of electricity power generation expansion projects in Kenya	Top Management Support	<ul style="list-style-type: none"> • Communication and control • Monitoring and evaluation • Planning • Consultations with stakeholders 	-Interval -Nominal	SPSS	Percentages, frequencies, means, and standard deviation
To find out how community support influences influence implementation of electricity power generation expansion projects in Kenya	Community Support	<ul style="list-style-type: none"> • Program acceptance • Community participation • Way leave provision 	-Interval -Nominal	SPSS	Percentages, frequencies, means, and standard deviation
To establish the extent to which procurement process and procedures influence implementation of electricity power generation expansion projects in Kenya	Procurement Process and Procedures	<ul style="list-style-type: none"> • Competitive process • Transparency in process • Need analysis 	-Interval -Nominal	SPSS	Percentages, frequencies, means, and standard deviation

3.10 Ethical considerations

As this research aims at adding to the knowledge of expansion projects and project management, it upheld utmost confidentiality about the respondents. The study made certain that all respondents are given free will to participate and contribute voluntarily to the study. The researcher also adhered to appropriate behaviour in relation to the rights of the respondents. A verbal consent was sought from the sample respondents before being interviewed. In addition, the study ensured that necessary research authorities are consulted and consent approved and appropriate explanations specified to the respondents before commencement of the study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter the key issues related to data presentation, analysis and interpretation have been discussed. This chapter presents responses from all chief officers and managers of Kenya Electricity Generating Company Limited regarding challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen. First, the research response rate has been computed and presented for each section. Secondly, the demographic characteristics of the participants have been described. Thirdly, the findings on the four key objective areas of the study have been presented and interpreted. The responses were analyzed using descriptive and inferential statistics. The data has been presented in tables.

4.2 Responses from the KenGen chief officers and managers

This section is presented in five parts. Part A looks at the background information, Part B looks at Influence of Financial Resources on Implementation of Electricity Power Generation Expansion Projects, part C looks Influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects, part D looks at Influence of Community Support on Implementation of Electricity Power Generation Expansion Projects, while part E looks at Influence of Procurement procedures on Implementation of Electricity Power Generation Expansion Projects.

4.3 The Study Response Rate

Out of 128 questionnaires which had been administered to the interviewees, 121 of them were returned for analysis. This translates to 94.5 percent return rate of the respondents. Overall, the response rate was considered very high and adequate for the study as shown in Table 4.1;

Table 4.1: Distribution of the Respondents by Responses Rate

Response Rate	Frequency (F)	Percentage (%)
Returned	121	94.5
Not Returned	7	5.5
Issued	128	100.0

4.3.1 Demographic Characteristics of the Respondents

The respondents in this section of the study were KenGen chief officers and managers who were of different categories. The categories were characterized by gender, age, academic achievement, years worked at the health sector and department. The summary of the KenGen chief officers and managers distribution by their gender is given in Table 4.2

Table 4.2: Distribution of KenGen chief officers and managers by Gender

Gender	Frequency (F)	Percentage (%)
Male	65	53.7
Female	56	46.3
Total	121	100.0

According to the data shown in Table 4.2, out of 121 KenGen chief officers and managers who participated in the study, 65 (53.7%) the majority were males while 56 (46.3%) were female. The

findings could be an indication that most of the KenGen chief officers and managers are males.

The distribution of the KenGen chief officers and managers by age is given in Table 4.3

Table 4.3: Distribution of KenGen chief officers and managers by Age

Age	Frequency (F)	Percentage (%)
18-22 years	0	0.0
23-27 years	0	0.0
28-32 years	0	0.0
33-37 years	12	9.9
38-42 years	41	33.9
43-47 years	36	29.8
48-52 years	24	19.8
53 and above years	8	6.6
Total	121	100.0

It is evident from the data shown in Table 4.3 that, majority of the KenGen chief officers and managers 41 (33.9%) fell under the age bracket of 38-42 years, 36 (29.8%) were aged 43-47 years, 24 (19.8%) were aged 48-52 years, 12 (9.9%) were aged 33-37 years, and 8 (6.6%) were aged 53 and above years. The findings reveal that KenGen chief officers and managers comprises of young and middle aged people. The distribution of the KenGen chief officers and managers by education level is given in Table 4.4

Table 4.4: Distribution of KenGen chief officers and managers by education level

Academic Achievements	Frequency (F)	Percentage (%)
Certificate	0	0.0
Diploma	3	2.4
Undergraduate	40	33.1
Post graduate	55	45.4
PhD	23	19.1
Total	121	100.0

The results in Table 4.4 indicate that, majority 55 (45.4%) of the KenGen chief officers and managers have attained postgraduate level of education, 40 (33.1%) have attained a undergraduate level of education, 23 (19.1%) have attained PhD level of education, and 3 (2.4%) have attained diploma level of education. The findings point that majority of KenGen chief officers and managers have attained tertiary education. The distribution of the KenGen chief officers and managers by duration worked with KenGen is given in Table 4.5.

Table 4.5: Duration worked at KenGen

Years at KenGen	Frequency (F)	Percentage (%)
Less than 1 year	4	3.3
1-3 years	11	9.1
4-7 years	24	19.8
8-11 years	49	40.5
Over 11 years	33	27.2
Total	121	100.0

The findings on Table 4.5 indicate that majority of KenGen chief officers and managers have worked at KenGen for 8-11 years 49 (40.5%), over 11 years 33 (27.2%), 24 (19.8%) for 4-7 years, 11 (9.1%) for 1-3 years, and 4 (3.3%) have worked at KenGen for less than 1 year. The distribution of the KenGen chief officers and managers by duration they have been involved in electricity power generation expansion projects is given in Table 4.6.

Table 4.5: Duration involved in electricity power generation expansion projects

Years at in electricity power generation	Frequency (F)	Percentage (%)
Less than 1 year	0	0.0
1-3 years	10	8.3
4-7 years	25	20.7
8-11 years	35	28.9
Over 11 years	51	42.1
Total	121	100.0

The findings on Table 4.6 indicate that majority of KenGen chief officers and managers have been involved in electricity power generation expansion projects for over 11 years 51 (42.1%), 8-11 years 35 (28.9%), 25 (20.7%) for 4-7 years, and 10 (8.3%) been involved in electricity power generation expansion projects for 1-3 years. The distribution of the KenGen chief officers and managers by career orientation is given in Table 4.7.

Table 4.7: Career orientation

Career orientation	Frequency (F)	Percentage (%)
Accounting	11	9.1
Procurement	14	11.6
Engineering	24	19.8
Technical	19	15.7
Marketing	5	4.1
Project Management	14	11.6
Human Resource	9	7.4
Business Management	17	14.0
Finance	8	6.6
Total	121	100.0

The findings on Table 4.7 indicate that majority of KenGen chief officers and managers are in Engineering 24(19.8%), technical 19(15.7%), procurement 14(11.6%), business management

14(11.6%), accounting 11(9.1%), human resource 9(7.4%), finance 8(6.6%) and marketing 5(4.1%) professions.

4.3.2 Influence of Financial Resources on Implementation of Electricity Power Generation Expansion Projects

This section looks at the influence of financial resources on implementation of electricity power generation expansion projects which is an objective of the study. The influence of financial resources on implementation of electricity power generation expansion projects is given in Table 4.8

Table 4.8: Influence of Financial Resources on Implementation of Electricity Power Generation Expansion Projects

Financial Resources	Frequency (F)	Percentage (%)
Yes	121	100.0
No	0	0.0
Total	121	100.0

The results in Table 4.8 indicate that, all the KenGen chief officers and managers 121 (100.0%) agreed financial resources influence implementation of electricity power generation expansion projects. The findings are in line with researchers such as Massie (2006) who points out that financial statements contain valuable information that managers can use to analyze past performance of a project. Stoner *et al.* (2007) noted that financial statements are used to track the monetary value of goods and services into and out of the organization. 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). Money and other

resources in terms of adequate funding until project completion and availability of resources are obvious imperatives to carry out projects. Availability of funds/resources has also been ranked highest by Belassi and Tukul (1996); and White and Fortune (2002).

The extent to which financial resources influence implementation of electricity power generation expansion projects is given in Table 4.9

Table 4.9: Extent to which financial resources influence implementation of electricity power generation expansion projects

Extent of financial resources	Frequency (F)	Percentage (%)
Moderate extent	0	0.0
Great extent	0	0.0
Very great extent	121	100.0
Total	121	100.0

The findings on Table 4.9 indicate that all 121 (100.0%) of the KenGen chief officers and managers agreed to a very great extent that financial resources influence implementation of electricity power generation expansion projects. The extent to which the following statements in regard to influence of financial resources on implementation of electricity power generation expansion projects is given in Table 4.10

Table 4.10: Extent to which financial resources influence implementation of electricity power generation expansion projects

	No extent at all (%)	Little extent (%)	Moderate extent (%)	Great extent (%)	Very great extent (%)
For effective implementation, financial activities at KenGen are planned for, recorded, monitored and controlled	0.0	0.0	0.0	0.0	100.0
Project budgeting is performed at initial stages of project planning	0.0	0.0	0.0	0.0	100.0
Insufficiency of finances or funding reduces timely implementation of projects	0.0	0.0	0.0	0.0	100.0
Proper record keeping and financial reporting sustains and expands and organization project	0.0	0.0	0.0	0.0	100.0
The project finance and accounting function is staffed adequately	0.0	0.0	0.0	8.9	91.1

The results in Table 4.10 indicate that, majority of the KenGen chief officers and managers agreed to a very great extent that: for effective implementation, financial activities at KenGen are planned for, recorded, monitored and controlled (100.0%), project budgeting is performed at initial stages of project planning (100.0%), insufficiency of finances or funding reduces timely implementation of projects (100.0%), proper record keeping and financial reporting sustains and expands and organization project (100.0%) and the project finance and accounting function is staffed adequately (91.1%) are statements regarding influence of financial resources on implementation of electricity power generation expansion projects.

4.3.2 Influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects

This section looks at the influence of top management support on implementation of electricity power generation expansion projects which is an objective of the study. The influence of top management support on implementation of electricity power generation expansion projects is given in Table 4.11

Table 4.11: Influence of top management support on Implementation of Electricity Power Generation Expansion Projects

Top management support	Frequency (F)	Percentage (%)
Yes	121	100.0
No	0	0.0
Total	121	100.0

The results in Table 4.11 indicate that, all the KenGen chief officers and managers 121 (100.0%) agreed top management support influence implementation of electricity power generation expansion projects. The findings are supports Johnson *et al.* (2009) who note that top management support is considered to be among project management Critical Success Factors (CSFs). This means that the more top management processes are practiced in organisations, the higher the level of project success is. Top managers play a crucial role in providing and creating the needed conditions for the project success (Staehr, 2010). Moreover, top management generally, plays an important role in defining the scope of a project and selection of project team as well (Boonstra, 2013). Zwikael (2008) supports the high importance of top management

involvement in projects and concludes that different top management support processes should be implemented in any industry and culture.

The extent to which top management support influence implementation of electricity power generation expansion projects is given in Table 4.12

Table 4.12: Extent to which top management support influence implementation of electricity power generation expansion projects

Extent of top management support	Frequency (F)	Percentage (%)
Moderate extent	0	0.0
Great extent	0	0.0
Very great extent	121	100.0
Total	121	100.0

The findings on Table 4.12 indicate that all 121 (100.0%) of the KenGen chief officers and managers agreed to a very great extent that top management support influence implementation of electricity power generation expansion projects. The extent to which the following statements in regard to influence of top management support on implementation of electricity power generation expansion projects is given in Table 4.13

Table 4.13: Extent to which top management support influence implementation of electricity power generation expansion projects

	No extent at all (%)	Little extent (%)	Moderate extent (%)	Great extent (%)	Very great extent (%)
Top management support results in availability of in-time financial resources and allocation of physical resources that lead to successful implementation and completion of expansion projects	0.0	0.0	0.0	0.0	100.0
Top management at KenGen effectively communicates the requirements of the expansion projects to all concerned parties	0.0	0.0	0.0	0.0	100.0
Managers at KenGen carry out monitoring and evaluation of project progress periodically to check for any deviation	0.0	0.0	0.0	0.0	100.0
Top management at KenGen is involved in the planning and monitoring of project as well as resource allocation	0.0	0.0	0.0	0.0	100.0
Top management at KenGen constantly monitor the progress of the expansion projects and provides direction for implementation	0.0	0.0	0.0	0.0	100.0

The results in Table 4.13 indicate that, majority of the KenGen chief officers and managers agreed to a very great extent that: top management support results in availability of in-time financial resources and allocation of physical resources that lead to successful implementation and completion of expansion project (100.0%), top management at KenGen effectively communicates the requirements of the expansion projects to all concerned parties (100.0%), managers at KenGen carry out monitoring and evaluation of project progress periodically to check for any deviation managers at KenGen carry out monitoring and evaluation of project progress periodically to check for any deviation (100.0%), top management at KenGen is involved in the planning and monitoring of project as well as resource allocation (100.0%) and top management at KenGen constantly monitor the progress of the expansion projects and

provides direction for implementation (100.0%) are statements regarding influence of top management support on implementation of electricity power generation expansion projects.

4.3.4 Influence of Community Support on Implementation of Electricity Power Generation Expansion Projects

This section looks at the influence of community support on implementation of electricity power generation expansion projects which is an objective of the study. The influence of community support on implementation of electricity power generation expansion projects is given in Table 4.14

Table 4.14: Influence of community support on Implementation of Electricity Power Generation Expansion Projects

Community support	Frequency (F)	Percentage (%)
Yes	99	81.8
No	22	18.2
Total	121	100.0

The results in Table 4.14 indicate that, majority of the KenGen chief officers and managers 99 (81.8%) agreed community support influence implementation of electricity power generation expansion projects while 22 (18.2%) disagreed. The findings are in line with researchers such as Vinod (2003) who contends that expansion of electricity projects benefit more by involving local communities or suffer from absence of it. Community involvement is another factor in the communication component. It has been found to be an important factor in previous studies (Awakul and Ogunlana, 2002). Large-scale construction projects are usually fraught with controversy. Therefore, a supportive and understanding community is necessary for smooth

implementation. This cannot be achieved unless the project information is shared adequately. Yeo (1995) noted that a large infrastructure project needs support and understanding from the community affected by the project, especially during the construction period. . It is essential that the project participants should truthfully share the project information and obtain different public perspectives regarding their project (Kariungi, 2014).

The extent to which community support influence implementation of electricity power generation expansion projects is given in Table 4.15

Table 4.15: Extent to which community support influence implementation of electricity power generation expansion projects

Extent of community support	Frequency (F)	Percentage (%)
Moderate extent	0	0.0
Great extent	10	8.3
Very great extent	111	91.7
Total	121	100.0

The findings on Table 4.15 indicate that majority 111 (91.7%) of the KenGen chief officers and managers agreed to a very great extent that community support influence implementation of electricity power generation expansion projects while 10(8.3%) agreed to a great extent. The extent to which the following statements in regard to influence of community support on implementation of electricity power generation expansion projects is given in Table 4.16

Table 4.16: Extent to which community support influence implementation of electricity power generation expansion projects

	No extent at all (%)	Little extent (%)	Moderate extent (%)	Great extent (%)	Very great extent (%)
KenGen ensures community participation in power expansion projects through public hearing and public committees that feedback the community concerns and issues the project brings	0.0	0.0	0.0	0.0	100.0
KenGen has created awareness of proper use of electricity as well as educated the community against vandalism of power expansion projects	0.0	0.0	0.0	0.0	100.0
KenGen has taken the initiative of communicating and informing the community on the way leave provisions and the compensations expected	0.0	0.0	0.0	0.0	100.0
Civic education and awareness campaigns by KenGen has led to project acceptance by the community	0.0	0.0	0.0	8.3	91.7

The results in Table 4.16 indicate that, majority of the KenGen chief officers and managers agreed to a very great extent that: KenGen ensures community participation in power expansion projects through public hearing and public committees that feedback the community concerns and issues the project bring (100.0%), KenGen has created awareness of proper use of electricity as well as educated the community against vandalism of power expansion projects (100.0%), KenGen has taken the initiative of communicating and informing the community on the way leave provisions and the compensations expected (100.0%), and the civic education and awareness campaigns by KenGen has led to project acceptance by the community (91.7%) are statements regarding influence of community support on implementation of electricity power generation expansion projects.

4.3.5 Influence of procurement procedures on Implementation of Electricity Power Generation Expansion Projects

This section looks at the influence of procurement procedures on implementation of electricity power generation expansion projects which is an objective of the study. The influence of procurement procedures on implementation of electricity power generation expansion projects is given in Table 4.17

Table 4.17: Influence of procurement procedures on Implementation of Electricity Power Generation Expansion Projects

Procurement procedures	Frequency (F)	Percentage (%)
Yes	121	100.0
No	0	0.0
Total	121	100.0

The results in Table 4.17 indicate that, all the KenGen chief officers and managers 121 (100.0%) agreed procurement procedures influence implementation of electricity power generation expansion projects. The findings supports Kariungi, (2014) who notes that procurement is the entire process of acquiring materials, property and services required for a particular project. Divakar & Subramanian (2009) explains that an effective procurement process ensures that materials are available at the right time, right quantity, for the right client, and at a reasonable price and quality. Murray *et al*, (2002) cites that stringent conditions for pre-qualification and tendering, lack of transparency in the procurement of public works, and lack of affirmative policies for the promotion of local contractors as contributing factors to the lack of effectiveness

and mediocre performance of donor-funded projects, even resulting in unfair competition and corruption.

The extent to which procurement procedures influence implementation of electricity power generation expansion projects is given in Table 4.18

Table 4.18: Extent to which procurement procedures influence implementation of electricity power generation expansion projects

Extent of procurement procedures	Frequency (F)	Percentage (%)
Moderate extent	0	0.0
Great extent	0	0.0
Very great extent	121	100.0
Total	121	100.0

The findings on Table 4.18 indicate that all 121 (100.0%) of the KenGen chief officers and managers agreed to a very great extent that procurement procedures influence implementation of electricity power generation expansion projects. The extent to which the following statements in regard to influence of procurement procedures on implementation of electricity power generation expansion projects is given in Table 4.19

Table 4.19: Extent to which procurement procedures influence implementation of electricity power generation expansion projects

	No extent at all (%)	Little extent (%)	Moderate extent (%)	Great extent (%)	Very great extent (%)
KenGen present a competitive process in the procurement of resources for electricity power expansion projects	0.0	0.0	0.0	0.0	100.0
KenGen observes transparency and integrity in the procuring procedure as stipulated by Public Procurement Oversight Authority	0.0	0.0	0.0	0.0	100.0
For competent project contractors, the organization selects contractors based on expertise, reliability, reputation, and merit	0.0	0.0	0.0	0.0	100.0
Contractor selection process is key in electricity power generation expansion projects so as to get someone who can cope with all aspects of the project, increasing chances of successful implementation and completion of the projects	0.0	0.0	0.0	0.0	100.0
KenGen present a competitive process in the procurement of resources for electricity power expansion projects	0.0	0.0	0.0	0.0	100.0

The results in Table 4.19 indicate that, majority of the KenGen chief officers and managers agreed to a very great extent that: KenGen present a competitive process in the procurement of resources for electricity power expansion projects (100.0%), KenGen observes transparency and integrity in the procuring procedure as stipulated by Public Procurement Oversight Authority (100.0%), For competent project contractors, the organization selects contractors based on expertise, reliability, reputation, and merit (100.0%), Contractor selection process is key in electricity power generation expansion projects so as to get someone who can cope with all aspects of the project, increasing chances of successful implementation and completion of the projects (100.0%) and KenGen present a competitive process in the procurement of resources for

electricity power expansion projects (100.0%) are statements regarding influence of procurement procedures on implementation of electricity power generation expansion projects.

4.3.6 Other Challenges faced in the implementation of electricity power generation expansion projects in Kenya

Other challenges faced in the implementation of electricity power generation expansion projects in Kenya include: inadequate power supply capacity due to rise in demand for electricity, which is growing faster than the ability to install additional generation plants; over-dependence on hydro-power, which exposes the country to power rationing due to extreme weather conditions that result in drought; shortage of transformers and overstressed distribution network; dependence on donor funding for various projects; long delays in development of power infrastructure because building of power generation, transmission and distribution network is capital intensive and takes inordinately long time from conception to commissioning; low investments in power generation by private investors because many Independent Power Producers (IPPs) are not interested in investing, and those few who show interest take too long to implement projects and sometimes demand enormous terms, such as very high generation tariffs, government guarantees and letters of credit covering several months of payment for both capital and energy charges; inadequate sea port facilities for handling imported coal and natural gas, which are cheaper primary energy resources than petroleum oil based fuels for power generation; high and ever rising international prices of fossil fuels; obsolete oil refinery system; conflict with food security issues when developing the bio-diesel industry; and unrealistic demands by local communities where energy resources like coal, gas and oil are discovered.

4.3.7 Suggestions/recommendations towards the challenges in the implementation of electricity power generation expansion projects in Kenya

The study sought to find out from the challenges in the implementation of electricity power generation expansion projects in Kenya. The responses given include: the leaders of change initiatives at Kenya Power and other public institutions to consider changing the organizational structures with a view to reducing the reporting lines; the management should ensure that all the stakeholders are involved during project planning and motivate employees based on the performance because this emanates from the fact the majority of the respondents disagreed that all the employees are involved in project planning and that the top managers ensures that all the employees are rewarded based on their performance; KenGen 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; and KenGen should continue encouraging potential consumers to connect to power and set up a rural electrification committee to represent the local community because this will enable the organization to positively and significantly improve on the implementation of the expansion of their electricity projects; and project activities need to be properly documented irrespective of the nature and magnitude of the project as this would provide information necessary for monitoring and evaluating various project challenges and hence prevent recurrence in future projects; project planning tools should be improved to enhance the capacity to forecast the expected project activities and their financial implications.

The responses further given include: there is need to provide top management support to project teams as it is necessary to allocate valuable organizational resources which is considered vital for effectively implementation of project; top management support promotes training of project managers, planning and provision of organizational project resources in order to successfully complete of power projects; the study also recommends that there is need to understand stakeholder influence is a key ingredient of successful completion of power projects in KenGen. The study further recommends that KenGen should integrate information technology in implementation of power projects. Information technology encompasses IT policy, IT skills, provision of suitable project management software, and promoting positive staff perception on IT innovations effectively leading to improved consistency of power project execution by enabling greater visibility to project data and allowing managers to report track progress more easily.

Other recommendations include: KenGen should promote organization structure that entails establishing project manager's authority over project team, ensures resources availability, control of project's budget, and project management administrative staff as this has a positive and significant influence on the successful completion of power projects. KenGen should carry out a rigorous analysis during contractor selection to identify the best contractor. They should do statements of needs before contracting and also seek for contractor credibility first before the organization enters into contract with the contractor for effective implementation of the expansion of their electricity projects.

4.3.9 Correlation Analysis

Table 4.19 Correlation Analysis

		Influence of Financial Resources on Implementation of Electricity Power Generation Expansion Projects	Influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects	Influence of Community Support on Implementation of Electricity Power Generation Expansion Projects	Influence of Procurement procedures on Implementation of Electricity Power Generation Expansion Projects
Influence of Financial Resources on Implementation of Electricity Power Generation Expansion Projects	Pearson Correlation	1			
Influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects	Pearson Correlation	.755	1		
Influence of Community Support on Implementation of Electricity Power Generation Expansion Projects	Pearson Correlation	.827**	.214	1	
Influence of Procurement procedures on Implementation of Electricity Power Generation Expansion Projects	Pearson Correlation	.722**	.547	.113	1

The Pearson's correlation co-efficient of challenges in the implementation of electricity power generation expansion projects in Kenya and influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects is 0.755, influence of Community Support on Implementation of Electricity Power Generation Expansion Projects (0.827), and influence of Procurement procedures on Implementation of Electricity Power

Generation Expansion Projects (0.722). These coefficients imply that there exists a positive association of influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects (75.5%), influence of Community Support on Implementation of Electricity Power Generation Expansion Projects (82.7%), and influence Procurement procedures on Implementation of Electricity Power Generation Expansion Projects (72.2%) to challenges in the implementation of electricity power generation expansion projects in Kenya. This positive association suggests that when one increases, challenges in the implementation of electricity power generation expansion projects in Kenya increase.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The basic purpose of this chapter is to give the summary, discussions, conclusions and recommendations of the study. This chapter provides the summary, discussion, conclusions and recommendations of the study. This was based on the research findings that is presented and discussed in the previous chapters. The study established several findings which make a direct contribution to knowledge and policy formulation. Recommendations both for further research as well as policy and practice have been made.

5.2 Summary of Research Findings

This study aimed at determining the challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen. The task included; establishing the extent to which financial resources influence implementation of electricity power generation expansion projects in Kenya; determining the extent to which top management support influences implementation of electricity power generation expansion projects in Kenya; finding out how community support influences implementation of electricity power generation expansion projects in Kenya; and establishing the extent to which procurement process and procedures influence implementation of electricity power generation expansion projects in Kenya. The study reviewed previous studies with a view to establish academic gaps which the present study sought to bridge. This was done through library research.

This study adopted a descriptive survey design and employed quantitative research as the main approach to guide the study. The study targeted 121 chief officers and managers at KenGen. The research instrument used in data collection was a questionnaire to draw information from the respondents. To ensure validity of the instruments, expert opinion was sought. Data analysis was started immediately after the field. Data was summarized into frequencies and percentages and presented in tables. This section comprises of discussions based on the specific research objectives of the study.

The study findings reveal that majority of KenGen chief officers and managers are males aged between 38-42 years who have completed undergraduate level of education. The findings also reveal that majority of KenGen chief officers and managers have worked at KenGen for 8-11 year. Majority of KenGen chief officers and managers have been involved in electricity power generation expansion projects for over 11 years and are in engineering professions.

5.2.1 Major Findings on the Influence of Financial Resources on Implementation of Electricity Power Generation Expansion Projects

The second objective was to establish the influence of financial resources on implementation of electricity power generation expansion projects. The measurement of this objective was based on one indicator namely; financial resources. The major finding of this objective was that all the KenGen chief officers and managers agreed that Financial Resources influences Implementation of Electricity Power Generation Expansion Projects. The findings reveal that all KenGen chief officers and managers agreed that Financial Resources influences Implementation of Electricity Power Generation Expansion Projects to a very great extent. The findings reveal that majority of

the KenGen chief officers and managers agreed to a very great extent that: for effective implementation, financial activities at KenGen are planned for, recorded, monitored and controlled, project budgeting is performed at initial stages of project planning (100.0%), insufficiency of finances or funding reduces timely implementation of projects, proper record keeping and financial reporting sustains and expands and organization project and the project finance and accounting function is staffed adequately are statements regarding influence of financial resources on implementation of electricity power generation expansion projects.

5.2.3 Major Findings on the Influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects

The third objective was to establish the influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects. The measurement of this objective was based on one indicator namely; top management support. The major finding of this objective was that majority of KenGen chief officers and managers agreed that top management support influence implementation of electricity power generation expansion projects. Majority of the KenGen chief officers and managers indicated that top management support influence implementation of electricity power generation expansion projects to a very great extent.

The findings also reveal that majority of the KenGen chief officers and managers agreed to a very great extent that the top management support results in availability of in-time financial resources and allocation of physical resources that lead to successful implementation and completion of expansion project, top management at KenGen effectively communicates the requirements of the expansion projects to all concerned parties, managers at KenGen carry out

monitoring and evaluation of project progress periodically to check for any deviation managers at KenGen carry out monitoring and evaluation of project progress periodically to check for any deviation, top management at KenGen is involved in the planning and monitoring of project as well as resource allocation and top management at KenGen constantly monitor the progress of the expansion projects and provides direction for implementation are statements regarding influence of top management support on implementation of electricity power generation expansion projects.

5.2.4 Major Findings on the Influence of Community Support on Implementation of Electricity Power Generation Expansion Projects

The fourth objective of the study was to examine the influence of Community Support on Implementation of Electricity Power Generation Expansion Projects. The measurement of this objective was based on one indicator namely; community support. The major finding of this objective was that majority of KenGen chief officers and managers agreed that community support influence implementation of electricity power generation expansion projects. Majority of the KenGen chief officers and managers agreed to a very great extent that community support influence implementation of electricity power generation expansion projects.

The findings further reveal that majority of the KenGen chief officers and managers agreed to a very great extent that KenGen ensures community participation in power expansion projects through public hearing and public committees that feedback the community concerns and issues the project bring, KenGen has created awareness of proper use of electricity as well as educated

the community against vandalism of power expansion projects, KenGen has taken the initiative of communicating and informing the community on the way leave provisions and the compensations expected, and the civic education and awareness campaigns by KenGen has led to project acceptance by the community are statements regarding influence of community support on implementation of electricity power generation expansion projects.

5.2.5 Major Findings on the Influence of Procurement procedures on Implementation of Electricity Power Generation Expansion Projects

The fourth objective of the study was to examine the influence of Procurement procedures on Implementation of Electricity Power Generation Expansion Projects. The measurement of this objective was based on one indicator namely; procurement procedures. The major finding of this objective was that all the KenGen chief officers and managers agreed that procurement procedures influence implementation of electricity power generation expansion projects. The findings further reveal that all the KenGen chief officers and managers agreed that procurement procedures influence implementation of electricity power generation expansion projects to a very great extent. The findings reveal that majority of the KenGen chief officers and managers agreed to a very great extent that KenGen present a competitive process in the procurement of resources for electricity power expansion projects, KenGen observes transparency and integrity in the procuring procedure as stipulated by Public Procurement Oversight Authority, For competent project contractors, the organization selects contractors based on expertise, reliability, reputation, and merit, Contractor selection process is key in electricity power generation expansion projects so as to get someone who can cope with all aspects of the project, increasing chances of

successful implementation and completion of the projects and KenGen present a competitive process in the procurement of resources for electricity power expansion projects are statements regarding influence of procurement procedures on implementation of electricity power generation expansion projects.

The findings reveal that other challenges faced in the implementation of electricity power generation expansion projects in Kenya include: inadequate power supply capacity due to rise in demand for electricity, which is growing faster than the ability to install additional generation plants; over-dependence on hydro-power, which exposes the country to power rationing due to extreme weather conditions that result in drought; shortage of transformers and overstressed distribution network; dependence on donor funding for various projects; long delays in development of power infrastructure because building of power generation, transmission and distribution network is capital intensive and takes inordinately long time from conception to commissioning; low investments in power generation by private investors because many Independent Power Producers (IPPs) are not interested in investing, and those few who show interest take too long to implement projects and sometimes demand enormous terms, such as very high generation tariffs, government guarantees and letters of credit covering several months of payment for both capital and energy charges; inadequate sea port facilities for handling imported coal and natural gas, which are cheaper primary energy resources than petroleum oil—based fuels for power generation; high and ever—rising international prices of fossil fuels; obsolete oil refinery system; conflict with food security issues when developing the bio-diesel

industry; and unrealistic demands by local communities where energy resources like coal, gas and oil are discovered.

5.3 Discussions of the Findings

The study findings reveal that financial resources on implementation of electricity power generation expansion projects.. The major finding on this objective was that financial resources on implementation of electricity power generation expansion projects.to a very great extent. The findings further reveal that KenGen chief officers and managers agreed to a very great extent that: for effective implementation, financial activities at KenGen are planned for, recorded, monitored and controlled, project budgeting is performed at initial stages of project planning, insufficiency of finances or funding reduces timely implementation of projects, proper record keeping and financial reporting sustains and expands and organization project and the project finance and accounting function is staffed adequately are statements regarding influence of financial resources on implementation of electricity power generation expansion projects. The findings are in line with researchers such as Massie (2006) who points out that financial statements contain valuable information that managers can use to analyze past performance of a project. Stoner *et al.* (2007) noted that financial statements are used to track the monetary value of goods and services into and out of the organization. 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). Money and other resources in terms of adequate funding until project completion and availability of resources are obvious imperatives

to carry out projects. Availability of funds/resources has also been ranked highest by Belassi and Tukel (1996); and White and Fortune (2002).

The study findings reveal that KenGen chief officers and managers agreed that top management support influence implementation of electricity power generation expansion projects. The major finding on this objective was that KenGen chief officers and managers indicated that top management support influence implementation of electricity power generation expansion projects to a very great extent. The findings also reveal that majority of the KenGen chief officers and managers agreed to a very great extent that top management support results in availability of in-time financial resources and allocation of physical resources that lead to successful implementation and completion of expansion project, top management at KenGen effectively communicates the requirements of the expansion projects to all concerned parties, managers at KenGen carry out monitoring and evaluation of project progress periodically to check for any deviation managers at KenGen carry out monitoring and evaluation of project progress periodically to check for any deviation, top management at KenGen is involved in the planning and monitoring of project as well as resource allocation and top management at KenGen constantly monitor the progress of the expansion projects and provides direction for implementation are statements regarding influence of top management support on implementation of electricity power generation expansion projects. The findings supports Johnson *et al.* (2009) who note that top management support is considered to be among project management Critical Success Factors (CSFs). This means that the more top management processes are practiced in organisations, the higher the level of project success is. Top managers

play a crucial role in providing and creating the needed conditions for the project success (Staehr, 2010). Moreover, top management generally, plays an important role in defining the scope of a project and selection of project team as well (Boonstra, 2013). Zwikael (2008) supports the high importance of top management involvement in projects and concludes that different top management support processes should be implemented in any industry and culture.

Findings from the study reveal that community support influence implementation of electricity power generation expansion projects. The study findings revealed that community support influence implementation of electricity power generation expansion projects to a very great extent. The findings further reveal that majority of the KenGen chief officers and managers agreed to a very great extent that KenGen ensures community participation in power expansion projects through public hearing and public committees that feedback the community concerns and issues the project bring KenGen has created awareness of proper use of electricity as well as educated the community against vandalism of power expansion projects, KenGen has taken the initiative of communicating and informing the community on the way leave provisions and the compensations expected, and the civic education and awareness campaigns by KenGen has led to project acceptance by the community are statements regarding influence of community support on implementation of electricity power generation expansion projects. The findings are in line with researchers such as Vinod (2003) who contends that expansion of electricity projects benefit more by involving local communities or suffer from absence of it. Community involvement is another factor in the communication component. It has been found to be an important factor in previous studies (Awakul and Ogunlana, 2002). Large-scale construction projects are usually

fraught with controversy. Therefore, a supportive and understanding community is necessary for smooth implementation. This cannot be achieved unless the project information is shared adequately. Yeo (1995) noted that a large infrastructure project needs support and understanding from the community affected by the project, especially during the construction period. . It is essential that the project participants should truthfully share the project information and obtain different public perspectives regarding their project (Kariungi, 2014).

The study findings reveal that KenGen chief officers and managers agreed that procurement procedures influence implementation of electricity power generation expansion projects. The major finding on this objective was that KenGen chief officers and managers indicated that procurement procedures influence implementation of electricity power generation expansion projects to a very great extent. The findings reveal that majority of the KenGen chief officers and managers agreed to a very great extent that KenGen present a competitive process in the procurement of resources for electricity power expansion projects, KenGen observes transparency and integrity in the procuring procedure as stipulated by Public Procurement Oversight Authority, For competent project contractors, the organization selects contractors based on expertise, reliability, reputation, and merit, Contractor selection process is key in electricity power generation expansion projects so as to get someone who can cope with all aspects of the project, increasing chances of successful implementation and completion of the projects and KenGen present a competitive process in the procurement of resources for electricity power expansion projects are statements regarding influence of procurement procedures on implementation of electricity power generation expansion projects. The findings

supports Kariungi, (2014) who notes that procurement is the entire process of acquiring materials, property and services required for a particular project. Divakar & Subramanian (2009) explains that an effective procurement process ensures that materials are available at the right time, right quantity, for the right client, and at a reasonable price and quality. Murray *et al*, (2002) cites that stringent conditions for pre-qualification and tendering, lack of transparency in the procurement of public works, and lack of affirmative policies for the promotion of local contractors as contributing factors to the lack of effectiveness and mediocre performance of donor-funded projects, even resulting in unfair competition and corruption.

5.4 Conclusion of the Study

The study found that there exists a positive association between: financial resources on implementation of electricity power generation expansion projects; influence of top management support on implementation of electricity power generation expansion projects; influence of community support on implementation of electricity power generation expansion projects; influence of procurement procedures on implementation of electricity power generation expansion projects to challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen. This positive association suggests that when one increases, challenges in the implementation of electricity power generation expansion projects in Kenya increase. The study therefore concludes that financial resources, top management support, community support community support and procurement procedures are challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen.

5.5 Recommendations of the Study

On the basis of the above, conclusions, the following recommendations were made for challenges in the implementation of electricity power generation expansion projects in Kenya.

5.5.1 Recommendations for policy and practice

The study recommends there is need for the leaders of change initiatives at Kenya Power and other public institutions to consider changing the organizational structures with a view to reducing the reporting lines; the management should ensure that all the stakeholders are involved during project planning and motivate employees based on the performance because this emanates from the fact the majority of the respondents disagreed that all the employees are involved in project planning and that the top managers ensures that all the employees are rewarded based on their performance; KenGen 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; and KenGen should continue encouraging potential consumers to connect to power and set up a rural electrification committee to represent the local community because this will enable the organization to positively and significantly improve on the implementation of the expansion of their electricity projects; and project activities need to be properly documented irrespective of the nature and magnitude of the project as this would provide information necessary for monitoring and evaluating various project challenges and hence prevent recurrence in future projects; project planning tools should be improved to enhance the capacity to forecast the expected project activities and their financial implications.

The study further recommends that there is need to provide top management support to project teams as it is necessary to allocate valuable organizational resources which is considered vital for effectively implementation of project; top management support promotes training of project managers, planning and provision of organizational project resources in order to successfully complete of power projects; the study also recommends that there is need to understand stakeholder influence is a key ingredient of successful completion of power projects in KenGen. KenGen's project managers should try to acknowledge concerns of all stakeholders and in a dialogue seek to reconcile conflicting interests, culminating in the successful completion of power projects. The study further recommends that KenGen should integrate information technology in implementation of power projects .Information technology encompasses IT policy, IT skills, provision of suitable project management software, and promoting positive staff perception on IT innovations effectively leading to improved consistency of power project execution by enabling greater visibility to project data and allowing managers to report track progress more easily. KenGen should promote organization structure that entails establishing project manager's authority over project team, ensures resources availability, control of project's budget, and project management administrative staff as this has a positive and significant influence on the successful completion of power projects.

The study further recommends that: KenGen should carry out a rigorous analysis during contractor selection to identify the best contractor. They should do statements of needs before contracting and also seek for contractor credibility first before the organization enters into contract with the contractor for effective implementation of the expansion of their electricity projects.

5.5.2 Recommendations for further research

This study sought to establish the challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen attempting to bridge the gap in knowledge that existed. Although the study attained these, it mainly focused on one organization that is KenGen. There is need to replicate the study and focus on issues in Project implementation of electricity power generation expansion projects in Kenya as well as challenges facing the Ministry of Energy in the implementation of electricity power generation expansion projects in Kenya; and influence of organizational characteristics on the performance of electricity projects in KenGen.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Kharey Ali Yarrow,
P.O Box 30197,
Nairobi, Kenya
14th May, 2017.

Dear Respondent,

RE: **DATA COLLECTION**

I am a student at University of Nairobi currently undertaking a research study to fulfill the requirements of the Award of Diploma in Project Planning and Management on the **Challenges in the Implementation of Electricity Power Generation Expansion Projects in Kenya with a Focus on KenGen**. You have been selected to participate in this study and I would highly appreciate if you assisted me by responding to all questions in the attached questionnaire as completely, correctly and honestly as possible. Kindly note that the study will be conducted as academic research and the information you provide will be treated as confidential. Your participation in the exercise is voluntary but it would be helpful if you could participate fully. Kindly spare a few minutes from your busy schedule to complete the attached questionnaire.

Thank you in advance for your co-operation.

Yours Faithfully,

Kharey Ali Yarrow
Researcher

APPENDIX II: QUESTIONNAIRE

This questionnaire is designed to collect data on the challenges in the implementation of electricity power generation expansion projects in Kenya with a focus on KenGen. Kindly complete the following questionnaire using the instructions provided for each set of question. Tick appropriately. Do not write your name on this questionnaire.

Part A: Respondent's Background Information

1. What is your gender?

Male Female

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

18-22 years 23-27 years 28-32 years 33-37 years
 38-42 years 43-47 years 48-52 years 53 and above

3. What is your education level (state the highest level)

Certificate Diploma Undergraduate
 Post Graduate PhD Other _____

4. How long have you worked with KenGen?

Less than a year 1-3 years 4-6 years 7-9 years Over 10 years

5. How long have you been involved in electricity power generation expansion projects?

Less than a year 1-3 years 3-4 years Over 5 years

6. What is your career orientation (your main profession)?

Accounting Procurement Engineering Technical
 Marketing Project Management Other _____

Part B: Influence of Financial Resources on Implementation of Electricity Power Generation Expansion Projects

7. In your opinion do financial resources influence implementation of electricity power generation expansion projects in Kenya?

Yes No

To what extent

To a very great extent To a great extent To a moderate extent

To a low extent To a very low extent

8. To what extent do you agree with the following in regard to financial resources and its influence on implementation of electricity power generation expansion projects in Kenya?

Indicate your response based on a 5-point scale by using a tick (✓) or X to mark the applicable box.

Financial Resources	Not at all (1)	Little extent (2)	Moderate extent (3)	Great extent (4)	Very great extent (5)
For effective implementation, financial activities at KenGen are planned for, recorded, monitored and controlled					
Project budgeting is performed at initial stages of project planning					
Insufficiency of finances or funding reduces timely implementation of projects					
Proper record keeping and financial reporting sustains and expands and organization project					
The project finance and accounting function is staffed adequately					

Part C: Influence of Top Management Support on Implementation of Electricity Power Generation Expansion Projects

9. In your opinion does top management support influence implementation of electricity power generation expansion projects in Kenya?

Yes No
To what extent

To a very great extent To a great extent To a moderate extent

To a low extent To a very low extent

10. To what extent do you agree with the following in regard to top management support and its influence on implementation of electricity power generation expansion projects in Kenya?

Indicate your response based on a 5-point scale by using a tick (√) or X to mark the applicable box.

Top Management Support	Not at all (1)	Little extent (2)	Moderate extent (3)	Great extent (4)	Very great extent (5)
Top management support results in availability of in-time financial resources and allocation of physical resources that lead to successful implementation and completion of expansion projects					
Top management at KenGen effectively communicates the requirements of the expansion projects to all concerned parties					
Managers at KenGen carry out monitoring and evaluation of project progress periodically to check for any deviation					
Top management at KenGen is					

involved in the planning and monitoring of project as well as resource allocation					
Top management at KenGen constantly monitor the progress of the expansion projects and provides direction for implementation					

Part D: Influence of Community Support on Implementation of Electricity Power Generation Expansion Projects

11. In your own view, does community support influence implementation of electricity power generation expansion projects in Kenya?

Yes No

To what extent

To a very great extent To a great extent To a moderate extent

To a low extent To a very low extent

12. To what extent do you agree with the following in regard to community support and its influence on implementation of electricity power generation expansion projects in Kenya?

Indicate your response based on a 5-point scale by using a tick (√) or X to mark the applicable box.

Community Support	Not at all (1)	Little extent (2)	Moderate extent (3)	Great extent (4)	Very great extent (5)
Civic education and awareness campaigns by KenGen has led to project acceptance by the community					
KenGen ensures community participation in power expansion projects through public hearing and public committees that feedback the community concerns and issues the					

project brings					
KenGen has created awareness of proper use of electricity as well as educated the community against vandalism of power expansion projects					
KenGen has taken the initiative of communicating and informing the community on the way leave provisions and the compensations expected					

Part E: Influence of Procurement procedures on Implementation of Electricity Power Generation Expansion Projects

13. In your own view, do procurement procedures influence implementation of electricity power generation expansion projects in Kenya?

Yes No

To what extent

To a very great extent To a great extent To a moderate extent

To a low extent To a very low extent

14. To what extent do you agree with the following in regard to procurement procedures and its influence on implementation of electricity power generation expansion projects in Kenya?

Indicate your response based on a 5-point scale by using a tick (✓) or X to mark the applicable box.

Procurement Procedures	Not at all (1)	Little extent (2)	Moderate extent (3)	Great extent (4)	Very great extent (5)
KenGen present a competitive process in the procurement of resources for electricity power expansion projects					
KenGen observes transparency and					

integrity in the procuring procedure as stipulated by Public Procurement Oversight Authority					
For competent project contractors, the organization selects contractors based on expertise, reliability, reputation, and merit					
Contractor selection process is key in electricity power generation expansion projects so as to get someone who can cope with all aspects of the project, increasing chances of successful implementation and completion of the projects					

15. Kindly name other challenges faced in the implementation of electricity power generation expansion projects in Kenya?

16. Please give suggestions/recommendations towards challenges in the implementation of electricity power generation expansion projects in Kenya

THANK YOU FOR YOUR TIME AND COOPERATION!!