

**CHARACTERISTICS OF MEGA PROJECTS AND
THEIR INFLUENCE ON FINANCE MOBILIZATION IN
PARASTATALS IN KENYA'S ENERGY SECTOR**

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**Characteristics of Mega Projects and their Influence on Finance
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DECLARATION

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

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DEDICATION

To my wife, Hellen Thuita, my sons Gabriel Ngahu and Emmanuel Thuita and to all my friends who have always been there for me when I needed them during development of this thesis.

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LIST OF ABBREVIATIONS AND ACRONYMS

AfDB	Africa Development Bank
ANOVA	Analysis of Variances
BLUE	Best Linear Unbiased Estimators
CPEC	China Pakistan Economic Corridor
ERC	Energy Regulatory Commission
GDC	Geothermal Development Company
GDP	Gross Domestic Product
GoK	Government of Kenya
IAEA	International Atomic Energy Agency
IBM	International Business Machines
ICA	Infrastructure Consortium for Africa
IDA	International Development Association
IFWG	Intergovernmental FinTech Working Group
IMF	International Monetary Fund
IPPs	Independent Power Producers
IRR	Internal Rate of Return
KEMP	Kenya Electricity Modernization Project
KenGen	Kenya Energy Generating Company
KENTRACO	Kenya Electricity Transmission Company
KNCHR	Kenya National Commission on Human Rights
KPLC	Kenya Power and Lighting Company,

LICs	Low-income countries
LM	Lagrangian Multipliers
LNG	Liquefied Natural Gas
MDBs	Multilateral Development Banks
MFD	Maximizing Finance for Development
NACOSTI	National Commission of Science, Technology and Innovation
NPV	Net Present Value
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OOF	Other Official Flows
PP	Payback Period
PPMCC	Pearson's Product Moment Correlation Coefficient
PPPs	Public Private Partnerships
PwC	Pricewaterhouse Coopers
REA	Rural Electrification Authority
RFE	Risk in the Front End
RII	Relative Importance Index
ROI	Return on Investment
SPSS	Statistical Package for Social Sciences
SREB	Silk Road Economic Belt
THIP	Thika Highway Improvement Project
UK	United Kingdom
UNCTD	United Nations Conference on Trade and Development

UNDP	United Nations Development Programme
USD	United States Dollar
VGF	Viability Gap Funding
VIF	Variance Inflation Factor
WBG	World Bank Group
WEF	World Economic Forum

OPERATIONAL DEFINITION OF TERMS

Financial goal orientation: Goal orientation is defined as the collective state which represents the shared perceptions of team members with regard to the goals their organizations are pursuing. On the other hand, financial goal orientation is described as the alignment of large organizations in reference to financial goals such as wealth creation, generation of steady income stream and tax efficient structures. In the context of the present study, financial goal orientation is operationalized by such indicators as sales-to-asset ratio, networth of firm and average payback period (Wessel , Decker, Lange, & Hack, 2014).

Financial mobilization: This is defined as the process of gathering capital which is required in order to achieve goals and objectives for an organization. This is in realization that financial capital is the cornerstone for procurement, utilization and maintenance of all types of resources (Omukoba, Simatwa, & Ayondo, 2011).

Financial risks: Financial risks are those risks which have a negative impact or effect on the cash flows of the financial plan such that the viability of a project is endangered or its profitability limited. In this study financial risks are associated with forex gain or loss, interest rate and exchange rate (Xenidis & Angelides, 2005).

Mega projects: These are defined as huge or robust projects that require extended period of time to implement and complete. Oftentimes, they are large-scale, complex undertakings that cost billions of money (minimum of Ksh 1 billion), take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people (Flyvbjerg, 2014).

Parastatals: These are agencies, companies, boards or organizations that are owned by the government and are tasked with running essential functions of the government. They are set out under the State Corporations Act (Republic of Kenya, 2012).

Project costs: These are costs that are incurred at the onset and during the implementation of a given project or projects. In most cases, expenditures for the public sector particularly in relation to mega projects come from long term forms of financing. Project cost are characterized by average initial capital required at the onset of the project, a cost of finance requisite in the project implementation (Irving & Manroth, 2009).

Stakeholder analysis: This is defined as the process of gathering and analyzing qualitative information in a systematic way with the object of determining whose interests should be taken into consideration when coming up or implementing a policy, project or a program. Profits generated annually, debt-to-equity ratio and the Altman's z-score coefficient have been used as the metrics for stakeholder analysis (Coble, Coussens & Quinn, 2009).

ABSTRACT

The energy sector is very critical to the socio-economic development of the country. Most mega project under the purview of this sector are a testament to its importance. Several such projects, however, have delayed, others have stalled while several others are dogged by scandals ranging from embezzlement of funds by the persons entrusted in their implementation to stakeholders exhibiting divergent interests in the projects. On this premise, this study evaluated the influence of various mega project characteristics on mobilization of finances required in project implementation. The specific objectives included to examine the influence of financial risks, project costs, financial goal orientation and stakeholder analysis on financial mobilization among parastatals in the energy sector. Additionally, the study examined the moderating effect of annual budgeted project costs on the relationship between mega project characteristics and finance mobilization. The study was guided by financial risk theory, agency cost theory, goal setting theory, stakeholder theory, resource dependency theory as well as resource mobilization theory. The study employed cross sectional survey research design where project managers working in all mega projects in Kenya's energy sector were targeted. Positivism philosophy was also adopted to guide the study. A census survey was conducted on the 32 project managers. A structured questionnaire and secondary data collection sheet were employed to facilitate data collection. The questionnaire was tested for validity and reliability. The collected data were analyzed using the Statistical Package for Social Sciences tool. Descriptive statistics as well as inferential statistics were used to analyze the data. The results of the aforesaid analyses were presented in graphical and tabular forms. Additionally, the null hypotheses were tested at 95% confidence level. The primary and secondary analytical results were triangulated for comparison purposes. According to the study findings, it was observed that correlation results of all predictor and dependent variables using primary data were statistically significant whereas only project costs and financial goal orientation correlated significantly against finance mobilization when secondary data were analyzed. Whereas when using primary data, three mega project characteristics had statistically significant effect on financial mobilization only the effect of project costs and financial goal orientation on finance mobilization was statistically significant when secondary data were analyzed. The moderation effect on annual budgeted project costs on finance mobilization was found not to be statistically significant. It was concluded that project costs and stakeholder analysis were very critical with regard to mobilization of finances for mega projects irrespective of primary and secondary data respectively. According to the views of project managers, it was inferred that financial risks involving mega projects were the least important in financial mobilization. However, the factual data collected from audited financial reports led to the conclusion that though financial goal orientation had the highest factor value in reference to finance mobilization, it was the least crucial mega project characteristic. Moreover, it was deduced that annual budgeted project costs did not have statistically significant effect on the relationship between mega project characteristics and finance mobilization. The study recommends that there ought to be increased emphasis on financial risks especially parameterized by interest rate, project costs as expressed by average initial cost and stakeholder analysis operationalized by profits generated annually. The foregoing is bound to result in improved mobilization of

infrastructural finances required to initiate and implement mega projects in the energy sector in Kenya.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Through scholarly reviews, mega projects have been shown to exhibit extreme complexity, substantial risks, long duration and extensive impact on the community, economy, technological development, and environment of the region or even the whole country (Zhai, Xin & Cheng, 2009). On the other hand, taking a sociological perspective, Gellert and Lynch (2003) consider mega projects as ‘displacements’ by stating that mega projects are projects which transform landscapes rapidly, intentionally, and profoundly in very visible ways, and require coordinated applications of capital and state power. Indeed, looking at society through its mega projects would reveal its ambitions, problems, as well as its future outlooks.

Projects are used in all economic and non-economic fields as means of organizing the activity, aiming at the achievement of desired objectives. Infrastructure refers to economic services from utilities such as electricity, gas, telecommunications, water and transport works such as roads, bridges urban transit systems, seaports and airports which are central in promoting economic activities in the country. Good infrastructure helps in providing economic services efficiently, promoting economic. Infrastructural projects are continuously under development everywhere in the world; however, since the 1990s, much of this development has been approached in a new way. Infrastructure projects are no longer solely government-procured. The new approach calls for more and more private involvement in the development of infrastructure projects (UNDP, 2012).

Based on OECD (2015), project finance is distinct from corporate finance in that it represents the financing of a standalone, clearly demarcated economic unit (Weber & Alfen, 2010). Lending arrangements are based solely on the cash flow generation of the project. Risk sharing structures amongst the various project partners (financiers, managers, public sector) are allocated based on their varying abilities to manage and

control risks. Liability is limited to the contributed equity capital, and lenders often have limited recourse to project sponsors.

According to the United Nations Conference on Trade and Development (UNCTD, 2017) strengthening domestic public resource mobilization is crucial for the Governments in financing national sustainable development strategies and implementing Agenda 2030 for Sustainable Development and the Addis Ababa Action Agenda. The particular role of fiscal revenues in public resource mobilization lies in their greater stability and predictability compared to other sources of long-term finance. As noted in the Addis Ababa Action Agenda, economic growth is the main determinant of fiscal revenue. An enabling macroeconomic policy stance, including appropriate countercyclical fiscal policies, plays an important growth-enhancing role at the national level.

Further Tyson (2018) noted that although private investment in infrastructure in developing countries has grown significantly over the past 10 years, major challenges remain. The first is that private investment has been concentrated in commercially attractive sectors and countries, so has not always matched development needs. Low-income countries (LICs), for example, which have the greatest need of infrastructure development, have received less than 2% of total private investment financing in the last decade. While on a par with relative gross domestic product (GDP), this is low. In addition, sectors vital to development, such as urban infrastructure, have seen insufficient funding. Furthermore, global private-finance flows to developing countries have declined since the ‘taper tantrums’ of 2014 and because of regulatory changes under Basel III and Solvency II. Secondly, private finance has not been galvanised on anything like the scale needed, despite there being a large pool of potential investors eager to put money into the sector. There is reasonable consensus on the main barriers to investment including a lack of bankable projects, difficulty in managing political and macroeconomic risks and a mismatch between the instruments being offered and the needs of institutional investors.

1.1.1 Global Perspective of Characteristics of Mega Government Projects and Finance Mobilization

There has been increasing need for investment in infrastructure globally. Although the private sector has played a critical role in addressing this issue, the public sector through government-funded projects has been on the forefront mainly due to the massive funds that are at its disposal and the natural requirement to solve challenges facing the citizenry. The government has embarked on infrastructural projects across various sectors. Due to increase in population, the need for energy has tremendously risen. In tandem, the governments have been obliged to come up with the projects to bridge the gap between supply and demand for the said energy (IMF, 2010).

The World Economic Forum (WEF) estimates that meeting global infrastructural needs will require investment of US\$3.7 trillion annually. A case in point, is the more than 1.3 billion people worldwide who lack access to electricity due to underdeveloped electrical grids and lack of energy generation capacity. One billion people live more than two kilometres from an all weather road, making it difficult or impossible for many to reach a doctor, school or market. Some 4.2 billion people do not have regular access to the internet leaving more than half of the world population without use of a powerful tool that not only enables education but also facilitates economic activities. Lack of functioning infrastructure is an impediment to long-term stable economic growth and a barrier to international investment (Runde, Savoy & Rice, 2016).

Infrastructural projects often have higher levels of leverage than non-infrastructure investments, given less volatile cash flows and the willingness of sponsors of infrastructure projects to accept higher levels of debt (Beeferman & Wain, 2012). Debt instruments have historically comprised 70-90% of the total capitalisation of infrastructure projects. Infrastructure's projects are capital intensive in nature, generally low-to-manageable operating risk, and the long-term importance of infrastructure services can help to support higher levels of leverage than similarly rated non-financial corporation's (Moody's, 2015). In UK, Sawant (2010)

exemplifies that Second Severn and Skye Bridge crossings were 100% financed through debt.

Financing through debt comes with its own shares of risks. Europe's ongoing public debt crisis similarly demonstrates how financing policy can impact on society, as evidenced by the economic tumult and political backlash that Greece is currently experiencing (Economist, 2015). In contrast with Australia, Europe experienced alarmingly high public debt levels, some in excess of a nation's annual GDP. Such excessive public debt has a multitude of potential detrimental impacts.

In the European Union, the Risk in Front End (RFE) working report enumerated the risks that were experienced in the front-end of the mega projects undertaken in the region (Alfalla-Lique, Dunovic, Gebbia, Irimia-Dieguez, Mikic, Pedro, Cazorla, Silav & Spang, 2015). It reported that major projects in the region were prone to large delays in completion and cost overruns. It was estimated that more than half of the projects reviewed had exceeded their cost estimates by about 21%. It further reported that cost overruns were more a problem in countries such as Poland than it was in Germany. It also observed that the European Union evaluates these mega projects using cost-benefit analysis to test for sensitivity and risk before deciding whether to engage in co-financing of these projects.

The Canadian economy has been characterised by an unconventional energy boom (International Monetary Fund, 2014). The IMF report further claimed that this had increased the overall share of investments channelled towards energy projects. Muskrat Falls Hydroelectric Generating Project is one of the largest projects that had been undertaken in the country in the recent past. According to a report by Ernst & Young (2016), the project involved procurement, design, manufacture and construction undertaken in multiple sites in Newfoundland and Labrador. The project included the construction of transmission assets, transmission links and the Muskrat Falls generation facility. The delivery of the project involved multiple separate contracts and was spearheaded by an integrated team of about 400 individuals. According to this report, cost re-evaluations undertaken on the projects have resulted in increments in projected costs driven by market pressures, design enhancements,

reliability improvements, project management execution, and contractor performance. The last project re-evaluations that were undertaken in 2015 estimated that the project would cost 7.65 billion Canadian dollars.

According to an IMF technical assistance report conducted in Brazil, government projects in the country have been characterised by poor strategic prioritization of investments and appraisal and selection processes (Curristine, Gonguet, Betley, Crooke, Tandberg, Miranda, Rabello & Vinuela, 2017). The country suffers from inadequate high-level guidance on coordination and prioritisation within government levels. Furthermore, the lack of central guidelines affects the appraisal and selection of projects. Additionally, there is a lack of capacity among some spending ministries and sub-national levels and uncertain funding. These factors were reported to lead to poor project management, which resulted in delays, cost overruns, weak project execution and poor-quality infrastructure.

1.1.2 Characteristics of Mega Government Projects and Finance Mobilization in Africa

In Africa, most countries are still struggling to improve their infrastructure. The World Bank's Africa Infrastructure Diagnostic Study estimated that inefficiencies in State-owned utilities and infrastructure providers in Sub-Saharan Africa cost around US\$6 billion a year (World Bank, 2011). This is because often construction projects managed by government run well over budget and behind schedule and any changes to the project cost are often at the expense of the Government. More so service delivery by Government entities is often poor due to limited capacity and weak management incentives. In Nigeria for example infrastructure deficit has trailed country's development and economic growth for quite a while now and the country needs more than US\$ 19 trillion to provide the much required infrastructure.

According to Moody (2015), while the world's attention has been singularly directed at external financing, the primary source of funding for infrastructure, as elsewhere in the world, continues to be public sector budgets, which receive relatively little attention in discussions and reporting on sub-Saharan Africa's infrastructure. In the absence of detailed data of public sector funding of infrastructure, the efforts to

estimate its levels and distribution by the Infrastructure Consortium for Africa (ICA), IMF and others are limited to or built upon rather strong assumptions. Public sector budgets are critical as they establish the strategic framework within which support through external financing ought to be coordinated. Based on IMF estimates, countries in sub-Saharan Africa finance about 65 percent of their infrastructure expenditures. This translates to almost \$60 billion (about 4 percent of sub-Saharan Africa's GDP)—from their public sector budgets (this amount excludes financing from multilateral institutions). In absolute terms, South Africa dominates these expenditures with about \$29 billion (in 2012), with Kenya, the next country, only allocating about \$3 billion.

According to Maurer (2017), China has emerged as the largest single funder of infrastructure investments in Africa. The average annual flow between 2007 through 2012 is estimated at about infrastructure \$5 billion, well beyond any other single bilateral or multilateral source. Most of Chinese financing is provided through China EXIM Bank. In recent years, Ghana and Ethiopia have been the largest recipients of Chinese infrastructure financing while other notable recipients are Cameroon, Zambia, and Nigeria. China is especially targeting the transport sector, particularly railways and roads. These are sub-sectors in which Chinese firms have particular experience and successfully compete for contracts under multilateral financing. They are also sub-sectors that have received less interest from private investment in sub-Saharan Africa. More recently, Chinese financing has increasingly targeted the energy sector and hydropower in particular (Gutman et al., 2015). In Ethiopia, China has been the main financier of the energy sector, committing \$2.2 billion between 2007 and 2013, and the railway sector, where the China Exim Bank pledged loans totalling \$4.1 billion over the same time period. China has been major financier in the road sector; its engagement is largely quasi-commercial, based on loans from the China Exim Bank.

A World Bank report on the financing role that China plays in infrastructure development in Sub-Saharan indicated that China funds large projects such as railways and hydropower generation (Foster, Butterfield, Chen, & Pushak, 2009). It claimed that 35 African governments had engaged the Chinese in infrastructural

development with Sudan, Ethiopia, Nigeria and Angola being the largest beneficiaries. A more recent World Bank report found that China's investment in Sub-Saharan Africa's power generation plants for the period between 1990 and 2013 accounted for 15% of total investment and had added 16.45% of the power generated in this period (Eberhard, Gratwick, Morella, & Antmann, 2016). It also observed that IPPs contribute significantly as they are responsible for 22.17% of the total investments made in this period.

In Mozambique, an IMF report focused on the role of mega projects in the creation of jobs and economic growth considering the high that government investments in mega projects such as Cahora Bassa (Xiong, 2014). It reported that the projects did not provide significant benefits to the local Mozambicans as they employed a few people as they were capital intensive. Furthermore, most of the electricity produced at Cahora Bassa was exported to South Africa or used by the Mozal factory, which is mainly owned by foreigners and extracts products that also exported. It was further observed that any economic benefits accrued from the project were realised at the national level in the form of economic growth, but not at the local level.

In Tanzania, the government undertook the Energy Development and Access Expansion Project that aimed at increasing the efficiency and quality of electricity provision in Dar es Salaam, Kilimanjaro and Arusha (World Bank, 2018). The World Bank report on the project claimed that budget overruns were experienced in the process of implementing the project after it had made use of contingencies and unallocated amounts. The additional amounts were associated with the acquisition of additional competencies such as procurement capacities. It further noted that the project team was forced to abandon some activities to avoid additional cost overruns, which reduced the performance of the project.

1.1.3 Characteristics of Mega Government Projects and Finance Mobilization in Kenya

Based on World Bank's (2018) report, the Government of Kenya has successfully separated policy and regulatory functions from commercial activities, unbundled generation from transmission and distribution activities, introduced cost-reflective

tariffs, and attracted private capital through the liberalization of generation activities while retaining majority ownership of the largest power utilities in the country, the Kenya Power (KP) and Kenya Energy Generating Company (KenGen). The sector is regulated by a single sector regulator, the Energy Regulatory Commission (ERC), with a mandate for technical and economic regulation of petroleum, electricity, and renewable energy, and an Energy Tribunal is in charge of solving sector disputes.

According to Power Africa (2018), Kenya has one of the most developed energy sectors in sub-Saharan Africa, having opened its market to Independent Power Producers (IPPs) in the mid-1990s. Kenya benefits from factors including: an active private sector; Kenya Power's long track record as a creditworthy off-taker; and abundant renewable energy resources, especially geothermal, wind and solar. Limited and aging transmission and distribution infrastructure, financing, opaque procurement processes, right of way disputes, and other challenges affect sector growth.

Power Africa activities in Kenya are guided by a cooperation framework. The current Power Africa-Government of Kenya Cooperation Framework was signed in June 2018, to cover the 2018-2023 implementation periods. One of the notable drawbacks in the energy sector as noted by power Africa is Inadequate access to project financing, especially early stage risk capital. Under the Power Africa/KenGen Cooperation Framework, Power Africa helped KenGen pursue new financing structures, including SPV-level financing of non-recourse project finance (Power Africa, 2018).

Realizing huge investment needs in the sector and inability to meet all the financing needs through public sector funding, the GoK, with World Bank support, has been pioneering the approach to increased commercial financing participation, which is today referred to as Maximizing Finance for Development (MFD). Starting with the World Bank supported Energy Sector Reform and Power Development Project (P001344), approved in 1997, with the aim was to create an enabling environment for private investments, followed by Kenya Private Sector Power Generation Support Project (P122671) approved in 2012, where an US\$166 million⁵ of IDA Guarantee

was able to help mobilize US\$623 million of total investments, out of which US\$357 million was from private investments and commercial lenders; and more recently, Kenya Electricity Modernization Project (KEMP) (P120014) approved in 2015, which was able to help attract US\$500 million of long-term commercial debt financing (through an IDA Guarantee support of US\$200 million) used to restructure the KPLC's existing debt, thus generating significant savings. In Kenya's energy sector, China is the largest bilateral donor and the second largest donor after the World Bank's International Development Association (IDA). China's total contribution to energy projects was more than doubled between 2010/11 and 2014/15, from \$74 million to \$157 million (National Treasury, 2016).

According to the Africa Infrastructure Country Diagnostic Report 2010 produced by the World Bank in collaboration with the African Development Bank and other development agencies, Kenya spends about US\$1.6 billion a year on infrastructure. This is in spite of the fact that the country requires a sustained expenditure of US\$4 billion a year, or about 20 percent of its Gross Domestic Product (GDP), over the next decade (World Bank, 2011). Ryan (2012) explains that investments in the infrastructure systems in Kenya feature a public-private partnership, and it is this combination of public and private investments that maintains and improves the country's core infrastructure. Although railroads, electric utilities, airports and gas companies represent the private side of infrastructure provision, it is often with the aid of the public sector. Moreover, most assets in core infrastructure are public and the government plays a pivotal role in supplying the infrastructure needs of the nation.

In Kenya, the Kenya National Commission on Human Rights engaged stakeholders in a consultative meeting to identify the stakeholders' concerns with the oil exploration and drilling exercise in Turkana County (KNCHR, 2017). The report claimed that there was an inadequate engagement of the stakeholders, especially the local communities. It was alleged that the project was characterised by inadequate compensation with the public concerned that the liaison officers did not relay their actual concerns. The eviction from the land required for exploration was purported to

be arbitrarily conducted by the county government. It further reported that the locals were not involved in the land committee.

The Lake Turkana Wind Power project was quite innovative in the financing structures used to manage liquidity risks. The project cost about USD 680 million, which was acquired through the participation of numerous entities (AfDB, 2015). The private sector was tasked with delivering the 428-kilometre transmission line. Meanwhile, the African Development fund provided a partial loan to the project of USD 150 million (equivalent to Kshs15 billion) while the European Investment Bank provided leveraged a loan of €200 million (equivalent to Kshs22.96 billion). The Kenyan government also applied for financial assistance from the EU-Africa Infrastructure Trust Fund to bridge the equity gap. According to AfDB (2015), the financing model applied in this project represented out of the box thinking that helped the Kenyan government acquire adequate financing for the project.

A survey conducted by Deloitte reported that approximately 48% of the projects had experienced cost overruns it attributed to inadequate consideration of the factors that could derail the projects (Deloitte, 2017). The resulting delays led not only in time overruns, but also cost overruns. According to World Bank (2016), the cost overruns in the implementation of mega projects in Kenya are attributed to compensation disputes that hinder the acquisition of the land required for the construction of the projects. It also identified the use of courts to resolve grievances as a factor that was resulting in delays that resulted in cost overruns. The report proposed an overhaul of the land legislation and administration policy to expedite the acquisition of land for mega projects.

In respect of the present study, the targeted mega projects are those ones whose capital amounts to more than Ksh 1 billion. These projects are carried out by various departments and/or state corporations under the Ministry of Energy in Kenya. Their choice is premised on the fact that, the energy sector being one of core sectors in industrial development is allocated huge financial resources every fiscal year. In the FY 2020/21, out of the Ksh 2,790.4 billion total government budget, the energy, infrastructure and ICT sector received the lion share of the allocation at Ksh 363.3

billion (Republic of Kenya, 2020). Consequently, therefore, majority of the infrastructural projects under this sector are strategic and capital-intensive. This implies that they fit the bill of mega projects unlike in other sectors with many yet relatively small projects.

1.1.4 Sources of Finance for Mega Government Projects

Mega projects are usually large-scale, complex ventures that cost billions of money, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people (Flyvbjerg, 2014). These projects are generally “greenfield” in nature as they often create new assets and utilize a variety of delivery models depending on their inherent complexity.

Project finance refers to the financing of long-term infrastructural projects and public services on the basis of a non-recourse or limited recourse financial structure. The project debt and equity used to finance the project are paid back from the cash flow generated by the project. It involves non-recourse financing of the development and construction of a particular project in which lenders look to the revenue expected. The revenue generated from the project is used to repay its loans; and the assets of the project rather than the general credit of the project sponsor are used as collateral for its loans (Humphreys, van der Kerk & Fonseca, 2018).

Project financing encompasses the legal work required for the development, the equity and non-recourse debt financing as well as the construction, operation and maintenance of major industrial infrastructural projects. These infrastructural projects include sewerage treatment plants, power plants, water plants, hydrocarbon processing and chemical plants, pipelines, transmission lines, toll roads, airports and other social developments needed in a country (Osei-Kyei, Chan, Dansoh, Ofori-Kuragu & Owusu 2017; Yescombe, 2017; Lambrecht & Ragasa, 2018).

The use of debt instruments such as bonds, loans and debentures serves as a source of funds for developmental projects (Lasa, Takim, & Ahmad, 2018). Equity instruments such as shares and venture capital investors serve as sources of funding for infrastructural and developmental projects (Boardman, Greenberg, Vining, &

Weimer, 2017). Other specialized sources for funding projects are grants and crowd funding (Hope & Vyas, 2017). The economic criteria for appraisal comprise financial metrics decision making, the criteria for investment appraisal, such as the Net Present Value (NPV), the Internal Rate of Return (IRR), the Return on Investment (ROI), and the Payback Period (PP), (Pasqual et al., 2013). These financial metrics are tools used in appraising the economic viability of projects (Nicholas, & Steyn, 2017).

The drive to attract private financing might preserve a government's credit rating and promote faster project delivery, but may come at a staggering cost of capital differential (Organization for Economic Co-operation and Development - OECD, 2015). Private investors require commercial returns. This means that government foregoes some or all of a project's potential long run profits (Hann & Mack, 2005). If governments were to use public debt instead, this could arguably lead to a credit rating downgrade, but only if it is seen as excessive debt. The cost of every one-level credit rating downgrade, however, is estimated to be no more than 0.5 percent (IFWG, 2012).

This may be far outweighed by the high costs of using private sector financing. The use of private financing in response to the debt ceiling can also have societal ramifications such as rent-seeking behaviour and moral hazard (Adler et al., 2010; Williams, 2010; Liu & Webb, 2011; Pottinger, 2013). Even if explicit government guarantees are not offered, failing private entities are often assisted by government in view of the strategic role that public infrastructure projects often play in an economy (Lucas, 2014). These intangible issues need to be incorporated into a well-considered and clear appraisal of the different financing instruments.

The Government of Kenya has been facing herculean challenges in financing mega projects. The inadequacy of funds collected locally has obliged the national government to source the same through various loans (commercial and concessional loans). The foregoing is underlined by the huge project loans amounting to Ksh 250.5 billion and which constitute a significant amount of the total deficit of Ksh 840.6 billion as espoused in FY 2020/21 national budget (Republic of Kenya, 2020).

The aforesaid underlines lack of self-reliance of Kenya in funding mega projects, most of which fall under the purview of the energy sector. Therefore, it is imperative to investigate the contribution of mega projects' characteristics towards mobilization of finances.

1.2 Statement of the Problem

Mega projects are associated with huge financing often exceeding the Kshs One Billion mark and are ordinarily undertaken by government agencies such as parastatals and listed firms. For their implementation to be a success as projected by the pertinent stakeholders, these projects should essentially mobilize adequate finances. Ideally, monies over and above the minimum capital should be mobilized for the project implementation to be seamless. Given their enormity, the successful implementation, or lack thereof, of these projects is widely felt at macro level. This implies that the economy should improve when such mega projects have requisite funding and are consequently implemented successfully.

However, this has not been the case in Kenya. In years 2013, 2014 and 2015 the growth in GDP was less than the projected target of 10%. Over the three years period, the GDP was recorded at 5.7 %, 5.3 % and 5.6 % respectively (Republic of Kenya, 2017). The issue of infrastructural finance has been a major concern prompting the government to look for various ways to finance them. The importance of the mega infrastructural projects is underlined by the government's unprecedented borrowing which has resulted to total debt exceeding Ksh 5 trillion as at year 2019. This means that over the past few years (since 2013 when the government's borrowing started ballooning), Kenyans should have already started enjoying huge benefits accruing from these mega projects. However, this has not been the case. Several such projects have delayed, others have stalled, while several others are dogged by scandals ranging from embezzlement of funds by the persons entrusted in their implementation to stakeholders exhibiting divergent interests in the projects. This has consequently hampered progress in the implementation of mega projects. In response to the identified challenges facing mega projects especially in the energy

sector, there is need for sustained funding to ensure that there is infrastructural development in the sector.

Various studies have interrogated the issues of infrastructural projects' implementation. Onyango, Bwisa and Orwa (2017) assessed critical factors influencing implementation of public infrastructure projects in Kiambu County. The study examined whether government policies, funding process, and participatory planning process influence implementation of public infrastructure projects in Kenya. Agnes and Gakuo (2018) examined institutional factors influencing implementation of infrastructural projects by the county governments in Kenya. The study examined the influence of stakeholders, management, resources and governance on implementation of infrastructural projects. Although both studies centred on infrastructural projects which are often considered to be mega in scope, they were inclined towards project implementation as opposed to finance mobilization as is the case in the present study. Similarly, a study by Irina and Harriet (2017) examined the influencers of performance of road infrastructural projects. This was not only narrow in scope (delimited to Manyatta Constituency) like the previous two studies which were conducted in County jurisdiction, but it also fell short of evaluating finance mobilization. It is also apparent as reflected in the hitherto reviewed local empirical studies, that there is scarcity of empirical evidence on finance mobilization particularly as influenced by characteristics of mega projects. This is despite global and regional studies having tackled the aspect of mega project characteristics (Locatelli, Littau, Brookes, & Mancini, 2014; Irimia-Dieiguez, Gonzalez-Villegas, & Oliver-Alfonzo, 2014; Maddaloni, 2015), and success factors of those projects (Asnakew, 2016; Sarangi, 2018; Awais, 2018). It is against this backdrop that the present study was conducted with the main objective of looking into characteristics of mega projects and how they influence finance mobilization especially in the Kenya's energy sector.

1.3 Objectives of the Study

The study was guided by both the general and specific objectives.

1.3.1 General Objective

The general objective was to evaluate the characteristics of mega projects and their influence on finance mobilization in parastatals in Kenya's energy sector.

1.3.2 Specific Objectives

1. To assess the influence of financial risks on finance mobilization for mega projects in Kenya's energy sector
2. To examine the influence of project costs on finance mobilization for mega projects in Kenya's energy sector
3. To establish the influence of financial goal orientation on finance mobilization for mega projects in Kenya's energy sector
4. To determine the influence of stakeholder analysis on finance mobilization for mega projects in Kenya's energy sector
5. To assess the moderating effect of annual budgeted project costs on the relationship between mega project characteristics and finance mobilization for mega projects in Kenya's energy sector

1.4 Hypotheses of the Study

H₀₁: Financial risks have no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H₀₂: Project costs have no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H₀₃: Financial goal orientation has no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H₀₄: Stakeholder analysis has no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H05: Annual budgeted project costs do not have significant moderating effect on the relationship between mega project characteristics and finance mobilization for mega projects in Kenya's energy sector.

1.5 Significance of the Study

The economic growth of a country is greatly impacted by its energy provision capacity. Therefore, investment in the energy sector is a priority to any developing nation. Thus this study had sought to examine the determinants influencing the mobilization of finances to fund the development of energy mega projects in Kenya. The study, therefore, is anticipated to be important to the various stakeholders in this sector. To begin with, the study will provide crucial information regarding the financing of infrastructural projects in Kenya. This information will help the policy makers in coming up with better policies to guide the mobilization of infrastructure finance. The coming up with better policies will aid in prioritizing the various financing options. Secondly, the study will help provide feedback to the boards of management in the energy sector on the various financing models they have utilized. This will help them determine the best financing option that is more beneficial in energy sector infrastructural projects.

Furthermore, the study will be significant in helping the management and employees in the energy sector in enhancing the sustainability of the energy sector projects in Kenya. This will be driven by obtaining information regarding public participation, profitability of projects and project demand. Finally the study will provide additional knowledge that will contribute to the existing literature regarding infrastructural finance mobilization. This will be important to future scholars as a point of reference in their studies in this area.

1.6 Scope of the Study

The study was conducted among mega projects in the public energy sector whose capitalization was at least Kshs 1 billion. There were six parastatals which were included in the study. These included Kenya Energy Generating Company (KenGen), Geothermal Development Company (GDC), Kenya Power and Lighting

Company (KPLC), Rural Electrification Authority (REA), Kenya Nuclear Board, and Kenya Electricity Transmission Company (KENTRACO). The finance and management staffs working with these projects were the key respondents. The study was delimited to a set of variables which included financial risks, project costs, financial goal orientation, stakeholder analysis, annual budgeted project costs and finance mobilization. The study was carried out over a period of approximately 12 months.

1.7 Limitations of the Study

Several challenges were encountered particularly during data collection. Accessing the management staff of the six parastatals in the energy sector which were under survey was quite problematic. This was attributed mainly to their busy schedules. Prior arrangements were made to meet with these staff and in few instances their proxies were involved in the study. This ensured that data was ultimately obtained from each of the six parastatals being surveyed. Some parastatals did not have all the requisite data in respect of the various elements that constituted mega project characteristics and financial mobilization. This made analysis of the collected secondary data rather difficult. In mitigation elements which had adequate panel data for the six organizations for the seven years (2013 to 2019) were considered. In addition, the inferential analysis employed key indicators of the selected elements representative of each of the study constructs, with exception of moderator variable. The variables which were financial risks, project costs, financial goal orientation, stakeholder analysis and financial mobilization were represented by interest rate, average initial capital, average payback period, profits generated annual and a sum of commercial and concessional loans respectively.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presents a review of literature relevant to the variables under study. The chapter contains a review of theories that this study will be anchored on. A conceptual framework illustrating the study variables and how they are perceived to interact is presented. This is followed by review of variables (financial risks, project costs, financial goal orientation, stakeholder analysis, annual budgeted project costs and finance mobilization). A review of past empirical studies on the foregoing variables is also covered. A critique of pertinent local empirical studies is outlined followed by presentation of identified research gaps. The last part covers the chapter summary.

2.2 Theoretical Review

In this section, theories pertinent to characteristics of mega government projects, and finance mobilization. The reviewed theories include financial risk theory, agency cost theory, goal setting theory, stakeholder theory, resource dependency theory, and resource mobilization theory. The theories are chosen on the premise that they adequately explain the various characteristics of mega projects as well as finance mobilization. The financial risk theory and agency cost theory have been linked to financial risks and costs of mega projects respectively. The former theory enables an understanding of the severity and frequency of risk occurrence (Bouchaud & Potters, 1999). The cost of the aforesaid projects can be exacerbated by conflict between the project managers' interests and the overall organizational interests as explained by the agency cost theory (Jensen & Meckling, 1976).

The goal setting theory which underlines how organizational goals should be formulated and set (Locke & Latham, 2006), has been employed to enhance the understanding the characteristic of financial goal orientation. Stakeholder theory which states that an organization has different stakeholders with varying interests,

needs and viewpoints (Freeman, 1984), has been reviewed and contextualized relative to stakeholder analysis. The resource dependency theory outlines how various activities including project implementation are contingent to available resources. This is informed by the fact that all organizations are dependent on the environment for survival (Nienhüser , 2008). Therefore, the theory has been used to expound further the annual budgeted project costs as part of mega project characteristics.

In order to have a better understanding of tenets associated with finance mobilization amongst mega projects under the energy sector, the resource mobilization theory is reviewed and pertinently interpreted. The theory argues that people with vested or common interests pool together resources based on rational considerations of the costs and benefits of engaging in collective activities (Kerbo, 1982).

2.2.1 Financial Risk Theory

The financial risk theory is accredited to Bouchaud and Potters (1999). The theory is used to explain and understand financial risk and how its severity and frequency of loss can be controlled. The theory holds that financial markets are characterized by large number of participants with divergent anticipations and conflicting interests. These interests are simultaneously present in financial markets and leads to an unpredictable behaviour. The theory also postulates that financial markets are often affected by external factors which can be time or nature and which are unexpected. The theory further suggests that the change in financial markets is not sudden but happens slowly and on the scale of several years (Estrada, 2011).

The theory does not view financial markets as perfect but rather views them as systems which are prone to financial fluctuation and are imperfect. The theory is also based on the weak stability hypothesis which is in most cases used to describe financial risks. In addition the theory also suggests that what happens in the past can be used to explain or to give an oversight of the future. The theory also lays an emphasis on the need to have sufficient information before embarking on any course of action (Bouchaud & Potters, 2003).

The theory is based on the hypothesis that the evolution in financial markets takes place slowly over a span of several years which may not be the case. In case of crisis which marks sudden change in market behaviour. The theory suffers from lack of sufficient lack of information which forbids a perfect prediction of the future. The theory also uses both quantitative and qualitative analysis which adopts the combination of the fuzzy theory and data analysis (Bouchaud & Potters, 1999).

The theory also used past data and sufficient information to predict the future which in most cases is just an estimation and hence not accurate. The theory lacks an unambiguous basic measure of financial risk and used standard deviation of return and variance of return. Furthermore, in the face of attractive investment opportunities little attention is paid to historical evidence of similar scenarios which led to financial loss (Clarkson, 1989).

The theory is used to predict the behavioral finance traits of overconfidence, over-reaction bias and myopic loss aversion. The theory can be used in mega government projects in the energy sector to predict financial risks which are likely to occur before the project objectives are met. Moreover, the theory can be used to give an oversight of what should be done in order to avoid the predicted financial risks. The government can also assess the external and internal factors which are likely to lead to project failure due to financial problems.

2.2.2 Agency Cost Theory

The agency cost theory was proposed by Jensen and Meckling (1976). The theory analyzes the conflict between managers and shareholders. The managers in the theory act as agents of shareholders (Jensen, 1986). The conflict between the two parties arises because the shareholders require payments/payouts for their investments which reduces the internal resources controlled by managers. The theory holds that managers are compensated on the basis of accounting profits which increases the incentives to manipulate information and favour projects with low net profit value if they provide immediate profits (Dogan & Smyth, 2002). The theory, further, notes that in order to reduce the self-interest behaviour of managers and the agency costs of separating ownership and control it is necessary to design factors,

such as, competition, incentive plans and executive labour market (Jensen & Meckling, 1976).

The theory provides a solution (contracting) to the agent principal relationship. The contract limits the managers' decision making power and auditing of financial accounts. The theory also acknowledges the existence of information asymmetry and moral hazard in hiring the managers (Jensen, 1986). The theory, further, recognizes the ability of the agents to serve their own self-interests rather than the best interests of the firm especially when labour and capital markets are imperfect. Additionally, the theory recognizes the need for an ample working environment which is characterized by proper organizational structure and culture (Jensen & Meckling, 1976).

According to Perrow (1986) the theory has only concentrated on the agent side of the principal and agent problem and it is unconcerned about the principals who deceive and exploit the agents. The theory, further, focuses only on the conflict between the agent and the principal, agency cost and the realignment of the interest of the two parties so as to minimize the agency problem. It, however fails to address agency cost in relation to the agents performance (Eisenhardt, 1989).

In addition, the theory assumes a contractual relationship between the principal and the agent for a limited or unlimited future duration which is not the case due to uncertainties about the future. Moreover, the theory assumes that contracting can eliminate the agency problem which is not the case because the contracting process is affected by information asymmetry, transaction cost and fraud. Furthermore, the theory considers the managers as opportunistic, ignores their competency and does not clearly define the role of shareholders (Daily, Dalton & Rajagopalan, 2003).

In mega government projects, project managers should be given incentives so as to encourage them to act in line with the interests of the government. The government can also ensure that they hire a highly qualified and experienced manager to oversee the project work and ensure that the goals of the project are achieved within the scheduled time and budgeted cost. The government through the ministry of energy should also make sure that they provide the managers and contractors with good

working environment which in turn will motivate the managers and contractors therefore reducing the supervision/monitoring costs significantly.

2.2.3 Goal Setting Theory

The goal setting theory was proposed by Locke (1960). The theory states that goal setting is essentially linked to the task performance and that specific and challenging goals along with appropriate feedback contribute to higher and better task performance. Goals have pervasive influence on employee performance and behaviour in an organization (Latham, 2003). The theory also holds that there are two cognitive determinants of behaviour which include; values and intentions. The theory postulates that challenging goals lead to higher effort, energy mobilization, and increased persistent effort (Locke & Latham, 1990).

The goal setting theory encourages participants to put in substantial effort due the set expectations for their role. Goal setting also assists managers to constantly drive motivation and keep track on an employees work by on a regular basis since goals act as self-regulatory mechanisms which ensures that employees prioritize their work (Locke & Latham, 2002). Goal setting theory also ensures that employee's behaviour is in line with the set personal goals and the overall goals the organization (Locke & Latham, 2006).

Goals setting theory also encourages self efficacy since it encourages individuals to set higher goals. The theory also suggests that people with higher self efficacy set higher goals, are more committed to the assigned goals, find and identify better strategies to achieve the goal and have a good response to negative feedback and criticism. The theory also emphasizes on the importance of setting higher difficult goals rather than simple goals which do not encourage any effort (Locke & Latham, 2002).

The goals of an individual and those of an individual manager can sometimes be in conflict especially in cases where managers are rewarded for the people they lead rather than for the overall performance of the organization. Goal conflict on the other hand undermines performance especially if it motivates incompatible action

tendencies (Locke, Smith, Erez & Schaffer, 1994). According to the theory when specific, difficult goals of a person are aligned with the goals of a group the group's performance is enhanced without such an arrangement, however, the goals have a negative impact on a group's performance (Seijtis & Latham, 2000).

According to Murphy (2001)) goal setting theory does not focus on the subconscious since people can take action and get results without being fully aware of what is motivating them and what is leading them to make such choices. Goal setting theory can also foster unethical behaviour especially when one does not achieve their desired goals. Goal setting theory may also impair performance and inhibit learning since it encourages a simple focus on the outcomes without openness to exploration understanding and growth (Schweitzer & Ordenez, 2004).

The goal setting theory can be used in the energy sector to encourage and motivate employees through setting challenging achievable goal for each individual employee. In mega projects goal setting can play a crucial role since it ensures that the tasks set to be performed at a specified time and cost are accomplished with no delays or cost overruns since the management devices the most effective and efficient strategies to be used to achieve the goal with the available resources. The goal setting theory can also be used by the government to monitor the progress of the projects they initiate within the energy sector.

2.2.4 Stakeholder Theory

The stakeholder theory was developed by Freeman (1984). The theory states that an organization is comprised of a group of stakeholders and the organization is mandated to manage their interests, needs and viewpoints. The theory also describes the corporation as a constellation of cooperative and competitive interests possessing intrinsic value. According to this theory the stakeholder's management is done by the manager who ensures that the firm benefits its stakeholders by ensuring their rights and their participation in decision making. The managers on the other hand ensure that they act as the agent of stockholders by ensuring firm survival and also safeguarding the long term stakes of each stakeholder. Stakeholder theory involves a

general idea of how the organization should be and how it should be conceptualized (Friedman, 2006).

Stakeholders in respect of the theory refers to a group or an individual who is affected by the achievement of the organization's objectives. The theory opines that all persons or groups with legitimate interest participating in an enterprise do so to obtain benefits with no set priorities of one set of interests and benefits overriding the other (Freeman, 1984). The theory further suggests that other entities which may have a stake in an organization include; employees, customers and the surrounding community. The theory promotes practical, efficient, effective and ethical way to manage organizations with unstable stakeholder's relationships (Freeman, 1999).

The theory offers the managers a way to deal with the unprecedented levels of environmental turbulence so as to ensure the prosperity of the organization and its survival. The theory also provides a framework by which managers can be able to manage the varied interests and relationships of all its stakeholders in a strategic manner in order to avoid conflicts. The theory further emphasizes on the community involvement and its benefits from the firm. Moreover, the theory lays an emphasis on the need for a sound organizational structure which plays a key role in the overall organizational success and survival (Fontaine, Haarman, & Schmid, 2006).

The theory does not offer one definite definition of who is a stakeholder. The term stakeholder in the theory is defined broadly to include individuals or groups outside the firm who may consider themselves as stakeholders without the firm considering them to be. The definition also encompasses very many groups making its implementation impossible due to the availability of limited resources and time that managers have at their disposal (Donaldson & Pretson, 1995).

Not all the managers can be involved in decision making hence managers have to select stakeholders with regard to power held and their legitimacy. The foundations of the theory on the other hand are ambiguous and represents an organization based on complete contracts. The theory also assumes that the conflicts of interests between managers and stakeholders can be solved by ensuring that all the shareholders' interests are maximized (Friedman & Miles, 2006).

When implementing mega government projects all the stakeholders should be involved in decision making as well as in project planning in order to ensure that there are no conflicts of interests between the project shareholders and the stakeholders. In the energy sector, the main stakeholders are the citizens of a country who should be consulted in order to ensure that the projects launched by the government are beneficial to them in terms of employment and other social services.

2.2.5 Resource Dependency Theory

The resource dependency theory (RDT) is accredited to Jeffrey Pfeffer and Gerald Salancik in their works contained in a book titled, 'The External Control of Organizations' (Pfeffer & Salancik, 1978). The theory states that dependence on critical and crucial resources influences the actions of organizations and that, decisions made by organizations and the actions thereof can be explained subject to the specific dependency situation. This is founded on the fact that all organizations are dependent on the environment for survival (Nienhüser , 2008).

According to RDT, the dependency of an organization on the environment is the one that makes the external constraint and of organizational behaviour not only possible but also almost inevitable. In this regard, it is stated that organizations have the option of trying to change their environments through either formation of inter-organizational relationships or through political means to control and absorb uncertainty (Pfeffer & Salancik, 1978). The graphical presentation of the theory is presented in Figure 2.1.

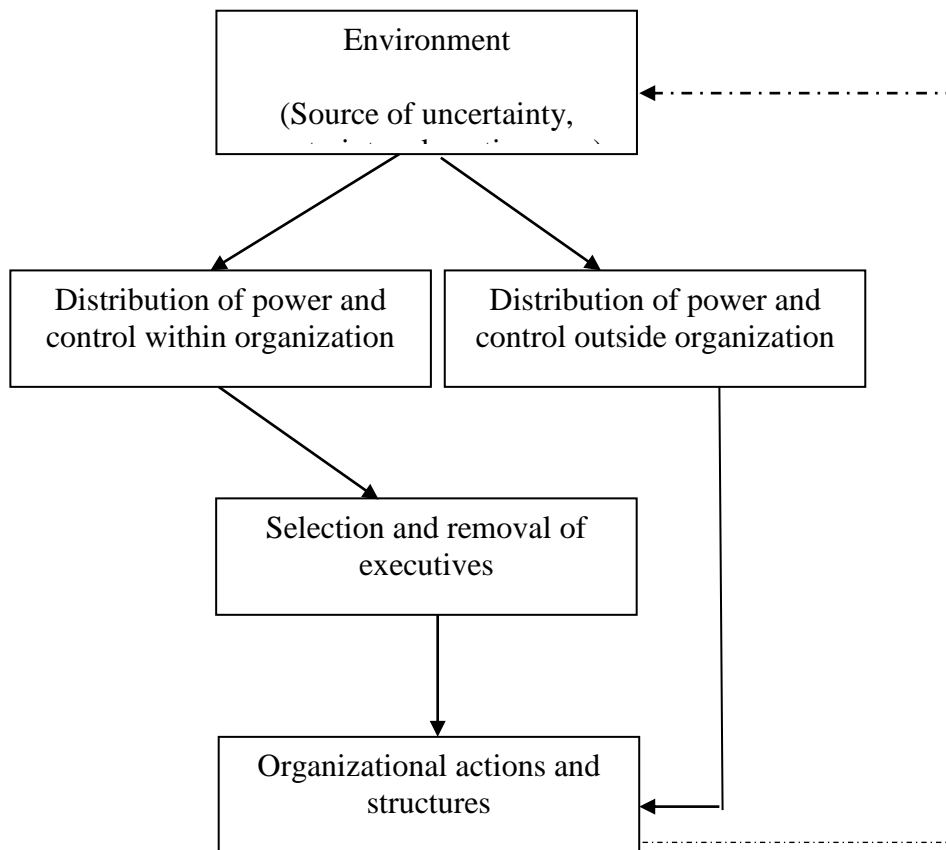


Figure 2.1: Connection between environment, organization and organizational decisions or actions (Pfeffer & Salancik, 2003)

In order to understand an organization's behaviour, it is imperative to understand the context of that behaviour, that is, the ecology or environment of the organization (Pfeffer & Salancik, 2003). The RDT states that the environment provides to the organization the critical resources it needs.

The resource-dependency theory holds that the environment provides critical resources which are required by an organization. In order to have a better understanding of organizational behaviour, it is imperative to know which resources are critical. The criticality reference is founded on the ability of an organization to continue functioning even in the absence of the aforesaid resources (Pfeffer & Salancik, 2003).

It is important to note that, RDT does not postulate that the environment and dependency on critical resources influence organizational behaviour directly behind the backs of the participating actors or stakeholders. Instead, the theory it makes assumptions with regard to actors and how they relate to the organizational environment (Nienhüser , 2008). Arguably, the environment is the epicentre of uncertainty, that is, it is the source of uncertainty. On the same breadth, it is held that the extent of uncertainty is contingent to the distribution of critical resources in the environment.

The relativity of dependency stems from two categories of actors, that is, the actors who control resources and those who need the said resources (Nienhüser , 2008). Typically, if an organization is endowed with vast resources, there is reduction of dependency on and conflicts with other actors. On the other hand, the fewer the number of resources, the higher the concentration of power in the environment, and the greater the complexity amongst actors, the sooner interdependencies and conflicts arise and also the higher the level of uncertainty. The organization is obliged to take measures to reduce uncertainty only when there is uncertainty and dependence on critical resources (Nienhüser , 2008).

The annual budgeted project costs are aligned to the resources available to an organizations. This is tantamount to an ideal budget which puts into consideration the expected costs and the sources of resources to address those costs. State corporations are required to submit their budgets to the Controller of Budgets for approval. Part of the content of the respective budgets is an outline of project costs. In this scenario, the Controller of Budget, the National Treasury and the State Corporations are actors as elucidated by the RDT. The former two institutions are actors who control resources (approves resource allocation and disbursement respectively) while the aforesaid corporations are the actors who are in need of the said resources. Therefore, for the project costs to be addressed effectively, there should be minimal conflicts in the relationship between the Controller of Budget, the National Treasury and the State Corporations.

2.2.6 Resource Mobilization Theory

This theory was first proposed by John D. McCarthy and Mayer Zald in 1977. The theory states that the actions of the social movements are rational and adaptive to the rewards and social costs of their responses (McCarthy & Zald, 1977). It also argued that grievances are always present in formations and mobilization movements and are dependent on changes in group organization, resources, and the available opportunities for collective action. It further argued that the basic goals of the movements are built into institutionalized power relations despite the movements being defined by conflicts of interest. Moreover, the success or failure of these movements is dependent on the political processes and strategic factors that they are involved in. According to Spier (2017), resource mobilization refers to the process through which individuals pool together resources including financial resources, skills and capabilities to undertake a given task.

The resource mobilization theory has played a critical role in the explanation of social movements in different periods beginning from the 1960s movements (Kerbo, 1982). The author observed that the theory helps in the evaluation of both crisis movements and affluence movements. The theory also argues that people pool together based on rational considerations of the costs and benefits of engaging in collective activities. It thus can be used to justify their participation in collective activities such as protests against the government or private institutions despite the personal costs. Kerbo (1982) argued that the affluent, unlike the poor, do not face high levels of discrimination or disadvantages that provoke the poor to act. However, McCarthy and Zald (1977) argued that social entrepreneurs are responsible for provoking the elite to join the social movements and offer their financial resources to strengthen the social movements.

There is no consensus on the theory in regards to how social movements and collective actions should be studied. Although the theory does acknowledge social movements in the pooling of the resources, there are no efforts to discuss why these organizations seek to pool resources together, which may help in understanding what can be perceived as irrational behaviour. According to Gahan and Pekarek (2013),

individuals should be aligned within the same frame if they are to pool together their resources for a common cause. However, the resource mobilization theory does not attempt to evaluate how and why people form social groupings or social vehicles through which they pool the resources.

Critics of resource mobilization theory observe that resource mobilization theories focus on self-interested, rational actors seeking social movements. Consequently, it is expected that individuals that are rational actors will seek to avoid the costs associated with the costs of working together. Therefore, the theory fails to address the grievances though Spier (2017) argued that grievances are ubiquitous. As a result, enough weight is not assigned to these grievances and neither does it consider issues such as culture and identity. Furthermore, the model is not adequate to explain the success that is achieved by groups that have limited resources.

The resource mobilization theory can be used to explain why government institutions pool resources (skills, influence, capacity and capabilities) together for common goals, especially where the projects involved are mega. It further provides a framework that can be used to demonstrate how governments, government agencies, and private entities can mobilize financial resources and accomplish their respective organizational goals. Different government agencies and private entities (such as consultants and contractors) are equipped with different skills, capabilities, and capacities while the mega projects will require a combination of these skill set. Therefore, no individual government entity has adequate skills to undertake these mega projects on their own without the input of other institutions, including private entities.

2.3 Conceptual Framework

A conceptual framework is a model that employs the use of drawings/diagrams to explain the interrelationships between variables (Orodho, 2009). The study conceptualized a framework consisting of independent, dependent, and moderating variables as shown in Figure 2.2. The independent variables included financial risks, project costs, financial goal orientation, and stakeholder analysis. Annual budgeted project costs constituted the moderator variable whereas the dependent variable was

finance mobilization. It was hypothesized that the aforementioned variables which constituted characteristics of mega government projects influenced finance mobilization and at the same time annual budgeted project costs influenced (or moderated) the relationship between the aforesaid characteristics and finance mobilization among parastatals in the energy sector in Kenya.

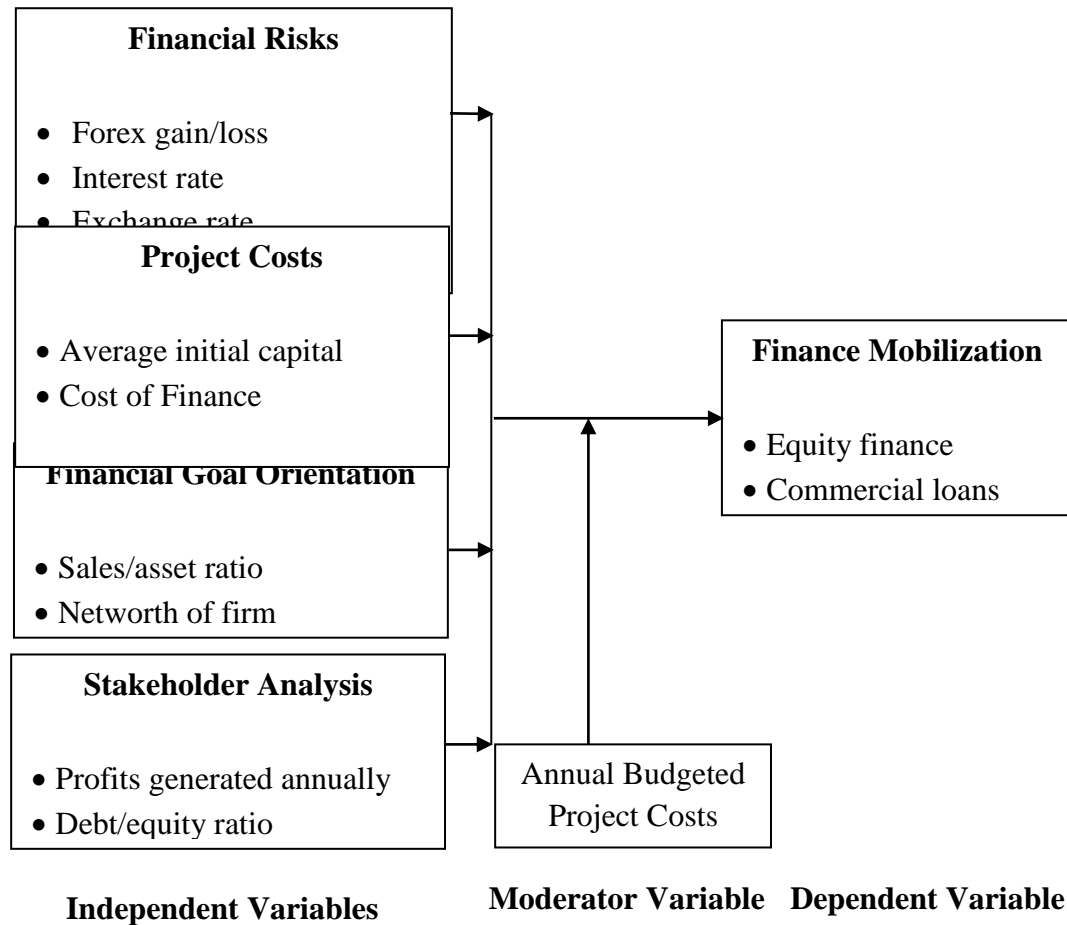


Figure 2.2: Conceptual Framework

2.4 Review of Variables

This section presents a review of literature on study variables, which are financial risks, project costs, financial goal orientation, stakeholder analysis, annual budgeted project costs and finance mobilization.

2.4.1 Financial Risks

Whilst there are varying views about the extent of project budget overspend due to project mismanagement, a conservative estimate widely accepted in the industry is about 10 per cent to 15 per cent, i.e., USD 3.7 trillion to USD 5.6 trillion (Suresh *et al.*, 2014). This suggests that many forthcoming energy capital projects will face significant economical, operational and technical risks (Fulton & Capalino, 2014). To protect investment portfolios and project portfolios from economical risks, technical risks and risks associated with high cost of production, governments, asset owners and contractors must scrutinize project portfolios and company capex budgets more thoroughly than they have in the past. As demonstrated by PwC (2014), the voracious global appetite for energy will continue to grow. Rather being inherently aggressive, the energy sector's transition to greater project efficiency and sustainable business models will be a positive experience for energy clients. Conventional project management techniques will be required to ensure long term value creation.

Infrastructure projects may not generate positive cash flows in the early phases, which may be characterized by high risks and costs due to pre-development and construction; yet they tend to produce stable cash flows once the infrastructure facility moves into the operational phase. Some infrastructure assets, where users do not pay for services, do not generate cash flows at all, requiring government intervention in order to create investment value (OECD, 2015). Mega projects are built on misinformation about costs, schedules, benefits, and risks. These results in cost overruns, delays, and benefit shortfalls that undermine project viability during project delivery and operations (Flyvbjerg, 2014). This problem tends to lead to challenges for implementation as problems need to be fixed while “flying the plane.” Overall, this is a fundamental management problem that often leads to fragile mega projects — mega projects falling apart because of lack of direction and common ground (Merrow, 2011).

According to a report by OECD (2017), governments can influence political and regulatory risks (Hwang *et.al.*, 2013) by creating a more conducive institutional

environment, including making credible commitments to honor the terms of the agreement, and develop clear and reliable estimates on development and construction costs, tariff and demand definition and trends. According to the OECD (2017) report, risk transfer by means of contractual agreements is the most often utilized risk management strategy in project finance. Technical risks are mitigated by specialized operators and should therefore be shifted to the private sector in order to generate an incentive for effective delivery (Engel et al., 2014).

Large scale capital-intensive projects usually require substantial investments up front and only generate revenues to cover their costs in the long term. Therefore, matching the time profile of debt service and project revenue cash flows implies that on average project finance loans have much longer maturities than other syndicated loans. Official sector entities such as multilateral development banks (MDBs) can play a useful catalytic role, helping to share risk with private investors to enhance the viability of investments. MDBs can help their clients attract additional financing from the private sector through a combination of the following: strong financial position; preferred creditor status; technical expertise; prudent risk-management policies; credible application of well-understood standards in project design, execution, and corporate governance; a long-term perspective; and cross-country experience (Chelsky, Morel, & Kabir, 2013).

Risk is inherent in every project. Conventional public sector procurement has tended not to take risk into account adequately, often resulting in unbudgeted cost overruns. In addition the character of infrastructure investments and the nature of PPPs shape the riskiness of any individual project (National Treasury, South Africa, 2004). Financial risks are considered as the risks that have a negative impact on the cash flows of the financial plan in a way that endangers project's viability or limits profitability (Xenidis & Angelides, 2005).

To increase the comfort level of private investors, the World Bank Group (WBG, 2018) offers a range of financial products that reduce the risks associated with lending to client countries, including through guarantees, hedging and de-risking instruments. Risks that can be addressed include political risk as well as more

traditional risks such as credit, foreign exchange and interest rate risks. The aim is to structure investment opportunities with risk return profiles that match investors' return expectation and liability structures.

2.4.2 Project Costs

The World Bank estimated that \$1.1 trillion in annual infrastructure expenditure is needed in developing countries through 2015, of which the greatest needs, as a share of GDP, are in low income countries, estimated at 12.5 percent of GDP (World Bank, 2011). Efforts are underway to increase infrastructure spending in developing countries. However, most finance has been directed towards large-scale projects. Specifically, large transportation infrastructure, energy production and distribution, communications, water and waste management projects receive substantial funding from national governments, development finance institutions and donors.

Given the nature of infrastructure; high initial sunk cost and long service life; most public and private sector expenditures come not from current revenues but from longer-term forms of financing and the bulk of this financing comes from domestic sources (Irving & Manroth, 2009). In developing countries the institutions that can best serve as the channels through which private domestic savings are gathered and then allocated to productive long-term investments of various types are banks, pension funds and other institutional investors. Banks have served as the primary source of financing for infrastructure in developing countries (Sheppard, 2003).

The practice of VGF have been implemented in many countries, such as India (Setiawan & Damayanty, 2012), Korea (OECD, 2013), China (Tsukada, 2005), and other countries. Until 2011, in India there were 123 projects have been giving and will get VGF (Setiawan & Damayanty, 2012). Public spending can come from domestic sources such as income taxes, indirect taxes, customs revenues, state-enterprise profits as well as international sources such as official development assistance (ODA), climate finance, public loans, or other official flows (OOF). As agreed in the Monterrey Consensus and the Busan Partnership for Effective Development Cooperation, each country has primary responsibility for its development and development finance. Concessional international public finance

should only be mobilized in areas where domestic public resources are insufficient, and business is unable to mobilize adequate private finance.

Domestic private-sector banks play a particularly important role, given their ability to assess local project and sovereign risks and to provide lending in local currency (Aaron, et.al. 2016). Both international and domestic banks, however, can struggle to offer the long tenors needed for sustainable-infrastructure projects, whose payback often comes later than in traditional projects. Still, banks have to be part of the answer to increase funding for sustainable projects, and in fact, they have taken a big role in renewable energy.

According to Wettenhall (2007) governments do not have sufficient financial and commercial expertise to match the involved corporate enterprises – in bigger projects, and ensuring that the public sector is treated fairly in contract negotiations needed to get a project under way. Further when risks are taken into account, it often emerges that the public sector bears most of them, and has to bail out the private partner whereas when costs escalate or less-than-expected revenues are earned. Wattenhall also stresses that the big private partners have huge political clout so that processes designed to monitor their performance are compromised. In his view although the facilities are notionally still public, more traditional forms of accountability no longer operate (Wettenhall, 2007).

2.4.3 Financial Goal Orientation

Goal orientation has been defined as the collective state that represents the shared perceptions of team members on the goals that their teams are pursuing (Gong, Kim, & Zhu, 2013). Alexander and Van Knippenberg (2014) argued that goal orientations will define the goals that a team prioritizes and the measures that are adopted to regulate the behaviours of team members in pursuit of these goals. They further observed that goal orientation theory identifies successful performance, learning, and avoidance of failure as the motivating factors. In the case of large organizations such as governments and large private sector firms, Dos (2017) argued that financial goals were the common denominators in these organizations' performances and thus they play an important role in the decision-making process.

Financial goals focus on elements such as wealth creation, generation of a steady income stream, and tax-efficient structures (Wessel, Decker, Lange, & Hack, 2014). However, the financial focus of mega-projects is relatively different. Mega projects are usually assessed based on time, cost, and quality/ performance (Fahri, Biesenthal, Pollack, & Sankaran, 2015). Therefore, financial goal orientation implies that the management team of a megaproject would focus more on the cost considerations over the other elements. Consequently, they would seek to ensure that the project does not experience cost overruns. Fahri et al. (2015) identified operational costs, maintenance costs, training costs, upgrade costs, salaries cost, capital costs, and material costs.

Mega projects are characterised by high costs, usually running into billions, and complex and controversial issues such as over and under costing (Oliomogbe & Smith, 2012). Therefore, risk management is an important element thus the management team will focus on ensuring that the discrepancy between the cost estimates and the actual costs are within the acceptable range (Badman & Sjoberg, 2016). Badman and Sjoberg (2016) reiterated the importance of cost management in megaproject observing that these projects are complex and mostly require interrelated projects are undertaken parallel to each other or sequentially. In this context, financial goal orientation would call on the management teams to ensure that successfully estimating the project costs, avoiding budget overruns on every budget line including the operational costs, maintenance costs, upgrade costs, salaries and upgrade costs. Furthermore, the projects have social, economic and political impacts on the communities where they are undertaken (Badman & Sjoberg, 2016). According to Turner and Zolin (2012), the success of a project is not only measured on completion of the scope of work within the quality, cost and time specified, but it is also assessed through the outcomes, outputs and impacts of the project hence attainment of the desired goals by different stakeholders. It is thus imperative that the financial goals of a project also capture the financial impacts such as increased incomes by the benefiting public.

2.4.4 Stakeholder Analysis

Stakeholder analysis is a process of systematically gathering and analyzing qualitative information to determine whose interest should be taken in to account when developing or implementing a policy, project or a program. Stakeholder analysis is a key part of stakeholder management (Coble, Coussens & Quinn, 2009). Stakeholders are the persons or organizations who have registered their interest with the policy or program being implemented. This stakeholders can be grouped in to different categories which include; international/donors, national stakeholders, non-profit organizations, commercial organizations, civil society, as well as users/consumers (Katema, Chisholm, & Enright, 2017).

Stakeholder analysis also involves weighing and balancing all the competing demands on a project or policy or program by each of those who have a claim on it. The analysis does not involve deter the interests of stakeholders overriding the interests of other stakeholders. The analysis is done during the preparation phase of a project to assess the attitudes of the stakeholders regarding the potential changes. Stakeholder analysis is done on a regular basis to track changes in stakeholder attitudes over time. It is also a tool or a set of tools with different purposes in its application in the fields of policy, management and project implementation. Being clear and understanding the aims of the project helps in identifying the scope and time dimensions of most of the stakeholder's interests that is past present and/or future (Luyet, Schlaepfer, Parlange , & Butler, 2012).

The pros of stakeholder analysis are that it helps organizations achieve specific operational goals through identifying potential allies and building alliances or removing threats. It may also be carried out to inform strategic planning for specific short term objective or a periodical exercise to scan the current and predict the future organizational environment. In project management stakeholder analysis is used to increase the probability of project success through informing their design, preparation and implementation or as part of evaluation during and after the project's completion. Stakeholder analysis is less complex and time consuming especially when it is used to facilitate project implementation (Stanghelini, 2010).

In cases of a problem multiple set of stakeholders who belong to a different set of actors categories need to be considered and integrated in to the project since they possess different knowledge, perceptions and relationship which will contribute to finding a solution to the problem. Stakeholder analysis is conducted by a team so as to neutralize individual biases and question untested assumptions. Participatory stakeholder analysis can include sharing of decision making regarding identification of actors, determination of which of them are stakeholders and selection of which ones to participate (Mueller, Groesser, & Ulli-beer, 2012).

Government projects management should be integrative, participatory and technically informed and should be based on a bottom-up approach. Involvement of stakeholders serves to ensure that the projects take into consideration local needs, experiences and interests. There exists a gap in stakeholder analysis in government projects. Stakeholder analysis, therefore, ensures that the government optimizes on satisfaction and production, sustains positive communication and reduces conflicts. In Kenya, the government adopts public participation which helps identify and monitor trends, perceptions and challenges overtime with the specific groups of stakeholders (Mungata & Muchellule, 2018)

2.4.5 Annual Budgeted Project Costs

According to Bluementritt (2006) budget is a planning document which contains a number of financial information that refers to the activities that will take place in the future. Budgeting is the process of allocating an organization's financial resources to its units, activities and investments. Budgeting includes formulation, justification, execution and control of budget. The budget represents the legal authority to spend money for a government entity. Adoption of a budget in the public sector implies that a set of decisions has been made by the governing board and administrators that culminates in matching government resource with the entity's needs. Consequently, the budget is a product of the planning process and also provides an important tool for the control and evaluation of sources and the use of resources.

The public budget is redolent of a technical, quantitative text that refers to expenditures and revenue collection decisions made in a given time frame at central or local level of government. The process of public budgeting has undergone a rigorous transformational depending on the degree of evolution achieved by individual, society, politics, and economy. Budget has transformed into a more sophisticated tool for the state to fulfill its primary roles and function in a cost effective manner. The new approaches in budgetary systems aim to establish and maintain oversight on the effects of budget not only those involved in financing of public services, but also, those who benefit from such services, in addition to rationalizing the political decision-making process with an endeavour to properly address and handle the concerns for cost-effectiveness. (Ipek & Ayse, 2018).

The main purpose of the budgeting process is to ensure that the financial resources available in public sector are used efficiently, for both new attracted resources to finance its activities and excess of capital flows from previous business activities. The other purposes of budgeting include, planning and managing the delivery services in the future, it helps in, identifying areas where cost reduction can be implemented and savings can be made, spotting the areas where higher levels of funds are required, determining the priorities of the projects, monitor allocation of resources to a project and determine how they are used to meet the goals of the organization. Budgets represent a landmark for decision making (Santoshi, 2017).

However, a business set goals and objectives of each individual project, along with its budget. Budgeting in public sector has incurred a lot of challenges such as it has required a lot of information that takes a lot of time to determine the exact financial resources, Secondly overlapping causes several changes to the budget, If the program budget is incorrect it can lead to an increase in costs and lastly sometimes budget has made it difficult to evaluate the performance of the project. Multiple layers of administrators govern a project can find out the actual performance of any administrator can become a daunting task (Santoshi, 2017).

According to Abeselom (2008) noted, contractors, on receipt of work tender, prepare cost estimates and based on the estimates, they quote the estimated price of the works and then agrees for executing the work followed by drawing up their plan of work based on the quantities and cost reflected in the bill of quantities which forecast the contractors' commitment for resources, input cost and the profits which they expect. Once construction commences, contractors attempt to accomplish the work in a way that keep the cost of carrying out the work, with the money that will reimbursed to them as a result of valuation of completed works.

Estimation of construction cost involves identification, qualification and evaluation of the various direct and indirect cost components. The budget which is prepared based on these cost components will be the baseline for the cost controlling process. Accordingly, contractor cost management system should consider and integrate these tasks. The total construction cost of a project is composed of four cost categories; direct cost which can be correlated to specific activity, indirect cost which cannot be correlated directly to the physical activity, risk allowances which is incorporated to take care of possible risks and contractors' profit (Girma, 2018).

2.4.6 Finance Mobilization

Financial mobilization is defined as the process of gathering capital which is required to achieve organizational goals and objectives. Financial capital forms the basis for procurement, utilization and maintenance of all types of resources. Without a strong financial base it is challenging for an organization to produce the right types of goods or services in desirable quality and quantity. The availability of funds, therefore, is vital to the overall success of an organization (Omukoba, Simatwa, & Ayondo, 2011).

Financial resources are mobilized to achieve sustainability, reduce dependence on a single source of funds, supplement the existing sources of funding, fund new projects, build reserve in the organization and support institutional heads. Fundraising and donors outreach are some of the channels used to mobilize funds for firms effective performance. Organizations should have clear vision and objectives which prioritize financial mobilization (Musundi, 2015).

Organizations should focus on developing a mechanism to follow up on individual donors, corporations and groups with various degrees of affinity for the organizational programmes. Their support may come in form of small gifts which could be one time donations or could lead to long term funding. Financial mobilization from aid agencies is less reliable due to the existing trends in donor funded project preferences. Executive directors and managers must therefore learn to diversify the sources of funds and come up with creative resource mobilization strategies so as to ensure their survival (Awuor, 2015).

Conducting a financial mobilizations strategy includes the following steps; identifying the potential sources of funds, actively soliciting pledges, following up on pledges to obtain funds, depositing the funds received and recording the transactions and any restrictions on their use. The process of financial mobilization is generally governed by legal agreements at various levels. The strategies and processes used may be constrained by the rules established by the funding party at the inception of the project or programme. For the successful mobilization of local financial resources it is necessary to actively involve all the stakeholders in decision making (Cherogony, 2013).

Financial mobilization encompasses making better use of existing resources and maximizing new and existing resources. Organizations should have empowerment and training programmes which promote employee participation in financial mobilization strategies. In order to ensure proper use of financial resources the employees must have ample knowledge in financial resources management and use (Githinji, Okuto, & Agembo, 2018).

Funds mobilized in an organization can be used to start a new venture or to supplement the funds in an existing firm. Stakeholders in a firm or a project play an important role in mobilization of funds. Effective administration procedures, technical assistance, dissemination of programmes with government and community support as well as appropriate information and technology form the basis for successful financial mobilization (Kinoti, 2016).

2.5 Empirical Literature Review

This section presents a review of past empirical studies on mega government project characteristics (financial risks, project costs, financial goal orientation and stakeholder analysis) annual budgeted project costs and finance mobilization.

2.5.1 Financial Risks and Finance Mobilization

An empirical assessment conducted by Dieguez, Cazorla and Luque (2017) evaluated risk management in mega projects in Spain. The purpose of the study was to identify risks in the projects and how they can be managed. The study was quantitative in nature and involved an analysis of all the empirical literature conducted on risk management in mega projects. The results of the study revealed that financial risk was one of the major risks in mega projects. The risks were found to comprise of liquidity risks, foreign exchange and interest rate risks.

A study conducted by Pawar, Jain and Patil (2015) assessed risk management in infrastructure projects in India. The objective of the study was to analyze risks associated with infrastructure projects in the country. The study used the flyover government project in Pune City. Questionnaires and interviews were used in data collection. The study established that financial risk was among the risks affecting the infrastructure construction projects in the City. The study also observed that financial risks were as a result of changes in design and extension of time.

A study conducted by Anton, Rodriguez and Lopez (2011) analyzed financial risks in construction projects in Madrid. The aim of the study was to identify, classify and analyze the most significant risks in large engineering/construction projects. The results of the study noted that sources of risks for construction projects were both internal and external. The study, further, noted that financial risks in construction projects encompassed fluctuation of the currency, inflation and lack of solvency. Moreover, it was noted that financial risks always resulted in monetary loss.

A regional study conducted by Khodeir and Nabawy (2019) examined the key risks in infrastructure projects in Egypt. The objective of the study was to identify the key threats arising from internal and external environment which affect construction of infrastructural projects. The study used the Cairo Festival City as the case study of the infrastructural project. Purposive sampling was used. The study sample population comprised of 70 experts in infrastructure projects. The findings were that financial risks and management risks were the major risk factors in infrastructure projects in the country.

A study conducted by Mweeba (2015) investigated risks associated with infrastructure project finance in Zambia. One of the objectives of the study was identify project risks. The study used questionnaires to collect data. The study findings established that financial risks were a common problem facing infrastructure projects in the country. It was also observed that most projects in the country are procured through debts and loans from foreign countries and international financial institutions. The study concluded that the government should develop a robust financial risk management mechanism to ensure that public infrastructural projects are fiscally affordable and economically sustainable.

A study conducted by Gbahaho and Oluseye (2017) examined the effects of project cost overruns and schedule delays on infrastructure procurement in South Africa. The purpose of the study was to establish the economic impact of project cost overruns and schedule delays on infrastructure procurement in the country. Secondary data which the study relied on were obtained from policy documents and other financial reports. The study found out that cost overruns and schedule delays affected infrastructure procurement. It was also revealed that cost overruns and schedule delays could result in damaged economic effect such as production inefficiency, contractual disputes, claims and litigation, project failure and total abandonment. The study revealed factors underlying the problem of project cost overruns and schedule delays included macroeconomic factors such as unstable inflation, local currency volatility and depreciation, and foreign currency exchange controls.

An empirical study conducted by Onguka (2019) investigated the impact of oil price, exchange rate and capital structure on firm performance as exhibited by the Nairobi Securities Exchange. The aim of the study was to determine the impact of the aforesaid factors on the performance of firms. The study adopted census survey due to small population size of firms. The hypotheses were formulated and tested on a population of sixty four listed firms. Data were obtained from secondary sources. The findings indicated that there was significant relationship between oil price changes, exchange rate, capital structure and company performance.

A study conducted by Rotich, Ochirii and Mwau (2018) examined the influence of procurement risk and management on the procurement performance of mega projects in the energy sector in Kenya. A census survey of all 47 mega projects under various corporations in the energy sector was conducted. Primary data were collected using questionnaires and analysed using descriptive and inferential statistics. It was established that procurement risk management had a significant effect on the procurement performance of mega projects in the country. It was recommended that procurement should adopt and implement various strategies to enhance collection of adequate and accurate data for risk pricing and evaluation processes.

2.5.2 Project Costs and Finance Mobilization

A study conducted by Locatelli, Littau, Brookes and Mancini (2014) analyzed project characteristics which enable the success of mega projects in the energy sector in Europe. The aim of the study was to access how project characteristics are correlated with project performance. The study used cross-case analysis. The study collected data from 11 mega projects. Correlation tests were done using Fisher Exact Test. The results of the analysis established that the sampled six mega projects operated within the estimated cost while the rest five recorded cost overruns. The study also noted that project cost had a strong correlation with project performance.

A study conducted by Shrestha, Burns and Shields (2013) assessed the magnitude of construction cost and schedule overruns in public work projects. The purpose of the study was to determine the construction cost and schedule overruns for various types and sizes of projects. The study conducted ANOVA test to determine the significant

factors affecting project costs and schedule overruns. It was established that the estimated construction cost was \$1.85 billion. The study further revealed that cost and schedule overruns are determined by the type and size of the project.

An empirical investigation on the successful completion of mega projects in Europe was conducted by Locattelli, Mikic, Kovacevic, Brookes and Ivanisevic (2017). The aim of the study was to identify the characteristics related to project management success in mega projects in the region. The study is grounded on 44 mega projects. The study used systematic empirical based methodology. It was found that the major characteristics which determined project success were cost, time and quality. The study also indicated that mega projects' success was hindered by cost overruns from the legal, socioeconomic and technological aspects of the projects.

Regionally, a study conducted by Damoah (2015) assessed the causes and effects of project failure in government projects in Ghana. The aim of the study was to determine the causes of project failure. The study conducted a document analysis. Semi-structured interviews and questionnaires surveys were used to collect the data. Data was analyzed using thematic and content analysis techniques. The study findings showed that project cost was one of the factors which contributed to government projects failure. The study further established that the governments' projects in the country were characterized by cost overruns.

Another regional study conducted by Asnakew (2016) investigated the challenges and success factors of railway mega projects in Ethiopia. The study assessed the critical success factors and challenges of the overall railway construction project in the country. The study design was explanatory. Primary and secondary data were collected for the study. The sample population comprised of 79 respondents. The study found cost management to be one of the most critical factors in the railway project success. The study also noted that the main challenges faced by the project was the high investment cost. The study, further, established that the project was characterized by cost overruns due to failure of being completed within the scheduled time.

A study conducted by Coffie, Algbavboa and Thwala (2019) analyzed construction completion cost in Ghana's public sector building projects. The aim of the study was to develop a forecast model for estimating the completion cost of projects. The study used 911 building projects undertaken in the country. Multiple regression analysis was used in analyzing data. The study revealed that projects that were completed within the budget did not suffer from scope changes. The study, further, noted that on average there was a 23.6% cost overrun on projects.

In Kenya, a study conducted by Omonyo (2017) analyzed the performance of public infrastructure mega projects. The aim of the study was to determine if public infrastructure mega projects have been delivered successfully in the country. The study adopted cross-sectional census survey design. 27 completed mega public infrastructure projects were accessed. The study established that all the projects surveyed had a budget appraisal of approximately Ksh. 1 billion to Ksh. 40 billion. It was also noted that 8 of the surveyed projects had a budget appraisal of over Ksh.10 billion. The study, further, revealed that mega projects in the country are always delivered over budget, with benefit shortfalls and behind schedule.

A local empirical study conducted by Kariuki (2014) examined financing of infrastructure projects using public private partnerships. The purpose of the study was to determine the effect of financing infrastructure projects using public private partnerships. The study used descriptive survey design. Cluster and systematic sampling were used to select a sample of 30 infrastructure projects under the public private partnerships. The study reviewed secondary data sources for a period ranging from 2004 to 2013. A multiple regression analysis was used to analyze data with the aid of SPSS. From the regression results it was observed that there was a direct relationship between cost of financing infrastructural projects and the value of the project. This meant that a unit increase in the of cost finance would likely lead to a corresponding increase in the value of the project.

Another local examination conducted by Karanja (2018) examined innovative funding models for mega projects. The objective of the study was to assess the funding landscape for infrastructure projects in the country. A case study method was

used. Mega infrastructural projects which were implemented in the country between January 1991 and January 2016 were then assessed. The projects assessed were in the telecommunications, energy and transport sector. The study found that the Thika power limited was the first project to be implemented under the Least Cost Power Development Plan and its total project value was US\$ 120 million. It was also revealed that the Kenya-Uganda rail concession total cost was about US\$ 136 million. This implied that the cost of infrastructural projects in the country is very high.

2.5.3 Financial Goal Orientation and Finance Mobilization

A study by Lovering, Yip and Nordhaus (2016) focused on curating overnight costs of 349 reactors covering the full cost history to establish trends in costs of the reactors built in these countries. This study focused primarily on Nuclear Board reactors in the United States, Germany, France, India, United Kingdom, South Korea, and Japan. It used the IAEA Power Reactor Information System database to collect information on all global reactors completed by the year 2015. After analysis of the available data, it was established that reactors in the U.S. had experienced inflation in costs since the 1960s, which were associated with changes in regulations. On the other hand, the costs in France remained largely rose though not as sharply as in the United States. This was linked to changes in technology and labour costs. West Germany and Canada experienced mild increases, which was connected to consistency in manufacturers and builders used. Minimal changes in costs were experienced in India, South Korea and Japan. The study concluded that there is no intrinsic learning that should be expected for the case of the Nuclear Board plants because the costs evolve and are dependent on a complex set of historical, regional and institutional factors.

In Canada, Gharaibeh (2013) adopted the Delphi method to investigate the problems encountered in managing project risks and used these findings to suggest various ways that they could be overcome. The study was undertaken using two teams within the same organization. Questionnaires designed to capture the problems, opportunities, forecasts and solutions were used to collect the experts' judgments on

a variety of questions. A total of 15 people participated in project A while 12 people participated in project B. Employee turnover, heavy industry regulations and continuous design changes were identified as the most important problems that increased project costs. Additionally, a clear understanding of the scope of work, documentation of assumptions made on the scope of work, staff retention, and alignment of the project with key project stakeholders were identified as the main solutions that could help mitigate project costs.

A study undertaken in Europe by Locatelli, Mikic, Kovacevic, Brookes and Ivanisevic (2017) sought to establish the characteristics that are related to successful project management of megaproject. It focused on 43 independent variables composed of project characteristics. A total of 44 mega projects were reviewed in the course of the study including 12 energy projects, 30 transport, 2 hydro-technical mega projects. The 12 energy projects were composed of 5 Nuclear Board, 3 thermal, 2 wind energy projects, 1 solar project, and an LNG (liquefied natural gas) extracting platforms. Data was gathered on these projects from case collection, systematization and brainstorming processes. Furthermore, this data was coded using a binary system to overcome the complex nature of the data and allow for analysis. Analysis of the data established that stakeholders' characteristics were strongly correlated with success indicators such as cost overruns. However, it established that the uniqueness and complexity of the megaproject also make it difficult for project teams to develop lesson learned systems from the experiences in earlier projects. This indicates that the learning element in goal orientation may not be feasible in the implementation of the megaproject.

A study conducted in Sub-Saharan Africa by Gbahabo and Ajuwon (2017) examined the impacts of project cost overruns on infrastructure procurement in developing countries that had huge infrastructure deficits. An exploratory research approach was adopted with police documents and study reports from reliable organizations such as African Development Bank, World Bank, the Standish Group, and Ernest & Young used to provide insights to the study. It was noted that these cost overruns resulted in Pareto-inefficient allocation of resources, contractual disputes and litigation, cost escalations, loss of job and income, negative public perceptions, and total project

abandonment. It also recommended numerous strategies that could be employed to mitigate project overruns including reference class forecasting, enhanced project management capabilities, prequalification of contractors, risk and contingency planning, use of public-private partnerships, and computer-aided cost estimation models. It is evident from these findings that failure to attain desired financial goals has adverse consequences. It further suggests that the adoption of these mitigating factors can help project teams to achieve their financial goals.

An evaluation into causes and effects of project failure in government projects was conducted in Ghana by Damoah (2015). It sought to establish the perceptions on the extent of failure (causes and effects) in major government projects in the country. Questionnaires and semi-structured interviews were used to collect data from the participants. Probabilistic sampling method (simple random) was used to identify 200 members of the public. On the other hand, non-statistical sampling methods were used to identify the 100 project management practitioners and contractors that participated in the interviews. Details about project management practitioners and contractors were collected from the Ghana Business Directory. It was established that poor monitoring, corruption, political interference, bureaucracy, change in government, fluctuation of prices, lack of continuity, poor planning, delays in payment, and delays in release of funds by the donors were some of the factors that were affecting both the cost and time successes of mega government projects in the country. It was further revealed that these delays lead to slow down economic growth, increased unemployment, loss of revenue by state, cost escalation, damage government image, underdeveloped government sector, collapsed local business, loss of government aid, donors adopting stricter regulations, and low investment. Failure to achieve the desired financial goals in mega projects has severe financial implication to the economy and the respective governments.

In South Africa, Mohutsiwa and Musingwini (2015) undertook a study to develop a formula that could be used in estimating capital costs to be incurred in developing coal mines in the developing countries. The data used was drawn from the database of Anglo American Thermal coal and Raw Materials Group. To develop a formula using this data, the study adopted a parametric estimation model to estimate the costs

that would be incurred. The actual costs of the projects considered were used as the dependent variables with actors such as mine capacity, stripping ratio and lifetime of a mine used as the independent variables. It was observed that the scarcity of data inhibited the accuracy of cost estimation techniques. Most of the available databases provided the cost breakdowns at a high level such as total capital costs without providing the detailed cost breakdown. Furthermore, it concluded that the formula that it developed could be used to estimate the costs within a -30% to + 50% margin of error. This reinforces the view that financial goal orientation is dependent on large error margins, which can explain the high costs overruns experienced in mega energy projects despite the emphasis placed on cost management.

In Kenya, Ocharo and Kimutai (2018) assessed the effects of monitoring, planning, evaluation and participation of stakeholders in power sector projects. The explanatory survey research design was adopted for this study. A census survey was conducted on 380 organizations involved in these projects including 100 contractors, 80 consultants, and 200 Ministry of Energy employees that were involved in Kenya Power Lighting Company, Rural Electrical Authority (REA), Independent Power Producers, and Kengen projects. The data was collected using a self-administered survey questionnaire. It was established that power projects in the country were usually costlier than budgeted for and only a few achieved their objectives or goals. Furthermore, it was noted that these government agencies were not keen on involving shareholders hence the sense of ownership, awareness and accountability was not created. The results of this study demonstrate how financial goal orientation can fail merely because of poor stakeholder participation in mega government projects.

A local study by Kagiri and Wainaina (2013) examined the factors that were contributing to time and cost overruns in power projects undertaken by Kengen. A survey was undertaken on individuals working for Kengen, contractors and consultants working with the company. A total of 33 variables were evaluated that led to the conclusion that 8 factors were responsible for the cost overruns including contractors inability, improper resource planning, project preparation, interpretation of requirements, timeliness, poor definition of work, risk allocation and government

bureaucracy. It was also observed that these challenges would continue to recur in the current Kengen operating environment. These overruns were found to have contributed to cost overruns from 9.4% to 29%. This demonstrates that learning, in financial goal setting, may not be helpful to project teams if the operating environment does not change.

In Turkana County, Kenya, Nanok and Onyango (2017) analysed the effects of oil exploration on social-economic and environmental factors. A cross-sectional survey design was adopted in this study with both parametric and non-parametric statistical methods adopted. It established that locals in the county had not adequately benefitted from job opportunities created and neither had trade volumes increased substantially though the cost of land had increased. This implies that the region has not been able to maximise on the financial benefits associated with mega projects. The findings of this study support the view that mega projects in Kenya have failed to achieve the financial goals, both in terms of cost and financial benefits.

2.5.4 Stakeholder Analysis and Finance Mobilization

Mega projects are large-scale projects which cost at least 1 billion USD or more. They are implemented internationally, impact millions of people and take years to be completed. Basically; they are infrastructural and hence contribute to the country's development, enhance growth of different sectors, connect different regions and create opportunities for new business (Jussupbekova & Pak, 2017). In such projects, stakeholder analysis should be carried out in order to identify stakeholders and their interests, analyzing their relationships and assessing their influences. Stakeholder engagement on the other hand, entails collaboration and developing relationships with stakeholders which is crucial in decision making (Erkul, Erkul, Yitmen, & Celik, 2016).

A study was done in Kazakhstan to explore the Silk Road Economic Belt (SREB) initiative by China in 2013 (Ghauri & Gronhaug, 2010). The aim of the study was to understand how secondary stakeholders from three different sectors namely business, government and society perceived the success of mega projects. Qualitative research approach was used and was aligned with inductive research method and helped the

understanding of the connection between local communities of Kazakhstan and SREB megaproject. Secondary data was obtained from documents and reports related to Western Europe-Western China project executed in Kazakhstan. Questionnaires were also used in collection of primary data from the seven selected organizations. Data was analysed using thematic analysis due to its flexibility. It was established that Kazakhstan is a connecting trade hub between China and Europe. All respondents highlighted that their organizations had indirect impact on the project. It was concluded that the project had a positive impact on overall infrastructure of Kazakhstan. The participants agreed that the project's success could be estimated after its execution so that the final customer could directly rate the price and quality of the product or service.

A study conducted by Irimia-Dieguez, Gonzalez-Villegas and Oliver-Alfonso (2014) assessed the financial performance of innovative megaproject in Spain. The objective of the study was to establish whether mega projects meet their objectives in terms of returns to shareholders. A case study approach was used. The study analyzed the first metro line in Seville. The study noted that in spite of the cost overruns in the construction stage the high leverage nature of the project generated greater returns for shareholders and was successful from both the social and financial profitability point of view. The study also noted that debt used was low cost due to public sector participation as a shareholder of the concessionaire.

A study was conducted in South Africa by Maddaloni (2015) with the aim of identifying the role of community stakeholders in mega projects. The study posited that the impact of mega projects on people and location at the community level was under-researched. The research methodology included investigations of journal publications and materials from the academic community. Research questionnaires were devised to help understand which stakeholders had the most influence and impact on the project. The Relative Importance Index (RII) system was used to rank the respondent's views. The output analysis was presented in graphs, charts and tables. The findings confirmed that the stakeholders ranked the most influential in the project were the community (RII = 0.796), the project manager (RII = 0.778), the structural engineer (RII = 0.741) and the hawkker committee (RII = 0.704). Findings

on the other objective which was to establish nature of stakeholders' influence verified that the local community and local committees had a negative influence on the project. It was recommended that understanding and exploring the influence of community engagement on mega projects would enhance time improvement and minimize costs during construction.

In Ethiopia, a study conducted by Mulugeta and Manjit (2019) evaluated the impact of mega project on a destination branding. The aim of the study was to determine the importance of mega projects perceived by tourist. The sample population consisted of 400 usable responses used for further analysis. Data was analyzed using descriptive and inferential statistical techniques to determine the possible effect of mega project on the destination image. It was established that, cognitive, affective and unique image of destination branding dimension was significantly affected by mega projects existed in the country. The study recommended that stakeholders that work on destination branding in Ethiopia can use mega projects, that is, energy, train and transport as a tool to promote the nation endowed resources that have multidimensional benefit in term of attracting investment and changing the nation image.

In Kenya, a study was done on Thika Highway Improvement Project (THIP) to examine the institutional and legal gaps in environmental regulation in Kenya (Barczewski, 2013). The aim of the study was to evaluate the type and extent of environmental impacts of THIP. The research methodology adopted included techniques such as site visits to the project, desk review of relevant literature, consultations with stakeholders, interviews with city engineers and laboratory analysis of water samples. An expert interview was also conducted and the interviewees included environmentalists and engineers. It was established that there was pollution from the trucks that transport building materials to the project site through emissions of CO₂ and NO₂ which have consequences such as global warming and negative human health problems. Dust was also found to affect the air quality at the project and surrounding areas. Noise and excessive vibrations, water pollution, drainage problems and distraction of vegetation were found to cause environmental

degradation. It was concluded that, when implementing such a mega project it is important to maintain a system of public consultation.

Another study investigating the effect of stakeholder analysis on the performance of road construction project in Elgeyo Marakwet County was conducted by Mugata and Muchelule (2018). The objective of the study was to determine the effect of stakeholders analysis on the performance of road construction in the County. The study sample comprised of 19338 respondents. The study gathered data using semi-structured questionnaires. Simple random and stratified random sampling techniques were adopted. The study found out that stakeholder analysis had a significant effect on performance of road construction projects. The study recommended that the County Government of Elegeyo Marakwet should develop blue prints to guide road construction projects activities hence establish a conducive environment for road projects.

2.5.5 Annual Budgeted Project Costs in the Public Sector

A global study conducted by Aljohani, Ahianga-Dagbui and Moore (2017) examined construction project cost overruns in various countries. The purpose of the study was to evaluate the main causes of cost overruns of construction projects. The study used a critical evaluation of literature in order to achieve the goal of the study. The study established that the main causes of cost overrun in projects were poor cost estimation, poor tendering documentation and contractors financing. The study further noted that most mega projects around the world exceeded the original budgeted cost, for example, in Korea the average final cost of seven mega projects at completion increased by 122.4% compared to the original budgeted cost.

A study conducted by Sweis, Rumman, Hussein and Dahiya (2013) investigated cost overruns in public construction projects in Jordan. The study was aimed at identifying the factors which had major roles in affecting projects costs. The study involved 30 engineers working in Jordanian construction projects. Secondary data was obtained from the ministry of housing and public works relating to 57 major construction projects. The study established that the major causes of cost overruns in

the projects were government delay in supplying the initial capital as well as severe weather conditions.

An empirical analysis examining the successful control of major project budgets was carried out by Lichtenberg and Klakegg (2016). The study assessed research results from three decades ago. The study focused on 40 major infrastructure projects in the country. It was observed that major projects in the country were financed by the State and accepted by parliament for the final go and financing. In case of a budget shortfall, the projects got additional funds from a reserve pool. The study further noted that the Oslo construction project had a budgetary cost of \$86 million while the Lillehammer Olympic Games project was allocated a working budget of \$800 million and a reserve of approximately \$90 million.

A regional study carried out by Edeme and Nkalu (2017) assessed budgeting for development in Nigeria. The study examined the implementation and performance of capital budget in the country. The study employed the descriptive approach. Stratified random sampling technique was used to select relevant projects from various ministries departments and agencies. Secondary data were further gathered from the Ministry of finance, the Budget office and National Bureau of Statistics 2014. The results revealed that roads and bridges were allocated Naira 151 billion, the capital projects within the power sector were allocated 70 billion, while education sector projects had a budget of N60.14 billion. All this allocation had a funding gap of N18 billion for roads and bridges, N15 billion for the power sector and N39.86 billions for the education sector respectively.

Another regional study evaluated budgeting for infrastructure development in Nigeria was conducted by Opawole, Babalola and Babatunde (2012). The study population comprised of architects, quantity surveyors, builders, town planners, estate surveyors and engineers. The study was delimited to Osun State. The study adopted descriptive and inferential statistics to analyze data. The study noted that infrastructure financing depends majorly on budgetary financing in the region. Moreover, the study noted that there was inadequate contribution of construction professionals in activities involving post budgetary activities. Furthermore, it was

observed that the infrastructure projects budgeted for execution lacked adequate technical evaluation and cost assessment.

A local study conducted by Nganyi, Jagongo and Atheru (2019) analyzed the determinants of government expenditure on public flagship projects. The study employed descriptive research design and positivist philosophy. The study targeted 348 projects for the period ranging from 2008 to 2012. Through stratified random sampling a sample of 96 projects was selected. The data was collected using questionnaires and analyzed using multiple regression analysis. The findings indicated that government expenditure on the public flagship projects in the country was determined by the planning process, and the source of funds. The study further recommended that the national treasury should increase resources for financing public flagship projects in the country.

2.5.6 Finance Mobilization

Globally, a study conducted by Ratri (2016) identified the systematic problems of a renewable energy project in Sumba Iconic Island. One of the objectives of the study was to explore resource mobilization initiatives for the project. The study gathered data through semi-structured interviews with key stakeholders. The results of the study indicated that financial resource mobilization was weak due to the insufficient capacity of public and private stakeholders to pool financial resources for the purpose of enhancing the implementation of the project. The study also noted that the initiative still requires huge financial mobilization efforts in order to achieve its objective and goals.

In India, a study conducted by Sarangi (2018) evaluated financing of green energy. The objective of the study was to establish the challenges and solutions of financing renewable energy projects in the country. The study results revealed that financial mobilization in the sector was curtailed by the short tenure of loans, high capital costs and lack of adequate debt financing. The study also acknowledged that the problem of mobilizing the necessary finance rose due to the various technological specifications which often required high capital costs. In addition, the study recommended that the government should embark on issuance of bonds and setting

up of infrastructure debt bonds in order to reduce the viability gap in green energy financing projects.

Another global study conducted by Awais (2018) examined the financing model and financing efficiency of the construction of China Pakistan Economic Corridor (CPEC). The study sought to determine the financing model and efficiency of the CPEC project. Qualitative research approaches were used for the study. Secondary data were collected from the media reports and from the Ministry of Planning and Development. Primary data was also obtained from funding banks. It was established that the Bank of China disbursed up to US\$11 billion in concessionary loans for the project at a bargain basement rate of 1.6%. The study also noted that 80% of the investment funds came from private investments while the remaining 20% were composed of soft loans.

An empirical analysis conducted by Adama (2018) investigated the financing of mega infrastructure in Nigeria. The study examined the challenges facing the funding of infrastructure and how capital for mega projects is mobilized in Lagos State. The Lagos Megacity Project was used for the study. The study findings established that capital was largely mobilized from the private sector. The study, further, noted that public funds were used in the initial stage to facilitate the implementation of the project.

An empirical analysis conducted by Maweje and Munyambonera (2017) analyzed financing infrastructure development in Uganda. The study explored the options in scaling up infrastructure development in the transport and energy sector. Data were collected through review of literature and a survey of key stakeholders. The results of the study revealed that domestic revenue mobilization is the primary available option for financing energy and transport projects in the country. The study also concluded that the development form of financing from donors such as grants have decreased significantly. The study, therefore, recommended that the government should diversify its sources of financing and also improve capacity for public investment management.

In Ghana, a study on innovative financing of infrastructure projects was conducted by Badu, Manu, Edwards and Holt (2011). The study assessed the application of Innovative financing in infrastructure projects in Ghana. The study draws its data from literature and published data from Ghanaian ministries, departments, and agencies who procure infrastructure projects. The study revealed that the central government in the country urged the local authorities not to rely on the district assemblies' common fund but deploy innovative funds mobilization strategies. The study also indicated that innovative financing was employed in the country during the implementation of large and complex infrastructure projects. In addition, the study established that innovative financing ensures the utilization of private and public funds in a manner that financial mechanisms are bundled to deliver projects more efficiently, within the scheduled time and on a value for money basis.

An empirical, analysis conducted by Kariuki (2014) analyzed the effect of financing infrastructure projects using public private partnerships in Kenya. The study adopted descriptive survey design. Cluster sampling was used to draw a sample of 60 infrastructure projects. Systematic selection was then employed to draw 30 projects which were under public and private partnerships. The study utilized secondary data. Multiple regression analysis was used in data analysis. The findings of the study indicated that financing infrastructure projects under public private partnerships is critical. The study further noted that infrastructure projects should be self-financing.

A local study assessing the effect of project resource mobilization on performance of road infrastructure projects was conducted by Densford, James and Ngugi (2018). The objective of the study was to establish the effects of resource mobilization on the performance of road projects constructed by local firms in the country. The study was conducted on a total of 41 road infrastructure projects. The results revealed that resource mobilization in projects had a significant effect on the performance of road infrastructure projects. The study also established that local firms were not able to mobilize sufficient financial resources. The study, further, concluded that Financial and technical resources mobilization, public-private partnership and government guarantee would improve the performance of road infrastructure projects.

Additionally, a study conducted by Karanja (2018) investigated innovative funding models for transport mega projects in Kenya. The study assessed the dominant funding models in the country, that is, the public private partnerships and government funded procurement. The study used Roger Martins method of integrative thinking to develop new ways to fund mega project in the country. The study found that large-scale infrastructure projects were financed through direct state spending, budgetary allocation, domestic and foreign debts as well as grants from foreign donors. Moreover, it was noted that the projects were also financed through privatization (public offering of their shares) or direct sale to strategic investors. Furthermore, it was observed that financing and operating roles of various transport utilities had been transferred to the private sector through concession agreements.

2.6 Critique of the Existing Literature

The methodologies of local studies which have been reviewed in relation to the characteristics of mega projects and financial mobilization in the energy sector have been critiqued. Pertaining project cost, a study conducted by Omony (2017) analyzed the performance of public infrastructure mega projects in the country. The study used cross-sectional survey design to establish if public infrastructure mega projects have been delivered successfully. 27 completed mega public infrastructure projects were accessed. Though the study used cross-sectional survey research design the sampled projects were less than those ones addressed by the current study.

A study conducted by Ocharo and Kimutai (2018) assessed the effects of monitoring, planning, evaluation and participation of stakeholders in power sector projects. The study adopted explanatory survey research design. A census survey was conducted on 380 employees who comprised of 100 contractors, 80 consultants, and 200 Ministry of Energy employees who worked under Kenya Power Lighting Company, Rural Electrical Authority (REA), Independent Power Producers, and Kengen projects. The data was collected using a self-administered survey questionnaire. The study, however, failed to use used a cross-sectional survey research design and its study sample was way higher than that of the current study.

Another study by Kagiri and Wainaina (2013) examined the factors that were contributing to time and cost overruns in power projects undertaken by Kengen. A survey was undertaken on individuals working for Kengen, contractors and consultants working with the company. The study sample, nevertheless, used contractors and consultants as the respondents. A study conducted by Nanok and Onyango (2017) analysed the effects of oil exploration on social-economic and environmental factors in Kenya. A cross-sectional survey design was adopted in this study with both parametric and non-parametric statistical methods adopted. The study used proportional sampling technique to obtain a sample population of 385 respondents. The study failed to apply census approach as part of its methodology due to its large target population.

A study was done on Thika Highway Improvement Project to examine the institutional and legal gaps in environmental regulation by Barczewski (2013) in Kenya. The research methodology adopted included techniques such as site visits to the project, desk review of relevant literature, consultations with stakeholders, interviews with city engineers and laboratory analysis of water samples. An expert interview was also conducted and the interviewees included environmentalists and engineers. The study did not use cross sectional research design, and collected data from the project stakeholders, engineers. A local study assessing the effect of project resource mobilization on performance of road infrastructure projects was conducted by Densford, James and Ngugi (2018). The study was conducted on a total of 41 road infrastructure projects. However, the study used 41 road infrastructure projects while the current study used 32 mega projects in the energy sector.

2.7 Research Gaps

A close critique of the scope and results obtained from past local studies brings to the fore important research gaps. An empirical assessment conducted by Dieguez et al (2017) evaluated risk management in mega projects in Spain. It revealed that financial risk was one of the major risks in mega projects. The study also found that risks were found to comprise of liquidity risks, foreign exchange and interest rate risks. A study conducted by Pawar et al, (2015) assessed risk management in

infrastructure projects in India. It established that financial risk was among the risks affecting the infrastructure construction projects in the City. Though the studies addressed financial risk, they failed to address it in the context of financial mobilization in mega energy projects. The foregoing studies failed to link financial risk to financial mobilization in mega projects in the energy sector.

A study conducted by Omony (2017) analyzed the performance of public infrastructure mega projects. The study established that all the projects surveyed had a budget appraisal of approximately Ksh. 1 billion to Ksh. 40 billion. The aforementioned study, however, failed to relate project cost to finance mobilization in mega energy projects in Kenya. Moreover, the reviewed studies did not link financial goal orientation to finance mobilization particularly in respect of the mega government projects in the energy sector.

Another local study by Ocharo and Kimutai (2018) assessed the effects of monitoring, planning, evaluation and participation of stakeholders in power sector projects. It was established that power projects in the country were usually costlier than budgeted for and only a few achieved their objectives or goals. Kagiri and Wainaina (2013) examined the factors that were contributing to time and cost overruns in power projects undertaken by Kengen. The study established that 8 factors were responsible for the cost overruns including contractor's inability, improper resource planning, project preparation, interpretation of requirements, timeliness, and poor definition of work, risk allocation and government bureaucracy. The studies, nevertheless, did not specifically look in to financial goals orientation.

Moreover, a study conducted by Nanok and Onyango (2017) analysed the effects of oil exploration on social-economic and environmental factors. It established that locals in the county had not adequately benefitted from job opportunities created and neither had trade volumes increased substantially though the cost of land had increased. The study, however, was limited to Turkana County. A study was done on THIP to examine the institutional and legal gaps in environmental regulation by Barczewski (2013) in Kenya. It was established that there was pollution from the trucks that transport building materials to the project site through emissions of CO₂

and NO₂ which have consequences such as global warming and negative human health problems. The study failed to address stakeholder analysis in mega projects in the energy sector in the country. The identified research gaps were addressed by the present study.

2.8 Summary of Reviewed Literature

The chapter presents a review of theories, conceptual framework, literature on study variables, and a review of empirical studies relative to characteristics of mega government projects and finance mobilization especially in the energy sector. In addition, the chapter presents a critique of local studies and research gaps emanating from a shortfall of the aforesaid studies relative to project characteristics and finance mobilization in the energy sector.

The theories which have been reviewed include financial risk theory, agency cost theory, goal setting theory, stakeholder theory and resource mobilization theory. The strengths, weaknesses and applications of these theories are explained. Financial risk theory and agency cost theory are discussed in line with financial risks and project cost respectively. Goal setting theory is linked to financial goal orientation. Stakeholder theory is reviewed and applied to the concept of stakeholder analysis. Lastly, resource mobilization theory is discussed in the context of finance mobilization by projects in the energy sector in Kenya.

The conceptual framework that guides this study illustrates the study variables which include financial risks, project costs, financial goal orientation, stakeholder analysis and finance mobilization. The first four set of variables are characteristics of mega government projects and constitute the predictor or independent variables. Finance mobilization is the dependent or outcome variable. The framework hypothesizes that there exists relationships between each of the aforesaid independent variables and the dependent variable.

The chapter further covers a review of literature on study variables, that is, financial risks, project costs, financial goal orientation, stakeholder analysis and finance mobilization. As such, definitions, descriptions and/or explanation relative to these

variables are presented in a candid way. Moreover, hitherto empirical studies in relation to the aforementioned variables are reviewed. The review follows a funnel approach where global studies are reviewed first followed by regional studies, and lastly local or Kenya's studies are reviewed.

The local studies are then critiqued whereby the methodology used in the aforesaid studies is compared to the methodology employed in the present study. After critiquing past empirical studies, they are assessed with the view of establishing research gaps. These gaps result from a shortfall in past research findings and both the objectives and scope of the current study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter provides a detailed research methodology of the study. Discussion under this chapter includes research design, target population, sampling techniques, research instruments, data collection procedure, pilot testing and data analysis. According to Dawson (2009), research methodology is the philosophy or general principles which guide the research. Kombo and Tromp (2009) as well as Zikmund et al, (2010) opine that research methodology deals with the description of the methods applied in carrying out research studies.

3.2 Research Philosophy

Philosophy is defined as the general beliefs, concepts and attitudes of an individual or a group (Mertens, 2010). The philosophical method is based on one's ability to make sound and reasoned arguments (Baronett, 2008). Ancient philosophers established two main types of reasoning to test the validity of their observations and to construct a rational argument that is phenomenological philosophy or constructivism and positivism philosophy (Cooper & Schindler, 2008; Mertens, 2010). This type of reasoning provides framework for the kind of logical analysis that drives scientific research and discovery (Baronett, 2008).

In their work Dickson, Akwasi and Ankrah (2016) presented constructivism philosophical paradigm as an approach that asserts that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. It is based on the analogy or basis that people form or construct much of what they learn through experience.

This study was based on positivism as its philosophical foundation. Positivism is an epistemological position or approach that advocates the application of the methods of the natural sciences to the study of social reality and beyond (Bryman, 2012). The basic affirmation of positivism is that all knowledge regards matters of fact are based

on the positive data of experience. Positivism states that knowledge is obtained using scientific methods which are objective and measurable. Positivism is based on four basic principles (Saunders *et al.*, 2007). The first principle is that of phenomenalism. This implies that only phenomena that are observable and measurable are regarded as knowledge. The second principle is deductivism. This implies that the purpose of the theory is to generate hypothesis that can be tested and allow explanation of laws to be assessed. The third principle is inductivism which states that knowledge is arrived at through gathering of facts that provides basis for laws.

The fourth principle is objectivism. This implies that knowledge must be conducted in a way that is based on positive information gained from observable experience and only analytical statements are allowed are known to be true through reason alone (Cooper & Schindler, 2011). Based on the four basic principles of positivism, the study will adopt positivism philosophy. This philosophy is based on theories that are used to generate hypothesis that are tested to give statistical justification of conclusions from the empirically testable hypothesis (McMillan & Schumacher, 2010). Lastly, this philosophy was found to be appropriate for this study since the underlying objective was to put into perspective the mega project characteristics and their influence on finance mobilization in Kenya's energy sector.

3.3 Research Design

The study employed cross-sectional survey research design. Cross-sectional survey research design is a design in which a group of subjects (sample) is selected from a defined population (source population) and contacted at a single point in time. This design is good in assisting the researcher observe more variables at the point in time and is useful for describing a relationship between two or more variables (Breakwell, Hammond & Fife-Schaw, 1995). According to Upagade and Shende (2012), research design is the arrangement of condition from collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It is the logical manner in which individuals or other units are compared and analyzed and acts as the basis of making interpretations from the data. Lavrakas,

(2008) describes a research design as a general plan or strategy for conducting a research study to examine specific testable research questions of interest.

Research design is the blue print for the collection, measurement and analysis of data. It is a plan and structure of investment conceived so as to obtain answers to research questions (Coopers & Schindler, 2008). According to Burns and Grove (2003), the purpose of research design is to achieve greater control of the study and to improve the validity of the study by examining the research problem. This choice of the cross-sectional survey research design was further informed by the fact that the study sought to obtain descriptive and self-reported information from the managers in all energy establishments in Kenya. The design allowed the study to expose the respondents to a set of questions to allow for comparison.

3.4 Target Population

Sekaran and Bougie (2011) refers to a population as the entire group of people, events or things of interest that the study wishes to investigate. This study targeted all project managers working in all energy projects in Kenya. Moreover, the study targeted all energy projects amounting to Kshs 1 billion and above. Christian and Gerhard (2007) qualified mega projects to be those consuming at least an equivalent of Kshs 1 billion and have an implementation period of more than one year. There were a total of 32 energy projects across the country with estimated projects costs above one billion Kenyan shillings during the time this study was conducted (Appendix IV). Therefore, the unit of analysis constituted the 32 projects in the Kenya's energy sector.

3.5 Census Design

A census design describes the procedure of selecting all members of the projected study population. It is defined as an attempt where all elements in a group are listed with the object of measuring one or more parameters of those elements (Dumicic, 2011). This approach is often necessitated by either a relatively small study population or when the reliability and accuracy of the results is highly demanded. The projected study respondents were 32 project managers in charge of projects

under the purview of state corporations in the energy sector. Given that the number of projects was not that huge and the project managers were thus few, the study adopted a census approach where all the respondents were involved in the study. The distribution of the project managers is as shown in Table 3.1.

Table 3.1: Distribution of Project Managers

Mega Projects	Project Managers
Bogoria Silali Geothermal Project	1
Menengai Geothermal Development Project	1
The Scaling - Up Access To Energy Project	1
Olkaria I and IV	1
220KV Kamburu - Embu - Thika Transmission Line	1
Olkaria V (Geothermal)	1
National Grid System: Nanyuki-Isiolo-Meru	1
Sondu Homabay Ndhiwa Awendo Electrification Project	1
Transmission line Mombasa-Nairobi	1
Nairobi 220KV Ring	1
Turkwell- Ortum- Kitale	1
Kenya Electricity Expansion Project (KENTRACO)	1
Eastern Electricity Highway Project (Ethiopia- Kenya Interconnector)	1
Interconnection Project of Electric Grids of Nile Equatorial lakes C	1
Power Transmission System Improvement project	1
Kenya Power Transmission Expansion Project	1
Loiyangalani-Suswa Transmission line	1
Nuclear Board Power Plant Siting	1
Olkaria Lessos Kisumu Power Lines Construction Project	1
Nairobi 132kv And 66kv Network Upgrade And Reinforcement	1
Last Mile Electricity Connectivity	1
Multi-National Kenya-TZ Power Interconnection Project	1
Street-lighting	1
Menengai – Soilo	1
Nairobi City Centre E.H.V & 66KV Network Upgrade & Reinforcement	1
Retrofitting of Mini Grids	1
Kenya Power Distribution System Modernization & Strengthening Project	1
Kenya Electricity Modernization Project	1
Kenya Development of Solar Power Plant	1
Electrification of Public Facilities	1
Installation of Transformers in Constituencies	1
Solar PV Installation on institution and Community	1
Total	32

3.6 Research Instruments

The study made use of a structured questionnaire for primary data collection as well as data collection sheet for secondary data collection. The questionnaire was self-designed and was modelled in tandem with the study objectives where the study variables (financial risks, project costs, financial goal orientation, stakeholder analysis, and finance mobilization) were captured. Questionnaire was used to cope with the constraints of limited time and budget. Questionnaires help to obtain more responses from a large number of respondents in a short time and are used for obtaining structured responses which is also convenient in data analysis (Cooper & Schindler, 2003). The questionnaire contained various items seeking different information from the targeted respondents. The questionnaire contained a five-point Likert scale (5 – strongly agree, 4 – agree, 3 – undecided, 2 – disagree and 1 – strongly disagree) to measure the variables under the study. Secondary data was obtained from published financial reports of the six parastatals in the energy sector, that is, GDC, Kentraco, KPLC, KenGen, Kenya Nuclear Board Board and REA.

3.7 Data Collection Procedure

The researcher proceeded to collect data from the selected respondents after receiving permission from the relevant authorities. The researcher recruited research assistants who were trained on the content of the questionnaire and the data collection process. Then the research assistants visited the parastatals for data collection. The completed instruments were verified and collected on the same day of distribution after the researcher dispatched advance introduction letters which were followed by courtesy introduction telephone calls. This was done to clear the way for the research assistants and this reduced potential scepticism of respondents to participate in the study.

3.8 Pilot Testing

In conducting the pilot study, the study was interested in establishing whether the respondents understood the questions thus offering the required information. According to Young (2009), a pilot study was conducted to detect probable weaknesses in design and instrumentation and also to provide accurate data for selection of a sample. The pilot testing was done using 10% of the study population (4 respondents) who were picked from project managers that were not participants in this study. This enabled the study to conduct both validity and reliability tests. This was further important in checking the suitability and the clarity of questions in the designed instruments, relevance of the information being sought, the language used and the content of the research instrument.

3.8.1 Validity Testing

Validity is the accuracy and meaningfulness of inferences, which are based on the research results (Haradhan, 2017). For a data collection instrument to be considered valid, the content selected and included must be relevant to the need or gap established. The research instruments were tested for validity to ascertain whether they measured the variables under study. Content validity of an instrument is improved through expert judgment (Kimberlin & Winterstein, 2008). As such, the content validity was ascertained by my assigned supervisors to check and assess the frequency of errors and the accuracy of the data which was projected to be collected. The process of validation enabled the study to test the suitability of the questions, the adequacy of the instructions provided, the appropriateness of the format and sequence of questions. Some corrections were made to the questionnaire and the final version was printed out and administered to collect data for the main study.

3.8.2 Reliability Testing

According to Haradhan (2017), reliability is the ability of a test to consistently yield same results when repeated measurements are taken of the same individual under the same conditions. Trial testing of the measuring instruments should be undertaken using a few subjects whose characteristics are similar to those in the sample to

ascertain the feasibility of the study. The reliability of the research questionnaire for this study was determined using the Cronbach's alpha coefficient. The aforementioned coefficient ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. The formula used in the calculation is

$$\alpha = r*k / [1 + (k - 1)r]$$

Where k is the number of items considered and r is the mean of the inter-item correlations. The size of alpha is determined by both the number of items in the scale and the mean inter-item correlations. George and Mallery (2003) provided the following rules of thumb: $\geq .9$ – Excellent, $\geq .8$ – Good, $\geq .7$ – Acceptable, $\geq .6$ – Questionable, $\geq .5$ – Poor, and $< .5$ – Unacceptable. Values above 0.7 were assumed to indicate that the instrument was reliable. The results of reliability testing using the Cronbach's alpha coefficient are as shown in Table 4.1.

3.9 Data Analysis and Presentation

The filled questionnaires and secondary data collection sheets were screened to ensure that they were filled completely and appropriately. The aforesaid procedure ensured that outliers arising from inappropriately and/or incomplete data collection instruments, were reduced or eliminated in totality. This resulted in enhanced validity and reliability of the data analysis. The collected data was processed and analyzed based on the objectives and research hypotheses using Statistical Package for Social Sciences (SPSS) Version 24 for windows. This was done using both descriptive and inferential statistics. Descriptive statistics included frequencies, percentages, means, standard deviations, variances, skewness and kurtosis. Inferential statistics were in form of Pearson's Product Moment Correlation Coefficient (PPMCC), simple linear regression and multiple linear regression.

3.9.1 Descriptive Analysis

Both the primary and secondary data were subjected to descriptive analysis. In respect of primary data, analysis was in form of measures of distribution, measures of central tendencies and measures of dispersion. These took the form of percentages, means and standard deviations respectively. With regard to secondary data, skewness and kurtosis were statistics used in addition to the aforesaid descriptive statistics.

3.9.2 Model Pre-Estimation Diagnostic Tests

In line with assumptions of multiple linear regression analysis, five pre-estimation diagnostic tests were carried out to determine the suitability of the adopted models in evaluating the combined effect of mega project characteristics on financial mobilization amongst parastatals in Kenya's energy sector. These tests included linearity test, normality test, homoscedasticity test, multicollinearity test and autocorrelation or serial correlation test.

3.9.2.1 Linearity Test

To check for linearity, standardized residual plots against standardized predicted values were plotted. The standardized residual plots were examined for an average residual around zero and no curves or clumps of points. This method was used by Karanja *et al.* (2016) in a study examining the influence of organizational justice on organizational commitment.

3.9.2.2 Normality Test

The study assessed the normality of data of the sample in respect of the variables in the study. The purpose of normality test is to assess whether the sample is obtained from a normally distributed population. The normality of the data was examined by checking for skewness and kurtosis of the data. Under this test, normal distribution is attained when the skewness and Kurtosis values are less than twice the value of their respective standard errors. Condition for normality is required for one to fit a linear regression model (Sekaran, 2003).

3.9.2.3 Homoscedasticity Test

Homoscedasticity is defined as an occurrence of similarity in the variance of scores on different variables. It mainly occurs in a regression model when at each level of the independent or predictor variable, the variances of residuals are similar (Issa & Nadal, 2011). A scatter plot was employed to test the homoscedasticity across mega project characteristics which constituted predictor variables, that is, financial risks, project costs, financial goal orientation and stakeholder analysis.

3.9.2.4 Multi-Collinearity Test

Multi-collinearity occurs in statistics where two or more predictor variables in a multiple regression are highly correlated. This leads to the estimate of one variable impacting on the dependent variable while controlling for the other variables that tends to be less precise than if predictors were uncorrelated. The Gauss-Markov assumption only requires that there be no perfect multi-collinearity and so long as there isn't perfect multi-collinearity, the model is identified, that is it can estimate all the coefficients and that the coefficients would remain best linear unbiased estimators (BLUE) and that the standard errors would be correct and efficient. The existence of strong correlation between the independent variables was tested using variance inflation factor (VIF) and coefficients of the Pearson Correlation (Gujarati, 2003). Using VIF method, a tolerance of less than 0.2 and a VIF of more than 5 indicates presence of multi-collinearity. On the other hand, using coefficients of the Pearson correlation, scores exceeding 0.8 show the existence of multi-collinearity (Cooper & Schindler, 2008; Gujarati, 2003).

3.9.2.5 Autocorrelation Test

The study further tested for autocorrelation or serial correlation. This was founded on the fact that the study analyzed panel data which was obtained from secondary sources. The objective was to critically examine the panel data over the seven years period over which the study was based, that is, from year 2012/2013 to year 2018/2019.

3.9.3 Correlation Analysis

Spearman rank correlation coefficient and Pearson's Product Moment Correlation Coefficient (PPMCC) were used to establish the relationships between the independent variables and the dependent variable for primary and secondary data respectively. The values of the correlation coefficient are between -1 and +1. A value of 0 implies no relationship, +1 correlation coefficient indicates that the two variables are perfectly correlated in a positive linear sense, that is, both variables increase together while a values of -1 correlation coefficient indicates that two variables are perfectly correlated in a negative linear sense, that is, one variable increases as the other decreases (Collis & Roger, 2013; Neuman, 2006). The correlation coefficient was used to show the magnitude and direction of the relationship between individual independent variables and the dependent variable. The correlation strengths was interpreted using Cohen and Cleveland (2013) decision rules where 0.1 to 0.3 indicated weak correlation, 0.31 to 0.5 indicated moderate correlation strength and greater than 0.5 indicated a strong correlation between the variables. The decision rule has been used by Nguyen and Quynh (2011) in their study of determination of the correlation between customer attitude towards consumer issues and expectations on government intervention.

3.9.4 Regression Analysis

Regression analysis is a statistical tool for the investigation of the extent to which independent variables predict the dependent variable. Usually, the investigator seeks to ascertain the causal effect of one variable upon another. For example, the effect of a price increases upon demand or the effect of changes in the money supply upon the inflation rate. To explore such issues, the researcher assembles data on the underlying variables of interest and employs regression to estimate the quantitative effect of the causal variables upon the variable that they influence. Dearing and Hamilton (2006) stated that multiple regression analysis involves combining several predictor variables in a single regression equation. With multiple regression analysis, we can assess the effects of multiple predictor variables (rather than a single predictor variable) on the dependent measure.

The R square, t-tests and F-tests and Analysis of Variances (ANOVA) tests were all generated by SPSS to test the significance of the relationship between the variables under the study and establish the extent to which the predictor variables explain the variation in dependent variable. In testing the hypothesis the following model was used.

$$Y = \beta_0 + \beta_i X_i + \varepsilon \dots\dots\dots (i)$$

Where Y = Finance Mobilisation

X_i = each independent variable (Where $i=1, 2, 3, \& 4$)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \dots\dots\dots (ii)$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 I + \varepsilon \dots\dots\dots (iii)$$

Where Y represents ‘Finance Mobilisation (Dependent Variable)’

X_1 represents ‘Financial Risks (First Independent Variable)’

X_2 represents ‘Project Costs (Second Independent Variable)’

X_3 represents ‘Financial Goal Orientation (Third Independent Variable)’

X_4 represents ‘Stakeholder Analysis (Fourth Independent Variable)’

I represents ‘Product of Financial Risks, Project Costs, Financial Goal Orientation, Stakeholder Analysis, and Annual Budgeted Project Costs (Moderator Variable)’

B_0 ‘Constant’

B_1, B_2, B_3, B_4 and B_5 represent ‘Parameter Estimates’

ε represents ‘Error Term for the Regression Coefficients’

Data collected was subjected to econometric tests to check that the assumptions of multivariate analysis are met before being subjected to regression analysis. The data was checked for linearity, normality, multi-collinearity, and homoscedasticity of residuals. According to International Business Machines (IBM) (2010), the assumptions of linear regression must be met by the data to be analyzed.

3.9.5 Variable Definition and Measurement

The study considered both independent and the dependent variables. The independent variables included financial risks, project costs, financial goal orientation and stakeholder analysis. The dependent variable, on the other hand, was financial mobilization. Each of these variables was operationalized using measurable indicators. Financial risks were measured by forex gain or loss, interest rate and exchange rate. Project costs were operationalized by average initial capital and finance costs. Sales-to-assets ratio, net worth of firm, average payback period, working capital ratio and profit before taxation were metrics of financial goal orientation. Stakeholder analysis was measured by taxation for the year, profits generated annually, debt-to-equity ratio, earnings per share and dividend per share. The Altman Z-score was employed as an aggregate of the indicators of stakeholder analysis. Financial mobilization was operationalized by commercial loans, concessional loans and bank overdrafts. Other indicators of financial mobilization included budget funding from the government and equity finance contributed by the shareholders of the parastatals in the energy sector. In addition to the independent and dependent variables was the moderator variable which was represented by the annual budgeted project costs.

3.9.6 Operationalization of Study Variables

The operationalization of the study variables has put into consideration measurability of the study constructs which tallies with the stipulation of positivism philosophy (Gill & Johnson, 2010). The operationalization of the study variables as presented in Table 3.2 and Table 3.3 has considered the fact that primary data and secondary were different with regard to the measurement of their respective variables (financial risks,

project costs, financial goal orientation, stakeholder analysis and financial mobilization).

Table 3.2: Operationalization and Measurement of Study Variables (Primary Data)

Study Variable	Type	Operationalization	Measurement
Financial risk	Independent	Economic risk, interest rate, inflation rate, default risk, credit risk, delayed payments, litigation costs	Ordinal
Project costs	Independent	Initial capital or cost, viability gap funding, cost overruns, cost of finance, inflation of project costs	Ordinal
Financial goal orientation	Independent	Initial capital recoupment, project progress monitoring, project milestones, project goals clarity, financial returns prediction	Ordinal
Stakeholder analysis	Independent	Stakeholders' diversity, stakeholders' size, stakeholders' contribution, stakeholders' influence, stakeholders' power, interests of stakeholders	Ordinal
Finance mobilization	Dependent	Government funding, conditional grants, bonds, concessional loans, external loans, foreign direct investment funding, donor funding	Ordinal

The operationalization of study variables in relation to secondary data that were collected is illustrated in Table 3.3.

Table 3.3: Operationalization and Measurement of Study Variables (Secondary Data)

Study Variable	Type	Operationalization	Measurement
Financial risk	Independent	forex gain or loss, interest rate, exchange rate	Continuous scale
Project costs	Independent	Average initial capital, cost of finance	Continuous scale
Financial goal orientation	Independent	Sales-to-asset ratio, net worth of firm, average payback period, working capital ratio, profit before taxation, taxation for the year	Continuous scale
Stakeholder analysis	Independent	Profits generated annually, debt-to-equity ratio, earnings per share, dividend per share, Altman's Z-score coefficient	Continuous scale
Budgeted project costs	Moderator	Annual budgeted costs for each of the years under survey	Continuous scale
Financial mobilization	Dependent	Equity finance, commercial loans, concessional loans, budget funding, bank overdrafts	Continuous scale

3.9.7 Tests for Null Hypotheses

The study used F-statistic and t- statistic to measure and test the null hypotheses. The hypotheses will be tested at p-value = 0.05. This is demonstrated in the Table 3.4. Ideally, the t-statistic was employed to test the null hypotheses. However, in the event that results of the analysis of variance (ANOVA) depicted F-value that was not statistically significant at 0.05 level of significance ($p > 0.05$), the regression analysis did not proceed any further. Hence, the pertinent hypothesis was tested at this point using the results of F-statistic.

Table 3.4: Hypotheses Testing

Objective	Hypothesis	Analysis tests	Interpretation
To assess the influence of financial risks on finance mobilization for mega projects in Kenya's energy sector.	H ₀₁ : Financial risks have no significant influence on finance mobilization for mega projects in Kenya's energy sector.	T-Test F-Test	If $p < 0.05$ reject null hypothesis If $p > 0.05$ fail to reject the null hypothesis.
To examine the influence of project costs on finance mobilization for mega projects in Kenya's energy sector.	H ₀₂ : Project costs have no significant influence on finance mobilization for mega projects in Kenya's energy sector.	T-Test F-Test	If $p < 0.05$ reject null hypothesis If $p > 0.05$ fail to reject the null hypothesis
To establish the influence of financial goal orientation on finance mobilization for mega projects in Kenya's energy sector.	H ₀₃ : Financial goal orientation has no significant influence on finance mobilization for mega projects in Kenya's energy sector.	T-Test F-Test	If $p < 0.05$ reject null hypothesis If $p > 0.05$ fail to reject the null hypothesis
To determine the influence of stakeholder analysis on finance mobilization for mega projects in Kenya's energy sector.	H ₀₄ : Stakeholder analysis has no significant influence on finance mobilization for mega projects in Kenya's energy sector.	T-Test F-Test	If $p < 0.05$ reject null hypothesis If $p > 0.05$ fail to reject the null
To determine the moderating effect of annual budgeted project costs on the relationship between mega project characteristics and finance mobilization in Kenya's energy sector.	H ₀₅ : Annual budgeted project costs do not have significant moderating effect on the relationship between mega project characteristics and finance mobilization in Kenya's energy sector.	T-Test F-Test	If $p < 0.05$ reject null hypothesis If $p > 0.05$ fail to reject the null

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results of analyses of both primary and secondary data collected from various projects being undertaken by parastatals in Kenya. The first part covers the findings emanating from the data collected using structured questionnaires administered on key representatives of the aforementioned projects. These are followed by the results of secondary data analysis. The two key sections are in tandem with study variables which include financial risks, project costs, financial goal orientation, stakeholder analysis, annual budgeted project costs, and financial mobilization.

4.2 Response Rate

Response rate is defined as the proportion of the number of data collection instruments (say, questionnaires) which are filled in accordance with the instructions given vis-à-vis the total number of questionnaires initially issued to the respondents. In this study, a total of 32 questionnaires were issued to project managers who constituted the unit of observation. The managers were in charge of the 32 projects in the Ministry of Energy which were surveyed. All the aforesaid managers appropriately and completely filled the questionnaires administered on them. Therefore, the response rate was 100% which was absolutely within the acceptable and recommended threshold. The significantly high response rate was attributed to face-to-face administration of the questionnaires as opposed to engaging the services of research assistants or using postal or online surveys which would have lowered the response rate (Fosnacht, Sarraf, Howe, & Peck, 2017).

4.3 Results of Validity and Reliability Testing

The study determine the content validity of the data collection instrument (research questionnaire). Content validity is defined as the ability of the selected items (data items) to reflect the study constructs in the measure. In other words, this type of validity outlines the degree to which items of a data collection tool sufficiently represent the content domain (Newman, Lim, & Pineda, 2013). According to scholars, this validity cannot be tested statistically; instead expert opinion is sought to assess the extent to which the data collection tool addressed the objectives of a study (Kimberlin & Winterstein, 2008).

Moreover, content validity provides information on the representativeness and clarity of items besides assisting in improving the instrument through achieving expert recommendations (Polit & Beck, 2007). In determining the validity of the research questionnaires, the researcher sought the expert opinions of the three supervisors who had been assigned by the University to oversight the entire thesis. Another reason which necessitated determination of content validity stems from the scholarly assertion that if a data collection tool lacks this type of validity, it is impossible to establish its reliability (Zamanzade, et al., 2015).

Reliability is defined as a measure of consistency of a test. In this case, a reliable research questionnaire is one that can facilitate collection of similar data when administered on different study populations within the same target population. Testing the reliability of the research questionnaire concurred to the assertion that reliability is concerned with the faith that people (of interest) have in the data collected using the reliable instrument. Such instrument controls, to a high degree, the occurrence of random error (Haradhan, 2017). The results of the reliability testing are presented in Table 4.1.

Table 4.1: Results of Reliability Testing

Study Construct	Number of Test Items	Cronbach's Alpha Coefficient (α)
Financial risks	8	0.906
Project costs	7	0.939
Financial goal orientation	8	0.929
Stakeholder analysis	7	0.922
Financial mobilization	8	0.954
Overall reliability	38	0.930

According to the results shown in Table 4.1, it is evident that all the study constructs, that is, financial risks ($\alpha = 0.906$), project costs ($\alpha = 0.939$), financial goal orientation ($\alpha = 0.929$), stakeholder analysis ($\alpha = 0.922$) and financial mobilization ($\alpha = 0.954$) returned alpha values above the generally acceptable 0.7 mark. Indeed, the alpha values were above 0.9 mark, that is considered to reflect exceptional internal consistency (Cronbach, 1951) and were approaching to 1.0 mark, that is, absolute internal consistency (Tavakol & Dennick, 2011).

4.4 Primary Data Analysis

Primary data were collected from a sample of project managers working with various mega projects under the purview of parastatals in the energy sector in Kenya.

4.4.1 Descriptive Analysis

In this section, the views of a sample of project managers working with various projects under parastatals in the Kenya's energy sector are put into perspective. The data which had been collected were in regard to financial risks, project costs, financial goal orientation, stakeholder analysis, and financial mobilization. Moreover, the collected data were on a 5-point Likert scale where integers 1 to 5 represented strongly disagree (SD), disagree (D), undecided (U), agree (A), and

strongly agree (SA) respectively. The descriptive statistics captured in this analysis include percentages (%), means, and standard deviations (Std. Dev.).

a) Financial Risks in Energy Sector’s Parastatals

The views of project managers on financial risks in their respective parastatals were examined. The results to this effect are presented in Table 4.2.

Table 4.2: Descriptive Statistics for Financial Risks

	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. Dev.
Credit risk is significantly lowered by the state guaranteeing the loan facilities borrowed to finance mega projects.	0.0	3.1	0.0	78.1	18.8	4.88	.336
There have been regular complaints by suppliers regarding delayed payment for goods and services supplied to facilitate project implementation.	71.9	28.1	0.0	0.0	0.0	4.72	.457
Mega projects in energy sector are prone to significant economic risk since they take extended duration to complete	50.0	50.0	0.0	0.0	0.0	4.50	.508
The inflation rate fluctuation is a huge impediment to implementation of mega projects in our corporation.	34.4	59.4	0.0	6.3	0.0	4.22	.751
There are increased financial risks occasioned by litigation costs arising from non-payments to suppliers.	3.1	56.4	34.5	6.3	0.0	3.63	.591
Delayed payment to suppliers has led to increased interest costs.	21.9	34.4	3.1	28.1	12.5	3.25	1.414
Mega projects in energy sector are exposed to default risk due to lack of cash flows in the initial implementation stages.	0.0	3.1	0.0	78.1	18.8	1.88	.554
Interest rates on debt financing for mega projects are comparatively higher than local market rates.	0.0	0.0	0.0	46.9	53.1	1.47	.507

As shown in Table 4.2, majority (78.1%) of the sampled respondents disagreed that credit risk was significantly lowered by the state guaranteeing the loan facilities borrowed to finance mega projects. All (100.0%) of the surveyed project managers agreed that there had been regular complaints by suppliers regarding delayed payment for the goods and services supplied to facilitate project implementation. It was also observed that all the sampled managers (100%) agreed that mega projects in the energy sector were prone to significant economic risk since they took extended duration to complete. More so, 93.8% of the respondents admitted that inflation rate fluctuation was a huge impediment to implementation of mega projects in their corporation. The findings collaborated with those of a previous study conducted by Anton et al., (2011) which established that financial risks in construction projects encompassed inflation, lack of solvency and currency fluctuation which always resulted in financial loss.

More than half (59.5%) of the surveyed respondents agreed that there were increased financial risks occasioned by litigation costs which rose from non-payment to suppliers. However, 34.5% of the sampled staff were undecided. Additionally (56.3%) of the respondents registered their agreement with the opinion that delayed payment to suppliers had led to increased interest costs. The results of the analysis further indicated that 78.1% of the respondents disagreed that mega projects in the energy sector were exposed to lack of cash flows in the initial implementation stages. The results were contrary to those of an earlier analysis carried out by Mweeba (2015) which observed that most projects in the country were procured through debts and loans from foreign countries and international financial institutions which exposed them to default risk. Furthermore, slightly more than half (53.1%) of the participating staff strongly disagreed that interest rates on debt financing for mega projects were comparatively higher than local market rates.

It was further acknowledged that, on average, the respondents were in admission that credit risk was significantly lowered by the state guaranteeing the loan facilities borrowed to finance mega projects (mean = 4.88); there had been regular complaints by suppliers regarding delayed payment for goods and services supplied to facilitate project implementation (mean = 4.72); mega projects in the energy sector were prone

to significant economic risk since they took extended duration to complete (mean = 4.50); inflation rate fluctuation was a huge impediment to implementation of mega projects in their corporation (mean = 4.22); and that there were increased financial risks occasioned by litigation costs which rose from non-payment to suppliers (mean = 3.63). The views of respondents regarding the aforementioned assertions differed insignificantly (std dev < 1.000). In addition, the project managers were generally undecided pertaining the argument that delayed payment to suppliers had led to increased interest costs (mean = 3.25). In relation to this proposition, the opinions of the project managers differed significantly (std dev > 1.000). The managers generally disputed the argument that mega projects in the energy sector were exposed to lack of cash flows in the initial implementation stages (mean = 1.88), and that that interest rates on debt financing for mega projects were comparatively higher than local market rates (mean = 1.47). The surveyed project manager's views in respect of the foregoing assertions were closely similar (std dev < 1.000).

b) Project Costs in Energy Sector's Parastatals

In line with the second specific objectives, the study sought to understand various issues pertinent to costs incurred by projects being implemented by the parastatals in the energy sector. Therefore, the views of respective project managers were collected and analyzed. The results of the foregoing analysis are presented in Table 4.3.

Table 4.3: Descriptive Statistics for Project Costs

	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. Dev.
The initial costs for mega projects in our parastatals are often very high (more than Ksh 1 billion).	84.4	15.6	0.0	0.0	0.0	4.84	.369
The government takes care of viability gap funding for mega projects in our corporation.	25.0	75.0	0.0	0.0	0.0	4.25	.440
In my view, project costs are often inflated to the detriment of investors.	18.8	50.1	9.3	6.2	15.6	4.15	.745
The cost of finance is a major concern for investors in our parastatals.	21.9	62.5	9.4	6.3	0.0	4.00	.762
Mega projects undertaken by our parastatals often experience cost overruns.	34.4	46.9	0.0	18.8	0.0	3.97	1.062
Viability gap funding enables the mobilization of the private sector to take part in mega projects in our organization.	15.6	71.9	3.1	6.3	3.1	3.91	.856
Without external funding, it is largely difficult to raise the initial capital for mega projects in our parastatals.	84.4	15.6	0.0	0.0	0.0	3.88	1.212

The findings shown in Table 4.3 illustrate that all (100%) of the participating project managers registered their absolute agreement with the proposition that the initial costs for mega projects in the parastatals were often very high (more than Ksh 1 billion). The results were in line with those of a past study conducted by Shrestha et al., (2013) and which found that the estimated construction cost was \$1.85 billion. Asnakew (2016) also noted that the main challenge faced by the projects was the high investment cost. Similarly, all (100%) of the respondents concurred that the government took care of viability gap funding for mega projects in their corporation. It was also noted that most (68.9%) of the project managers admitted that project costs were often inflated to the detriment of investors. However, 15.6% of the respondents strongly disagreed to the assertion.

On the same vein, the study established that 84.4% of the respondents concurred that the cost of finance was a major concern for investors in their parastatals. Majority (81.3%) of the project managers agreed that mega projects undertaken by parastatals often experienced cost overruns. The findings concurred with those of a previous study conducted by Damoah (2015) which indicated that governments' projects in the country were characterized by cost overruns. Moreover, it was ascertained that 87.5% of the managers admitted that viability gap funding enabled the mobilization of the private sector to take part in mega projects in their organizations. The study further revealed that 100% of the project managers concurred with the view that without external funding it was largely difficult to raise the initial capital for mega projects in their parastatals.

The results also established that on average the respondents were in admission that the initial costs for mega projects in the parastatals were often very high (more than Ksh 1billion) (mean = 4.84); the government took care of viability gap funding for mega projects in their corporation (mean = 4.25); project costs were often inflated to the detriment of investors (mean = 4.15); and that the cost of finance was a major concern for investors in their parastatals (mean = 4.00). In reference to the foregoing assertions the opinions of project managers were largely similar (std dev < 1.000). On the same vein, the respondents averagely concurred that that mega projects undertaken by parastatals often experienced cost overruns (mean = 3.97). The respondents held largely differing views in light of the foresaid proposition (std dev > 1.000).

Moreover, the respondents were generally in agreement with the view that viability gap funding enabled the mobilization of the private sector to take part in mega projects in their organizations (mean = 3.91). In relation to the assertion the respondents' opinions differed insignificantly (std dev < 1.000). Regarding the assertion that without external funding it was largely difficult to raise the initial capital for mega projects in their parastatals the respondents generally concurred (mean = 3.88). The vies of respondents' regarding the assertion varied significantly (std dev > 1.000).

c) Financial Goal Orientation in Energy Sector's Parastatals

All projects being implemented by parastatals in the energy sector in Kenya have financial goals. In this respect, therefore, the opinions of respective project managers on financial goal orientation were sought and analyzed. The pertinent results are as shown in Table 4.4.

Table 4.4: Descriptive Statistics for Financial Goal Orientation

	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. Dev.
Our project is likely to take considerably long duration to recoup the initial capital.	78.1	21.9	0.0	0.0	0.0	4.78	.420
The project progress is monitored throughout.	56.3	43.8	0.0	0.0	0.0	4.56	.504
The project has clear goals for termly expenditures.	56.3	31.3	3.1	3.1	6.3	4.28	1.114
The project milestones in terms of funds used in executing various activities under the project are tracked on a regular basis.	21.9	62.5	6.3	9.4	0.0	3.97	.822
The implementation progress of the mega projects is evaluated quarterly (every three months) against projected goals.	31.3	37.5	0.0	25.0	6.3	3.63	1.338
Our project has clearly defined financial returns.	6.3	3.1	18.8	65.6	6.3	2.38	.907
There is a high likelihood that the predicted financial returns will be realized over the specific timelines.	3.1	6.3	21.9	12.5	56.3	1.87	1.157
Clear financial goals often reduce cost overruns in our project.	0.0	9.4	6.3	43.8	40.6	1.84	.920

It was found that all (100%) of the respondents concurred that mega projects were likely to take considerably long duration of time to recoup the initial capital. Accordingly, 100% of the participating project managers agreed that the project progress was monitored throughout. Regarding the opinion that the project had clear goals for termly expenditures most (87.6%) of the respondents agreed to the assertion

while rest held contrary opinions. It was also indicated that 84.4% of the respondents admitted that the project milestones in terms of funds used in executing various activities under the project were tracked on a regular basis. Only 9.4% of the staff disputed the proposition.

It was further observed that most (68.8%) of the projects managers were in agreement that the implementation of the mega projects was evaluated quarterly (every three months) against projected goals. Nonetheless, 31% of them disagreed and the rest were indifferent. On the same breadth, 65.6% of the sampled project managers disagreed that their projects had clearly defined financial returns. The study further acknowledged that 68.8% of the respondents disagreed to the assertion that there was a high likelihood that the predicted financial returns would be realized over the specified timelines. Moreover, 84% of the study respondents disagreed that clear financial goals often reduced cost overruns in their project. The findings differed with those of an earlier study carried out by Gharaibeh (2013) which acknowledged that clear understanding of the scope of work, documentation of assumptions made on the scope of work, staff retention, and alignment of the project with key project stakeholders were the main solutions that could help mitigate project costs.

The study further observed that on average the respondents were in agreement with the propositions that their project was likely to take considerably long duration to recoup the initial capital (mean = 4.78) and that the project progress was monitored throughout (mean = 4.56). With regard to the aforementioned views the respondents' views were largely similar (std dev < 1.000). More so, the sampled respondents generally admitted that the project had clear goals for termly expenditures (mean = 4.28). The respondents' views regarding the assertion varied significantly (std dev > 1.000).

On the same vein, the respondents averagely concurred that the project milestones in terms of funds used in executing various activities under the project were tracked on a regular basis (mean = 3.97); and that the implementation of the mega projects was evaluated quarterly (every three months) against projected goals (mean = 3.63). It

was also noted that on average the respondents disagreed with the assertion that their project had clearly defined financial returns (mean = 2.38). In light of the above views the respondents' opinions were differed insignificantly (std dev < 1.000). The respondents also disagreed with the assertion that there was a high likelihood that the predicted financial returns would be realized over the specified timelines (mean = 1.87). The sampled project manager's views pertaining the foregoing notion varied significantly (std dev > 1.000). Furthermore, it was established that, on average, the respondents disagreed that clear financial goals often reduced cost overruns in their project (mean = 1.84). In respect of the assertion the respondents held closely related views (std dev < 1.000).

d) Stakeholder Analysis in Energy Sector's Parastatals

Mega projects ordinarily have many and diverse stakeholders, each with their specific interests. Therefore, it is imperative to analyze the stakeholders in relation to projects being implemented. To this effect, the project managers' views on stakeholder analysis were examined. The relevant descriptive results are as illustrated in Table 4.5.

Table 4.5: Descriptive Statistics for Stakeholder Analysis

	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. Dev.
Projects being implemented by our parastatals have many and diverse stakeholders.	84.4	15.6	0.0	0.0	0.0	4.84	.369
To a large extent, the government agencies are the major stakeholders in our parastatals projects.	68.8	28.1	0.0	3.1	0.0	4.62	.660
The government plays a leading role in mobilizing funds from local and foreign sources.	59.4	25.0	3.1	12.5	0.0	4.31	1.030
The interests of stakeholders play a critical role in financial mobilization.	25.0	65.6	6.3	3.1	0.0	4.13	.660
Stakeholders have greatly varying influence over mobilization of project finances.	15.6	68.8	6.3	9.4	0.0	3.91	.777
All stakeholders contribute significantly towards funds mobilization.	3.1	9.4	3.1	62.5	21.9	2.09	.963
The major stakeholders equally possess the greatest power in relation to financial mobilization.	0.0	0.0	0.0	75.0	25.0	1.75	.440

The analyses of the respondents' opinions in relation to stakeholder analysis are shown in Table 4.3. All (100%) the respondents agreed to the view that projects being implemented by their parastatals had many and diverse stakeholders. A total of 96.9% of the sampled project managers concurred that, to a large extent, the government agencies were the major stakeholders in the projects under the purview of their parastatals. Only 3.1% of the respondents disputed the assertion. It was, however, revealed that most of the sampled project managers registered their agreement with the proposition that the government played a leading role in mobilizing funds from local and foreign sources. A significant number (90.6%) of the respondents admitted that the interests of stakeholders played a critical role in finance mobilization.

While majority (84.4%) of the respondents agreed that stakeholders have greatly varying influence over mobilization of project finances, about 9.4% of the respondents disputed this proposition. More than half (62.5%) of the sampled respondents disagreed that all stakeholders contributed significantly towards funds mobilization. The results were similar to those of a study conducted by Ratri (2016) which established that financial resource mobilization was weak due to the insufficient capacity of public and private stakeholders to pool financial resources for the purpose of enhancing the implementation of the project. Furthermore, it was observed that 75.5% of the participating respondents disagreed that the major stakeholders equally possessed the greatest power in relation to finance mobilization. The rest 25.0% strongly disagreed with the argument.

The respondents were generally in admission that projects being implemented by their parastatals had many and diverse stakeholders (mean = 4.84); and that to a large extent, the government agencies were the major stakeholders in their parastatals projects (mean = 4.62). Respondents' views in respect of the foregoing notions varied insignificantly (std dev < 1.000). On average the respondents were in admission that the government played a leading role in mobilizing funds from local and foreign sources (mean = 4.31). Regarding the proposition, the respondents' opinions were largely diverse (std dev > 1.000).

Moreover, the respondents generally concurred that the interests of stakeholders played a critical role in finance mobilization (mean = 4.13); and that stakeholders have greatly varying influence over mobilization of project finances (mean = 3.91). In light of the two arguments the respondents views were largely similar (std dev < 1.000). Additionally, the respondents generally disputed the assertions that all stakeholders contributed significantly towards funds mobilization (mean = 2.09); and that the major stakeholders equally possessed the greatest power in relation to finance mobilization (mean = 1.75). Pertaining the foregoing assertions the respondents opinions were closely related (std dev < 1.000).

e) Financial Mobilization in Energy Sector's Parastatals

Given the importance of finances in implementing mega projects, the views of project managers on mobilization of finances were sought. The distributions of the aforesaid managers' opinions on financial mobilization are presented in Table 4.6.

Table 4.6: Descriptive Statistics for Financial Mobilization

	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. Dev.
Our parastatal relies heavily on government funding to implement its mega projects through conditional grants in the budget.	78.1	21.9	0.0	0.0	0.0	4.78	.420
The financing of mega projects is augmented through commercial loans.	31.3	62.5	0.0	6.3	0.0	4.19	.738
Through the government, our parastatal is able to acquire concessional loans to fund mega infrastructural projects.	34.4	53.1	6.3	6.3	0.0	4.16	.808
Normally the conditional grants are sufficient to finance mega infrastructural projects in our parastatal.	21.9	56.3	6.3	6.3	0.0	3.84	.954
Amounts raised through issuance of bonds are a significant component of project funds.	25.0	53.1	3.1	3.1	15.6	3.69	1.330
Mega projects being implemented by our parastatal get substantial donor funding.	9.4	59.4	0.0	21.9	9.4	3.38	1.212
External loans from, say, the World Bank and IMF, enhance the implementation of mega infrastructural projects in our organization.	12.5	50.0	0.0	25.0	12.5	3.25	1.320
Our parastatal has benefitted from foreign direct investments in funding its mega infrastructural projects.	6.3	28.1	6.3	43.8	15.6	2.66	1.234

According to the results shown in Table 4.6 it was found that all (100%) the project managers admitted that their parastatals relied heavily on government funding to implement their mega projects through conditional grants in the budget. These

findings collaborated with those of a study conducted by Adama (2018) which revealed that public funds were used in the initial stage to facilitate the implementation of the project. Though, 93.8% of the respondents agreed to the assertion that the financing of the aforesaid projects was augmented through commercial loans, 6.3% held a contrary opinion. In respect of the view that through the government, the respective parastatals were able to acquire concessional loans to fund mega infrastructural projects, majority (87.5%) of the participating project managers concurred with the view. Moreover, 78.2% of the sampled respondents agreed that, normally, the conditional grants were sufficient to finance mega infrastructural projects in their parastatals.

It was also revealed that most (78.1%) of the respondents registered their agreement with the view that amounts raised through issuance of bonds were a significant component of project funds. However, 18.7% of the respondents disputed the assertion. Additionally, regarding the opinion that mega projects being implemented by respective parastatals got substantial donor funding, 68.8% of the sampled project managers were in agreement. However, a past study conducted by Mawenije *et al.*, (2017) noted that development in form of financing from donors such as grants have decreased significantly. Moreover, a total of 62.5% of the respondents admitted that external loans from, say, the World Bank and IMF, enhanced the implementation of mega infrastructural projects in energy sector's parastatals. It was also noted that 43.8% of the study respondents disagreed that their parastatals had benefitted from foreign direct investments in funding their mega infrastructural projects. Only 34.4% of the respondents were in concurrence.

The study further ascertained that, on average, respondents strongly agreed that parastatals in the energy sector relied heavily on government funding to implement their mega projects through conditional grants in the budget (mean = 4.78). More so the respondents were generally in admission that the financing of mega projects was augmented through commercial loans (mean = 4.19); through the government, the respective parastatals were able to acquire concessional loans to fund mega infrastructural projects (mean = 4.16); and that the conditional grants were often sufficient in financing mega infrastructural projects in the aforementioned parastatals

(mean = 3.84). In relation to the foregoing statements, the views of the project managers were largely similar (std dev < 1.000). In addition, the sampled managers generally concurred that amounts raised through issuance of bonds constituted a significant component of project funds (mean = 3.69). On average, the respondents were undecided regarding the views that mega projects being implemented by their respective parastatals got substantial donor funding (mean = 3.38); external loans from global financial bodies such as the World Bank and IMF enhanced the implementation of mega infrastructural projects in parastatals (mean = 3.25); and that the parastatals had benefitted from foreign direct investments in funding their mega infrastructural projects (mean = 2.66). The views of respondents regarding the aforementioned propositions were, however, largely diverse (std dev > 1.000).

4.4.2 Inferential Analysis

In this section, the results of Pearson's Product Moment Correlation and regression (simple linear and multiple) analyses are presented. The results are accompanied by pertinent interpretation and discussion. Prior to addressing the inferential analysis of the collected primary data, relevant diagnostic tests were conducted. In adherence to the merits of the data type (ordinal and discontinuous), only the tests for multicollinearity and linearity were effected. Other tests (normality, homoscedasticity and autocorrelation) were not feasible. The results of multicollinearity and linearity tests are presented in Table 4.7, Table 4.8, Table 4.9, Table 4.10, and Table 4.11 respectively.

Table 4.7: Results of Multicollinearity

Independent Variables	Collinearity Statistics	
	Tolerance	VIF
Financial Risks	.165	6.058
Project Costs	.169	5.920
Financial Goal Orientation	.156	6.417
Stakeholder Analysis	.760	1.316

Diagnostic tests conducted were aimed at assessing the extent of the multicollinearity problem amongst the predictor variables (mega project characteristics). The variance inflated factors (VIF) which represent the reciprocal of tolerance levels (T) are the parameters employed to test the extent of multicollinearity as shown in Table 4.7. The results of diagnostic tests presented in form of VIF, indicated that all the predictor variables (mega project characteristics) had minimal collinearity which was within the acceptable threshold of VIF not greater than 10 (Murray, Nguyen, Lee, Remmenga, & Smith, 2012). Financial risks and project costs returned VIF = 6.06 and VIF = 5.92 respectively while financial goal orientation and stakeholder analysis returned VIF = 6.42 and VIF = 1.32 in that order. Therefore, the assumption of minimal or little multicollinearity was effectively addressed which was a reflection of the acceptable independence of the predictor variables relative to the dependent variable.

Table 4.8: Linearity Test Results for Finance Mobilization against Financial Risks

			Sum of	Mean		
			Squares	df	Square	F Sig.
Finance mobilization	Between	(Combined)	23.910	24	.996	3.793 .038
Financial risks	* Groups	Linearity	20.065	1	20.065	76.395 .000
		Deviation from Linearity	3.844	23	.167	.636 .806
	Within	Groups	1.839	7	.263	
	Total		25.748	31		

According to the results of analysis of variance shown in Table 8, the F-calculated ($F_{calc} = 0.636$; $p = 0.806$) was found to be greater than the F-critical (F_{crit}) whose $p = 0.05$. Therefore, the deviation from linearity ($p = 0.806$) was established to be greater than the p-value of 0.05. The results led to the inference that there existed a linear relationship between financial risks and finance mobilization.

Table 4.9: Linearity Test Results for Finance Mobilization against Project Costs

			Sum of	Mean	F	Sig.
			Squares	df	Square	
Finance mobilization	Between	(Combined)	25.465	16	1.592	84.232 .000
* Project costs	* Groups	Linearity	21.271	1	21.271	1125.748 .000
		Deviation from Linearity	4.194	15	.280	14.798 .000
	Within	Groups	.283	15	.019	
	Total		25.748	31		

The deviation from linearity depicted in Table 4.9 ($F = 14.798$; $p = 0.00$) was found to be less than $p\text{-value} = 0.05$. This implied that the project costs variable was not linearly related to finance mobilization.

Table 4.10: Linearity Test Results for Finance Mobilization against Financial Goal Orientation

			Sum of	Mean	F	Sig.
			Squares	df	Square	
Finance mobilization	Between	(Combined)	24.699	25	.988	5.648 .019
* Financial orientation	* goal Groups	Linearity	20.283	1	20.283	115.959 .000
		Deviation from Linearity	4.416	24	.184	1.052 .522
	Within	Groups	1.049	6	.175	
	Total		25.748	31		

According to the results shown in Table 4.10, it is evident that the deviation from linearity presented by the F-statistic ($F = 1.052$; $p = 0.522$) was greater than the F-critical whose $p\text{-value} = 0.05$. Therefore, there existed a linear relationship between financial goal orientation and finance mobilization.

Table 4.11: Linearity Test Results for Finance Mobilization against Stakeholder Analysis

			Sum of	Mean		
			Squares	df	Square	F Sig.
Finance mobilization	Between	(Combined)	24.857	28	.888	2.990 .199
*	Stakeholder Groups	Linearity	9.315	1	9.315	31.378 .011
analysis		Deviation from	15.542	27	.576	1.939 .325
		Linearity				
		Within Groups	.891	3	.297	
		Total	25.748	31		

The results of test for linearity shown in Table 4.11 indicated that the F-value as represented by the deviation from linearity ($F = 1.939$; $p = 0.325$) was higher than the F-critical where $p\text{-value} = 0.05$. The results implied that stakeholder analysis and finance mobilization were linearly related.

a) Correlation Analysis

The Spearman rank correlation was used to determine the relationship between each of the mega project characteristics (that is, financial risks, project costs, financial goal orientation, and stakeholder analysis) and financial mobilization. The choice of this type of correlation was founded on the fact that the data in respect of each variable was ordinal/interval/discontinuous. According to reliable sources, Spearman correlation does require data to be continuous-level, that is, interval or ratio (Mukaka, 2012). This is due to the fact that it employs ranks as opposed to assumptions about the distributions of any two variables (independent and dependent). Therefore, it is feasible to examine the relationship between variables of ordinal measurement levels. Additionally, the Spearman correlation does not have to adhere to the assumptions of PPMCC such as linearity, heteroscedasticity, and multivariate normal distribution (Mukaka, 2012). The relevant results of Spearman rank correlation are presented in Table 4.12.

Table 4.12: Spearman Rank Correlation Matrix for Mega Project Characteristics and Financial Mobilization

Spearman's rho	Financial risks	Correlation	1.000				
		Coefficient					
		Sig. (2-tailed)	.				
	Project costs	Correlation	.700**	1.000			
		Coefficient					
		Sig. (2-tailed)	.000	.			
	Financial goal orientation	Correlation	.646**	.729**	1.000		
		Coefficient					
		Sig. (2-tailed)	.000	.000	.		
	Stakeholder analysis	Correlation	.380*	.316	.210	1.000	
		Coefficient					
		Sig. (2-tailed)	.032	.078	.249	.	
	Finance mobilization	Correlation	-.749**	-.821**	.695**	.570**	1.000
		Coefficient					
Sig. (2-tailed)		.000	.000	.000	.001	.	
		n	32	32	32	32	32

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

As shown in Table 4.12, it was revealed that there existed a negative, strong and statistically significant relationship between financial risks and financial mobilization ($r = -0.749$; $p = 0.00$) at 0.05 level of significance. These results meant that as financial risks increased, the greater the likelihood of having a reduction in finances mobilized by parastatals in the energy sector. Consequently, it was found to be imperative to ensure that the financial risks associated with mega projects in the aforesaid sector were at their minimum. This could potentially result in enhanced financial mobilization by the parastatals. In support to the foregoing results was an earlier study conducted by Anton et al, (2011) which revealed that financial risks always resulted in monetary loss which was likely to reduce financial mobilization.

The study also revealed as shown in Table 4.12 that, the relationship between project costs and financial mobilization was negative, strong and statistically significant at 0.05 level of significance ($r = -0.821$; $p = 0.00$). The results were interpreted to mean that increasing the costs of undertaking mega projects was likely to reduce mobilization of funds requisite to implement the said projects. Therefore, it was deemed crucial for parastatals in the energy sector to ensure that the projects they were implementing or were planning to initiate should have low costs. However, this observation differed with the findings of a previous study conducted by Omony (2017) which indicated that mega projects in the country had high budget appraisal of approximately Ksh 1 billion to Ksh 40 billion.

With regard to financial goal orientation and financial mobilization, the relationship between them, as illustrated in Table 4.12, was found to be positive, strong and statistically significant ($r = 0.695$; $p = 0.00$) at 0.05 level of significance. The results meant that clearer the financial goals of mega projects under the purview of parastatals in the energy sector, the greater the amounts of finances that could potentially be mobilized. Therefore, aligning the mega projects to explicit and achievable goals was bound to attract financiers such as donors, strategic partners and other key investors to inject funds to the aforesaid projects. These findings were in agreement with the observations made by a previous study conducted by Gharaibeh (2013) which established that a clear understanding of the scope of work, documentation of assumptions made on the scope of work, staff retention, and

alignment of the project with key project stakeholders were the main solutions that could help mitigate project costs.

As indicated in Table 4.12, the study further established that there existed a positive, strong and statistically significant relationship between stakeholder analysis and financial mobilization at 0.05 level of significance ($r = 0.570$; $p = 0.00$). Interpretatively, the more the interests of stakeholders were taken into consideration in mega projects, the higher the chances of mobilizing more funds. Some of the key stakeholders include the government of the day, donors, strategic partners or investors such as investment banks, and creditors. Taking the interests of these stakeholders seriously, therefore, could most likely encourage them to inject more funds to the projects. The findings were contrary with the results of a past study conducted by Maddaloni (2015) in South Africa which had indicated that the local community and local committees had a negative influence on the project. It was further noted that community engagement on mega projects would enhance time improvement and minimize costs during construction.

b) Regression Analysis

Both simple linear and multiple regression analyses were carried out. The objective was to examine the effect of individual mega project characteristics on financial mobilization of parastatals in the energy sector. In addition, the multiple regression analysis enabled determination of the combined effect of the aforesaid characteristics on financial mobilization of the parastatals.

i) Simple Linear Regression Analysis

Each of the characteristics of mega projects (that is, financial risks, project costs, financial goal orientation, and stakeholder analysis) was regressed against financial mobilization. The intent was to establish how each of the aforesaid characteristics affected mobilization of finances among parastatals in the energy sector. The pertinent results are as shown in Tables 4.13 to 4.24.

Table 4.13: Model Summary for Financial Risks against Financial Mobilization

Model	r	r Square	Adjusted R Square	Std. Error of the Estimate
1	-.883 ^a	.779	.772	.43523

a. Predictors: (Constant), Financial Risks

According to the results of coefficient of determination shown in Table 4.13 ($r^2 = 0.779$), it was evident that 77.9% of variability in financial mobilization among parastatals in the energy sector could be explained by the financial risks associated with mega projects. The remaining proportion of variation (22.1%) could be attributed to other factors which did not constitute this particular analysis.

Table 4.14: ANOVA for Financial Risks against Financial Mobilization

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	20.065	1	20.065	105.924	.000 ^a
Residual	5.683	30	.189		
Total	25.748	31			

a. Predictors: (Constant), Financial Risks

b. Dependent Variable: Financial mobilization

According to the results of F-statistics shown in Table 4.14, ($F_{1, 30} = 105.92$; $p = 0.00$) where $F_{crit} = 0.05$, the sample data used fitted the simple linear regression model ($Y = \beta_0 + \beta X_1 + \epsilon$). Therefore, it was feasible to use the aforesaid model to determine the effect of financial risks on financial mobilization among parastatals in the energy sector whose results are shown in Table 4.15.

Table 4.15: Regression Coefficients for Financial Risks against Financial Mobilization

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	-1.175	.484		-2.429	.021
Financial Risks	-1.286	.125	-.883	-10.292	.000

a. Dependent Variable: Financial Mobilization

According to the results of simple linear regression analysis shown in Table 4.15, the regression model ($Y = -1.175 - 1.286X_1$) meant that a unit change in financial mobilization was subject to -1.286 units of financial risks while other factors were held constant (-1.175). The effect of financial risks on financial mobilization was further established to be statistically significant ($t = -10.292$; $p = 0.00$) at p -value = 0.05.

Table 4.16: Model Summary for Project Costs against Financial Mobilization

Model	r	r- Square	Adjusted R Square	Std. Error of the Estimate
1	-.909 ^a	.826	.820	.38632

a. Predictors: (Constant), Project Costs

The results shown in Table 4.16 indicate that project costs could explain 82.6% of variance in financial mobilization ($r^2 = 0.826$). Other factors not addressed in this analysis explained the remaining 17.4% variability in project costs. These findings underlined the sheer importance of considering costs associated with mega projects when mobilizing financial resources to implement the said projects.

Table 4.17: ANOVA for Project Costs against Financial Mobilization

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	21.271	1	21.271	142.520	.000 ^a
Residual	4.477	30	.149		
Total	25.748	31			

a. Predictors: (Constant), Project Costs

b. Dependent Variable: Financial mobilization

It was further revealed by the test significance results shown in Table 4.17 ($F_{1, 30} = 142.52$; $p = 0.00$) at p -value = 0.05, that the sample data fitted the adopted simple regression model ($Y = \beta_0 + \beta X_2 + \varepsilon$). Therefore, the pertinent model was suitable in examining the effect of project costs on financial mobilization as shown in Table 4.18.

Table 4.18: Regression Coefficients for Project Costs against Financial Mobilization

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.629	.455		-3.579	.001
Project Costs	-1.333	.112	-.909	-11.938	.000

a. Dependent Variable: Financial mobilization

According to the findings shown in Table 4.18 ($Y = -1.629 - 1.333X_2$), it was revealed that for financial mobilization to be increased by a unit, project costs had to be reduced by 1.33 units while other factors were held constant. It was further indicated that the effect of project costs on financial mobilization amongst parastatals in the energy sector was statistically significant ($t = -11.94$; $p = 0.00$) at p -value =

0.05. The findings underlined the sheer importance of putting into consideration costs incurred in implementing mega projects when mobilizing funds for the same. This could have been attributed to the fact that investors would be interested in returns of a given project before inputting their finances. In determining the project returns associated costs must be factored in. Hence, such costs are consequential to financial mobilization.

Table 4.19: Model Summary for Financial Goal Orientation against Financial Mobilization

Model	r	r-Square	Adjusted R Square	Std. Error of the Estimate
1	.888 ^a	.788	.781	.42682

a. Predictors: (Constant), Financial Goal Orientation

The results of coefficient of determination ($r^2 = 0.788$) shown in Table 4.19 illustrate that financial goal orientation could explain 78.8% of variability in financial mobilization amongst parastatals in the energy sector in Kenya. Other factors not addressed by this study explained 21.2% of variation in financial goal orientation. This meant that aligning mega projects to specific financial goals was crucial in mobilizing funds to implement the aforesaid projects.

Table 4.20: ANOVA for Financial Goal Orientation against Financial Mobilization

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	20.283	1	20.283	111.335	.000 ^a
Residual	5.465	30	.182		
Total	25.748	31			

a. Predictors: (Constant), Financial Goal Orientation

b. Dependent Variable: Financial mobilization

The results of F-statistics, ($F_{1, 30} = 111.34$; $p = 0.00$) where p -value = 0.05, emanating from the analysis of variance (ANOVA) as illustrated in Table 4.20 indicated that the sample data used in the study fitted the regression model ($Y = \beta_0 + \beta X_3 + \varepsilon$).

Table 4.21: Regression Coefficients for Financial Goal Orientation against Financial Mobilization

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.066	.356		.185	.854
Financial Goal Orientation	.978	.093	.888	10.552	.000

a. Dependent Variable: Financial mobilization

The results shown in Table 4.21 revealed that a unit change in financial goal orientation was contingent to 0.978 unit change in financial goal orientation while other factors remained the same ($Y = 0.066 + 0.978X_3$). Additionally, the effect of financial goal orientation on financial mobilization was established to be statistically significant ($t = 10.552$; $p = 0.00$) at 0.05 level of significance. According to these results, it is instructive to infer that aligning mega projects to financial goals was of huge importance to mobilization of pertinent funds.

Table 4.22: Model Summary for Stakeholder Analysis against Financial Mobilization

Model	r	r Square	Adjusted R Square	Std. Error of the Estimate
1	.601 ^a	.362	.341	.74011

a. Predictors: (Constant), Stakeholder Analysis

The results shown in Table 4.22 indicated that 36.2% variability in financial mobilization could be attributed to stakeholder analysis ($r^2 = 0.362$). The remaining proportion (63.8%) of variance in financial mobilization could have been explained by other factors besides stakeholder analysis.

Table 4.23: ANOVA for Stakeholder Analysis against Financial Mobilization

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	9.315	1	9.315	17.006	.000 ^a
Residual	16.433	30	.548		
Total	25.748	31			

a. Predictors: (Constant), Stakeholder Analysis

b. Dependent Variable: Financial mobilization

The test significance results shown in Table 4.23 ($F_{1, 30} = 17.006$; $p = 0.00$) indicated that the sample data used fitted the pertinent simple linear regression model ($Y = \beta_0 + \beta_4 X_4 + \varepsilon$) at p -value = 0.05. This meant that the stated model could be used to examine the effect of stakeholder analysis on financial mobilization.

Table 4.24: Regression Coefficients for Stakeholder Analysis against Financial Mobilization

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.795	1.108		-.717	.479
Stakeholder Analysis	1.109	.269	.601	4.124	.000

a. Dependent Variable: Financial mobilization

According to the results shown in Table 4.24, a unit increase in financial mobilization required 1.109 unit increase in stakeholder analysis while other factors

were held constant ($Y = -0.795 + 1.109X_4$). The effect of stakeholder analysis on financial mobilization was further found to be statistically significant ($t = 4.124$; $p = 0.00$) at p -value = 0.05. Therefore, it was concluded that taking the interests of key stakeholders of mega projects into account was paramount in mobilizing finances by parastatals in the energy sector towards implementation of the aforesaid projects.

ii) Multiple Regression Analysis

In addition, all the characteristics of mega projects (that is, financial risks, project costs, financial goal orientation, and stakeholder analysis) were regressed against financial mobilization amongst parastatals in the energy sector. The primary objective was to assess the combine effect of these characteristics on financial mobilization. The pertinent results are illustrated in Table 4.25, Table 4.26, and Table 4.27 respectively.

Table 4.25: Regression Weights for Overall Model

Model	r	r Square	Adjusted R Square	Std. Error of the Estimate	Sig.
1	.952 ^a	.906	.892	.29885	.000

a. Predictors: (Constant), Financial Risks, Project Costs, Financial Goal Orientation, Stakeholder Analysis

According to the results shown in Table 4.25, the general correlation between mega project characteristics (financial risks, project costs, financial goal orientation, and stakeholder analysis) and financial mobilization was found to be positive, strong and statistically significant ($r = 0.952$; $p = 0.00$) at 0.05 level of significance. The results of coefficient of determination ($r^2 = 0.906$) indicated that 90.6% of variability in financial mobilization amongst parastatals in the energy sector could be explained by the studied mega project characteristics. The findings emphasize the critical role played by these characteristics in mobilizing financial resources required to implement mega projects in the energy sector in Kenya.

Table 4.26: Significance Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	23.337	4	5.834	65.326	.000 ^a
Residual	2.411	27	.089		
Total	25.748	31			

a. Predictors: (Constant), Financial Risks, Project Costs, Financial Goal Orientation, Stakeholder Analysis

b. Dependent Variable: Financial mobilization

The significance test results ($F_{4, 27} = 65.33$; $p = 0.00$) shown in Table 4.26 indicate that sample data used to determine the effect of mega project characteristics on financial mobilization fitted the adopted multiple regression model ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$). Therefore, it was feasible to analyze the effect of the aforesaid characteristics on financial mobilization amongst parastatals in the Kenya's energy sector.

Table 4.27: Results of Overall Model

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	-2.425	.498			-4.869	.000
Financial Risks	-.245	.211	-.168		-1.160	.256
Project Costs	-.547	.210	-.373		-2.603	.015
Financial Goal Orientation	.351	.164	.319		2.135	.042
Stakeholder Analysis	.417	.125	.226		3.349	.002

b. Dependent Variable: Financial Mobilization

The results of overall model shown in Table 4.22 are with regard to regression or beta coefficients which illustrate the extent to which the individual mega project characteristics affect financial mobilization when examined together. The results (t-statistics) also illustrate the significance or lack thereof of the effect of mega project characteristics on finance mobilization. The beta coefficients were used to substitute the following multiple regression model.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where β_0 , β_1 to β_4 and ε represent constant, beta coefficients of predictor or independent variables, and error term or precision level.

The above model is substituted as follows:

$$Y = -2.425 - 0.245X_1 - 0.547X_2 + 0.351X_3 + 0.417X_4$$

The above equation was consequently interpreted to mean that a unit (1) change in financial mobilization required changes of -0.245 unit, -0.547 unit, 0.351 unit, and 0.417 unit in financial risks, project costs, financial goal orientation and stakeholder analysis respectively while other factors ($\beta_0 = -2.425$) were held constant. In terms of magnitude, though with negative consequences, project costs were found to have the greatest effect on financial mobilization amongst parastatals in the energy sector. Financial risks, on the other hand, were found to have the least on mobilization of finances. The study further observed that, at p-value = 0.05, project costs (t = -2.603; p = 0.015), financial goal orientation (t = 2.135; p = 0.042), and stakeholder analysis (t = 3.349; p = 0.002) had statistically significant effect on financial mobilization. However, the effect of financial risks on the aforesaid mobilization of financial resources was established not to be statistically significant (t = -1.160; p = 0.256) at p-value = 0.05. Therefore, from substantive perspective, it was imperative to deduce that financial risks were the least important characteristic of mega projects particularly in energy sector's parastatals. This could have been attributed to the fact that such projects face minimal financial risks given that they largely enjoy the government's guarantee. However, project costs, which were observed to be the most

critical characteristics are often common in mega projects. This is premised on the argument that majority of these projects are associated with cost overruns.

4.5 Secondary Data Analysis

Secondary data were collected from audited financial reports of parastatals undertaking mega projects whose initial capital exceeds Ksh 1 billion. The organizations from which the data were collected included GDC, KenGen, Kentraco, KPLC, REA, and Kenya Nuclear Board Board. The results, interpretations and discussion herein are relative to descriptive statistics and inferential statistics. Descriptive statistics have taken the form of range, mean, standard deviation, variance, skewness and kurtosis. On the other hand, inferential statistics are in form of correlation analysis, simple linear regression analysis and multiple linear regression analysis. The results are presented in tabular and graphical forms, that is, in form of tables and figures.

4.5.1 Descriptive Analysis

The major objective of descriptive analysis was to describe the phenomena, that is, the mega project characteristics and financial mobilization. The individual factors parameterizing the aforesaid phenomena were analyzed. These included the various indicators under each of the six study constructs (financial risks, project costs, financial goal orientation, stakeholder analysis, budgeted project costs and financial mobilization). The results of descriptive statistics are summarized in Table 4.28. It is important to note that the figures are indicated in billions Kenya shillings.

Table 4.28: A Summary of Descriptive Statistics for Mega Project Characteristics, Budgeted Project Costs and Financial Mobilization

	n	Min	Max	Mean	Std. Dev	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Forex gain/loss	7	-9.00	1.65	-0.45	3.81	-2.53	0.79	6.53	1.59
Interest rate	7	11.92	18.30	14.07	2.29	1.26	0.79	0.82	1.59
Exchange rate	7	88.00	103.10	100.30	5.43	-2.62	0.79	6.90	1.59
Average Initial Capital	7	2.62	32.84	24.82	10.32	-2.13	0.79	4.85	1.59
Finance Costs	7	1.10	2.43	1.68	0.44	0.57	0.79	0.51	1.59
Sales/Assets Ratio	7	0.12	5.30	2.13	2.18	0.49	0.79	-1.98	1.59
Networth of Firm	7	70.09	183.71	113.32	43.71	0.63	0.79	-1.07	1.59
Average Payback period	7	7.17	7.33	7.21	0.06	1.95	0.79	3.80	1.59
Working Capital Ratio	7	0.99	2.16	1.73	0.42	-0.74	0.79	.034	1.59
Profit before taxation	7	2.95	14.69	6.16	3.94	2.17	0.79	5.16	1.59
Taxation for the year	7	0.47	3.53	1.94	1.05	0.13	0.79	-0.78	1.59
Profits generated Annually	7	2.48	4.94	3.49	0.84	0.85	0.79	0.14	1.59
Debt/Equity Ratio	7	0.16	7.73	2.09	2.55	2.38	0.79	6.01	1.59
Earnings Per Share	7	0.29	5.42	2.75	1.67	0.41	0.79	0.25	1.59
Dividend Per Share	7	0.17	1.00	0.39	0.28	2.12	0.79	4.87	1.59
Z-Score Coefficient	7	0.56	5.33	2.39	1.91	0.724	0.79	-1.35	1.59
Budget Funding GoK	7	0.83	6.02	3.99	2.47	-0.52	0.79	-2.32	1.59
Equity Finance	7	10.53	60.19	35.46	16.59	0.10	0.79	-0.36	1.59
Commercial Loans	7	1.35	13.20	8.08	4.30	-0.24	0.79	-0.78	1.59
Concessional loans	7	0.00	5.26	2.95	2.01	-0.31	0.79	-1.52	1.59
Bank Overdrafts	7	2.15	46.82	9.79	16.36	2.63	0.79	6.91	1.59
Annual Budgeted Project Costs	7	2.62	14.50	7.43	4.39	0.81	0.79	-0.68	1.59

The indicators of financial risks as shown in Table 4.28 included forex gain or loss, interest rate, and exchange rate. Project costs were represented by average initial capital and finance costs. Sales-to-assets ratio, networth of firm, average payback period, working capital ratio and profit before taxation were indicators of financial goal orientation. Stakeholder analysis was operationalized by taxation for the year, profits generated annually, debt-to-equity ratio, earnings per share and dividend per share. The Altman Z-score was employed as an aggregate of the aforesaid indicators of stakeholder analysis. Commercial loans, concessional loans and bank overdrafts characterized financial mobilization. Total loans have been calculated as a sum of both commercial and concessional loans given that they constitute the key borrowings of parastatals including those in the energy sector.

The results shown in Table 4.28 depicted that the range, mean, standard deviation and variance were largely dependent on the magnitude of each of the indicators under mega project characteristics and financial mobilization. With regard to financial risks, exchange rate had the biggest range, mean and standard deviation at 15.10B, 100.30B and 5.43B respectively. On the other hand, interest rate had the smallest range at 6.38 and 2.29B respectively with foreign gain or loss indicating the smallest mean at -0.45B. On project costs, average initial capital was the better indicator as opposed to finance costs given its relatively higher values of range (30.22), mean (24.82) and standard deviation (10.32).

In relation to financial goal orientation, average payback period had the least range (0.16), mean (7.21) and standard deviation (0.06). It is clear that the aforesaid variable had the least variance across the six parastatals and 7 years from which the survey data was obtained. On average, the working capital ratio which is obtained by dividing current assets against current liabilities was found to be 1.73 (mean = 1.73). The findings implied that the parastatals in the energy sector had optimal short-term liquidity and, as such, they were on stable financial position due to their positive working capital.

On stakeholder analysis, dividend per share had the least values of range (0.83), mean (0.39) and standard deviation (0.28). The Altman Z score theory was employed

to assess the aggregate financial health of the parastatals with the view of determining whether or not there were organizations which were facing financial distress. The average Z-score for the six entities over the 7 years' survey period was 2.39. This meant that the parastatals were generally in the 'grey zone' and had a moderate probability of filing for bankruptcy. As illustrated by the standard deviation for the Z-score (std dev. = 1.91), while some of the surveyed parastatals were in the 'safe zone', that is, Z values greater than 2.99 (maximum = 5.33) others were in the 'distress zone', that is, Z values below 1.81 (minimum = 0.56). Interpretatively, albeit the fact that there were some parastatals which had negligible probability of filing for bankruptcy, there were others in the energy sector that had a very high chance of reaching the stage of bankruptcy.

With regard to financial mobilization, it was established that parastatals in the Kenya's energy sector often and most regularly depended on either commercial loans or concessional loans or both. This notwithstanding, some parastatals in the energy sector obtained funding from government's budgetary allocation, equity finance while others sought for bank overdrafts. On this note, therefore, commercial loans and concessional loans were summed up to obtain total loans which were subsequently used to represent financial mobilization. It is important to note that equity financing constituted the largest source of finance for the aforesaid parastatals (mean = 35.46 billion)

Both skewedness and kurtosis were used to measure the distribution of various data sets analyzed in the study. Skewness is a measure of asymmetry. Kurtosis is a measure of whether or not the sample data are heavy-tailed or light-tailed in relation to a normal distribution, that is, the 'peakedness of a distribution' (Kim, 2013).

Regarding uniform distribution of data, the results of skewness for annual taxation (0.13) and equity finance (0.10) were closest to zero. This implied that the distribution of data on these two factors was the most symmetric and normally distributed since it was closest to zero mark. On the other hand, data on bank overdrafts was the most skewed (to the right) with a skewness margin of 2.63. The evidently high skewness could have been attributed to the findings that the data on

bank overdrafts across the six parastatals over the seven years' period was multimodal. This was further supported by the very large deviation from the mean (std dev. = 16.36).

With the lowest kurtosis (kurtosis = 0.14) data sets on profits generated annually had the least number of outliers and were, therefore, the most uniformly distributed. The fact that bank overdrafts were found to have the highest kurtosis (kurtosis = 6.91) which meant that the data sets on this construct were not normally distributed.

4.5.2 Correlation Analysis

Correlation analysis was carried out to examine the relationship between various characteristics of mega projects and financial mobilization in six parastatals. The studied characteristics were financial risks, project costs, financial goal orientations, and stakeholder analysis. Pearson's Product Moment Correlation Coefficient (PPMCC) was used to assess the relationship between the aforesaid variables. To determine the relationship between the aforesaid constructs, PPMCC was used and the results are as shown in Table 4.29. The choice of this type of correlation was informed by the fact that it is the most recommended correlation when the data in respect of both independent and dependent variables is normally distributed (Mukaka, 2012). The secondary data in this context was established to adhere to the normality assumption, hence the suitability of PPMCC.

Table 4.29: PPMCC Matrix between Mega Project Characteristics and Financial Mobilization

				Interest Rate (Financial Risk)	Average initial capital (Project Costs)	Average Payback Period (Financial Goal Orientation)	Profits Generated Annually (Stakeholder Analysis)	Total Loans (Financial Mobilization)
Interest Rate (Financial Risk)	Pearson Correlation	1	.089	-.525	-.499	-.392		
	Sig. (2-tailed)		.849	.227	.255	.384		
Average initial capital (Project Costs)	Pearson Correlation	.089	1	-.818*	.448	-.933**		
	Sig. (2-tailed)	.849		.025	.314	.002		
Average Payback Period (Financial Goal Orientation)	Pearson Correlation	-.525	-.818*	1	-.046	.901**		
	Sig. (2-tailed)	.227	.025		.923	.006		
Profits Generated Annually (Stakeholder Analysis)	Pearson Correlation	-.499	.448	-.046	1	-.374		
	Sig. (2-tailed)	.255	.314	.923		.408		
Total Loans (Financial Mobilization)	Pearson Correlation	-.392	-.933**	.901**	-.374	1		
	Sig. (2-tailed)	.384	.002	.006	.408			
	n	7	7	7	7	7		7

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The indicator that was used to represent financial risk, as shown in Table 4.29, was interest rate charged on borrowed funds whereas financial mobilization was parameterized by total loans (that is, the sum of concessional loans and commercial loans). According to the correlation results, it is evident that there existed negative, weak but not statistically significant relationship between interest rate and total loans ($r = -0.392$; $p = 0.384$) at p -value = 0.05. The results meant that by increasing financial risk (interest rate), there was minimal likelihood to substantially reduce total loans borrowed by parastatals in the energy sector.

The study further examined how project costs incurred by parastatals in the energy sector were related to financial mobilization. The projects costs were operationalized by average initial capital of respective projects whereas financial mobilization was in form of total loans borrowed by the parastatals. The pertinent PPMCC results are illustrated in Table 4.29. It was revealed that the relationship between average initial capital and total loans was negative, weak and statistically significant at 0.05 level of significance ($r = -0.933$; $p = 0.002$). The results were interpreted to mean that increasing the average initial capital of mega projects (project costs) was likely to reduce the concessional and commercial loans borrowed by parastatals in the energy sector to not only a large extent but also the reduction was substantial. Therefore, the costs of the aforesaid projects were largely consequential to the loans borrowed by the stated organizations.

In addition, the relationship between financial goal orientation and financial mobilization was analyzed using PPMCC. The indicators of the aforementioned variables were average payback period and total loans respectively. The results of correlation analysis are presented in Table 4.29. They indicated that there existed a positive, strong and statistically significant relationship between average payback period (representing financial goal orientation) and total loans (representing financial mobilization) at 0.05 level of significance ($r = -0.901$; $p = 0.006$). The results meant that increment in financial goal orientation was likely to lead to a large increment in total loans amongst parastatals in the Kenya's energy sector. The findings were interpreted to mean that financial goal orientation, that is, the adherence to mega goals with financial connotation, was likely to play an important role in mobilization

of finances needed to address mega infrastructural projects being undertaken by the aforesaid parastatals.

In line with the fourth specific objective, the study sought to examine the relationship between stakeholder analysis and financial mobilization in parastatals under the Kenya's energy sector. Stakeholder analysis was operationalized using profits generated annually by each of the aforementioned parastatals. This was informed by the fact that stakeholders of the said parastatals are most concerned with the profits generated since such mirrors the performance of the organization. The benefits realized by stakeholders are contingent to the organizational performance particularly financial performance whose one of the key indicators is profitability. Similar to previous cases, financial mobilization was composed of total loans (concessional and commercial loans). The results shown in Table 4.29 illustrate the correlation between stakeholder analysis (parameterized by profits generated annually) and financial mobilization (operationalized by total loans).

The study found that, there existed a negative, moderately strong and statistically not significant relationship between profits generated annually and total loans at 0.05 level of significance ($r = -0.374$; $p = 0.408$). Interpretatively, increase in profits generated annually by the parastatals in the energy sector was likely to moderately reduce the total loans borrowed. However, the implications of the aforesaid profit generation were not likely to result in increased borrowings in form of both commercial and concessional loans. Therefore, a greater emphasis to the (short-term) interests of stakeholders was not likely to curtail the amount of finances mobilized, particularly through commercial and concessional loans by the aforementioned parastatals. Advisably, these stakeholders of the parastatals ought to reduce their focus on increasing the generated profits (especially within the year) in order to have more funds mobilized to address mega infrastructural projects. However, these parastatals should direct more of their resource mobilization energies to other mega project characteristics as opposed to annual profits generated by the parastatals.

4.5.3 Simple Linear Regression Analysis

Simple linear regression analysis was conducted to determine the effect of each of the mega project characteristics (financial risks, project costs, financial goal orientation, and stakeholder analysis) on financial mobilization. Similar to the correlation analysis, the aforementioned study constructs were operationalized using interest rate, average initial capital, profit before taxation, profit generated annually, and total loans respectively.

a) Effect of Financial Risks on Financial Mobilization

The results of simple linear regression analysis indicating the effect of financial risks (interest rate) on financial mobilization (total loans) are shown in Table 4.30 and Table 4.31 respectively.

Table 4.30: Model Summary of Interest Rate on Total Loans

Model	r	r Square	Adjusted r-Square	Std. Error of the Estimate
1	.392 ^a	.154	-.015	14.15030

a. Predictors: (Constant), Interest rate

The results of coefficient of determination ($r = 0.392$) shown in Table 4.30 indicated that interest rate which was an indicator of financial risks explained ($r^2=15.4\%$) variance in total loans (financial mobilization). A larger percentage (84.6%) of the aforesaid variance was attributed to other issues besides interest rate. The negative adjusted r-square (-0.015) implied that the adopted simple linear model did not fit the collected secondary data.

Table 4.31: Simple Regression Analysis of Interest Rate on Total Loans

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	182.273	1	182.273	.910	.384 ^a
Residual	1001.155	5	200.231		
Total	1183.427	6			

a. Predictors: (Constant), Interest rate

b. Dependent Variable: Total Loans

The analysis of variance (ANOVA) shown in Table 4.31 indicate the results of F-statistics, $F(1, 5) = 182.273$; $p = 0.384$) where the shown F-value was found not to be statistically significant at $p\text{-value} = 0.05$. Besides leading to the inference that the sample data used in the study did not fit the pertinent simple linear regression model ($Y = \beta_0 + \beta_1 X_1 + \epsilon$), the results meant that the null hypothesis which had stated that: There is no significant effect of financial risks on financial mobilization in parastatals in Kenya's energy sector was not rejected. Instead, the aforesaid hypothesis was considered to be true. Further interpretation from the findings was that interest rate did not play a critical role in determining the total loans borrowed either from commercial sources like banks or through concessional loans.

b) Effect of Project Costs on Financial Mobilization

In addition, the study examined the extent to which costs of mega projects affected financial mobilization amongst parastatals in the energy sector in Kenya. Average initial capital and total loans were used as the indicators of project costs and financial mobilization respectively. The results of simple regression analysis are presented in Table 4.32, Table 4.33 and Table 4.34 in that order.

Table 4.32: Model Summary of Average Initial Capital on Total Loans

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.933 ^a	.870	.844	5.54853

a. Predictors: (Constant), Average Initial Capital

The results of coefficient of determination shown in Table 4.32 ($r^2 = 0.870$) indicated that 87.0% of variability in financial mobilization (total loans) could be attributed to project costs (average initial capital) while 13.0% was linked to other factors. The findings implied that project costs played a key role in influencing how parastatals in the energy sector procured funds to implement their mega projects.

Table 4.33: Simple Regression Analysis of Average Initial Capital on Total Loans

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1029.496	1	1029.496	33.440	.002 ^a
Residual	153.931	5	30.786		
Total	1183.427	6			

a. Predictors: (Constant), Average Initial Capital

b. Dependent Variable: Total Loans

The F-value as shown in Table 4.33 was established to be statistically significant at 0.05 level of significance ($F_{1, 5} = 33.440$; $p = 0.002$). According to these results, the second null hypothesis, which stated that the effect of project costs on financial mobilization was not significant, was rejected. Additionally, the results were illustrative of the fact that the sample data used could fit the pertinent simple regression model. Hence, the model could be applicable in analyzing the beta coefficients (the effect) of project costs (average initial capital) on financial mobilization (total loans) as shown in Table 4.34.

Table 4.34: Beta Coefficients of Average Initial Capital on Total Loans

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	47.328	5.837		8.108	.000
Average Initial Capital	-1.269	.219	-.933	-5.783	.002

a. Dependent Variable: Total Loans

The results shown in Table 4.34 indicated that in line with the pertinent simple linear regression model ($Y = \beta_0 + \beta_2 X_2 + \epsilon$), interpreted thus; $Y = 47.328 - 1.269X_2$, a unit change in financial performance (total loans) was subject to -1.269 unit change in average initial capital while holding other factors constant ($\beta_0 = 47.328$). The effect of average initial capital (project costs) on total loans (finance mobilization) found to be statistically significant ($t = -5.783$; $p = 0.02$) at $p\text{-value} = 0.05$.

c) Effect of Financial Goal Orientation on Financial Mobilization

As earlier indicated, financial goal orientation and financial mobilization have been operationalized using average payback period and total loans respectively. The results of simple linear regression analysis are presented in Table 4.35, Table 4.36 and Table 4.37 in that order.

Table 4.35: Model Summary of Average Payback Period on Total Loans

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.901 ^a	.812	.774	6.66981

a. Predictors: (Constant), Average Payback Period

According to the results shown in Table 4.35 ($r^2 = 0.812$), average payback period, which represented financial goal orientation, explained 81.2% of variability in total

loans (parameter of financial mobilization) while 18.8% of the variance was due to other factors besides average payback period. The results underlined the very major role played by aligning mega projects to the overall financial goals of parastatals when seeking finances to fund the aforesaid projects.

Table 4.36: Simple Regression Analysis of Average Payback Period on Total Loans

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	960.995	1	960.995	21.602	.006 ^a
Residual	222.432	5	44.486		
Total	1183.427	6			

a. Predictors: (Constant), Average Payback Period

b. Dependent Variable: Total Loans

The results of ANOVA shown in Table 4.36 indicated the value of F-statistics ($F_{1,5} = 21.602$; $p = 0.006$) was statistically significant at $p\text{-value} = 0.05$. This meant that the sample data fitted the adopted simple linear regression model ($Y = \beta_0 + \beta_3 X_3 + \epsilon$), and therefore, the model could feasibly be employed to examine the effect of financial goal orientation on financial mobilization in parastatals in the Kenya's energy sector. From the statistical results, the third null hypothesis which stated that: There is no significant effect of financial goal orientation on financial mobilization in the aforesaid parastatals, was rejected. The alternate hypothesis was deemed to be true since financial goal orientation played a substantive role in mobilization of funds through commercial and concessional loans as shown in Table 4.37.

Table 4.37: Beta Coefficients of Average Payback Period on Total Loans

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	-1519.364	330.315			-4.600	.006
Average Payback period	213.052	45.839	.901		4.648	.006

a. Dependent Variable: Total Loans

As indicate in Table 4.37, it was observed that a unit change in total loans required 213.052 unit changes in average payback period while other factors were held constant. The effect of average payback period on finance mobilization represented by total loans was found to be statistically significant at p-value = 0.05 (t = 4.648; p = 0.006).

d) Effect of Stakeholder Analysis on Financial Mobilization

Profits generated annually and the sum of concessional and commercial loans were used as the primary indicators of stakeholder analysis and financial mobilization respectively. In line with the foregoing, a simple linear regression analysis was used to measure the extent to which stakeholder analysis affected mobilization of finances for mega projects in parastatals under the Kenya's energy sector. The results to this effect are presented in Tables 4.38 and 4.39.

Table 4.38: Model Summary of Profits Generated Annually on Total Loans

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.374 ^a	.140	-.032	14.26653

a. Predictors: (Constant), Profits generated Annually

The results shown in Table 4.38 ($r^2 = 0.140$) illustrated that only 14.0% of variance in finance mobilization (total loans) could be accredited to profits generated annually (stakeholder analysis). A large variation in finance mobilization was as a result of other factors besides the aforementioned profits. The negative value of adjusted r square (-.032) was interpreted to mean that the simple linear regression model did not fit the collected sample data. The aforesaid is supported by the results and interpretation of F-statistics as shown in Table 4.39. Therefore, stakeholder analysis was established to be minimally important in mobilizing finances for mega projects being undertaken by parastatals in Kenya's energy sector.

Table 4.39: Simple Regression Analysis of Profits Generated Annually on Total Loans

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	165.758	1	165.758	.814	.408 ^a
Residual	1017.669	5	203.534		
Total	1183.427	6			

a. Predictors: (Constant), Profits Generated Annually

b. Dependent Variable: Total Loans

The results shown in Table 4.39 ($F_{1,5} = 0.814$; $p = 0.408$) indicated that the value of F-statistic was not statistically significant at $p\text{-value} = 0.05$. This was interpreted to mean that the sample data used in the survey did not fit the simple linear regression model ($Y = \beta_0 + \beta_4 X_4 + \epsilon$) adopted with regard to the fourth specific objective. The results further meant that the fourth null hypothesis which stated that : There is no significant effect of stakeholder analysis on financial mobilization in parastatals in Kenya's energy sector was not rejected. Instead, it was taken to be true.

4.5.4 Multiple Linear Regression Analysis

In order to determine the combined effect of characteristics of mega projects (financial risks, project costs, financial goal orientation, and stakeholder analysis) on financial mobilization, multiple linear regression analysis was carried out. As earlier explained, the aforementioned characteristics of mega projects are represented by interest rate, average initial capital, average payback period and profit generated annually respectively while financial mobilization is parameterized by total loans. The first step in multiple regression analysis was to conduct model post-estimation diagnostic tests in order to assess the extent to which the multiple regression assumptions of multicollinearity, serial correlation, normality and homoscedasticity were adhered to.

a) Model Pre-Estimation Diagnostic Tests

Prior to conducting the multiple regression analysis, it was assumed that the data would have minimal or no multicollinearity problems; have little or no autocorrelation or serial correlation; be linear; be normally distributed; and have homoscedasticity, that is, the variance of error terms would be similar across the values of the predictor variables. The feasibility or applicability of the aforementioned assumptions was based on the fact that the data collected and analyzed was secondary and continuous.

i) Multicollinearity Test

Multicollinearity or multicollinearity problems normally arise from high correlation amongst independent variables. This means that the effect of any independent variable on the dependent variable is highly influenced by the other independent variable or variables. The foregoing may lead to redundant results. In order to determine the extent of multicollinearity in multiple regression model, variance inflated factors (VIF) which are reciprocal to tolerance level (T) are used. The acceptable multicollinearity threshold is VIF equal to or less than 10 (Hair, Anderson, Tatham, & Black, 1995) while recent scholars argue that it should not

exceed $VIF = 5$ (Salmerón , García , López , & García, 2016). In respect of the present study, the results of multicollinearity test are illustrated in Table 4.40.

Table 4.40: Multicollinearity Test Results

Independent Variables	Collinearity Statistics	
	Tolerance	VIF
Financial risks (interest rate)	.355	2.818
Project costs (average Initial Capital)	.127	7.848
Financial goal orientation (average payback period)	.114	8.768
Stakeholder analysis (profits generated annually)	.462	2.167

Dependent Variable: Total Loans

According to the results shown in Table 4.40, the four independent variables returned VIF less than 10 (interest rate, $VIF = 2.82$; average initial capital, $VIF = 7.85$; average payback period, $VIF = 8.77$; profits generated annually, $VIF = 2.17$). Therefore, all the predictor variables were found to meet the acceptable threshold (Hair et al., 1995). This implied that the data obtained was not redundant, rather, it was feasible for use in multiple regression analysis.

ii) Autocorrelation Test

Autocorrelation is also referred to as serial correlation and involves panel or lagged data. It is defined as the extent to which correlation is exhibited between values of the same variables across different observations in the data. In other words, it is the phenomenon created by correlated errors in linear regression models where time series data is involved. Incorrect specification of the regression model may give rise to autocorrelation (Babatunde, Ikughur, Ogunmola, & Oguntunde, 2014). Serial correlation is measured using the Durbin Watson (DW) statistic. Autocorrelation test was deemed necessary in this study because the data that was being analyzed spanned a period of 7 years, that is, years 2012/13 to 2018/19. The pertinent autocorrelation results are as shown in Table 4.41.

Table 4.41: Serial Correlation Test Results

Model	Durbin-Watson
1	2.415

a. Predictors: (Constant), Interest Rate, Average Initial Capital, Average Payback Period, Profits Generated Annually

b. Dependent Variable: Total Loans

According to the results shown in Table 4.41, it is evident that in a range of 0 to 4 and median of 2, the deviation from the median was found to be 0.415. The relatively small negative autocorrelation implied that there was minimal randomness of the values of the factors or constructs under survey. The negative serial correlation results implied that there was a greater likelihood the studied factors (interest rate, average initial capital, average payback period, profits generated annually and total loans) were likely to increase or rise over subsequent years.

iii) Linearity Test

The collected data was assumed to be facilitate linear relationships between each of the independent variables (interest rate, average initial capital, average payback period and profits generated annually) and the dependent variable (total loans). The assumption holds that there is a straight line relationship between two variables (independent and dependent). It is advisable to address the variable which raises the issue of non-linearity (Osborne, 2012). This assumption was necessary in conducting multiple linear regression analysis of the collected data. To this effect, linearity test was carried out and the pertinent results are presented in Table 4.42.

Table 4.42: Linearity Test Results

				Sum of		Mean		
				Squares	df	Square	F	Sig.
Total	Loans	* Between	(Combined)	1146.159	3	382.053	30.754	.009
Average	Payback	Groups	Linearity	960.995	1	960.995	77.358	.003
period			Deviation from	185.164	2	92.582	7.453	.069
			Linearity					
			Within Groups	37.268	3	12.423		
			Total	1183.427	6			

It is apparent that the test for linearity applied only to the relationship between average payback period and total loans. However, the linearity between other mega project characteristics (that is, interest rate, average initial capital, and profits generated annually) could not be computed. The aforesaid shortcoming was brought about by too few cases in respect of the three predictor variables. According to the results shown in Table 4.42, the F-calculated ($F_{calc} = 7.453$; $p = 0.069$) was found to be greater than the F-critical (F_{crit}) whose $p = 0.05$. Therefore, given that the ANOVA results (Table 4.42) illustrated a deviation from linearity of $0.069 > 0.05$, it was concluded that there was linear relationship between average payback period and total loans.

iv) Multivariate Normality Test

The residuals of the data that was used for multiple linear regression analysis were assumed to be normally distributed. This was founded on the fact that this analysis requires that the errors between observed and predicted or expected values (that is, the residuals of the regression) to be normally distributed. Figure 4.1 outlines the results of multivariate normality test.

Normal P-P Plot of Regression Standardized Residual

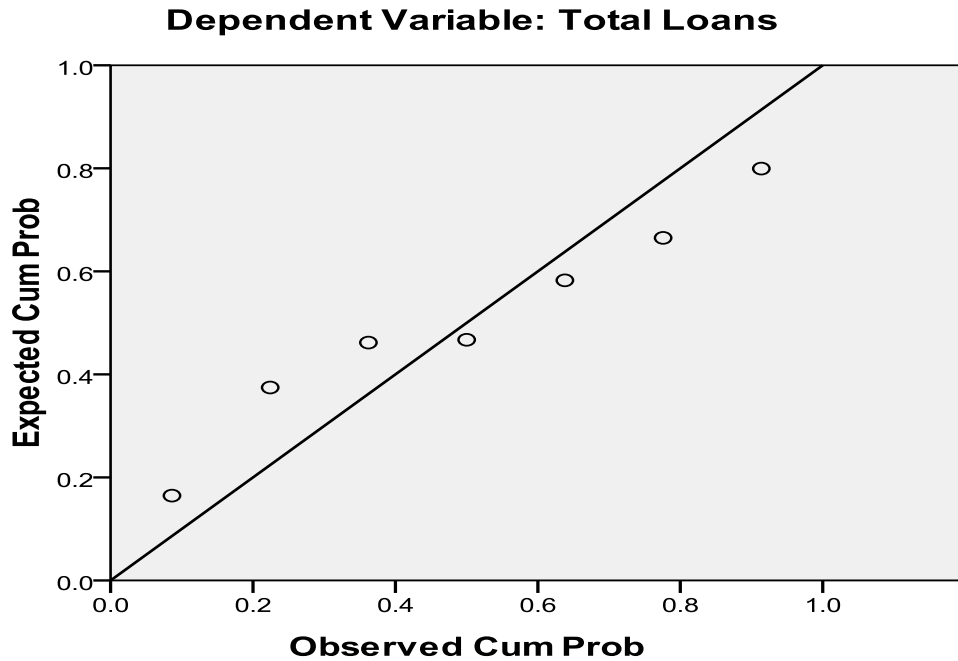


Figure 4.1: Results of Multivariate Normality Test

The P-P plot shown in Figure 4.1 plots areas under the curve (or cumulative distribution function) for corresponding values. The plot enables finding of deviations from normality in the centre of the distribution. It is evident from the P-P plot illustrated in Figure 4.1 that the 7 observations representative of the sample size (7 years under survey) were evenly distributed along the line of best fit. These observations which represented the standardized residuals of the panel data for the six parastatals over the 7 years under survey were found to illustrate normal distribution with no extreme observations. Therefore, the panel data were concluded to be normally distributed and thus suitable for multiple linear regression analysis.

v) Homoscedasticity Test

The homoscedasticity assumption holds that the variance of error terms is similar across the values of the predictor or independent variables. As such, a plot of standardized residuals against predicted values can illustrate whether or not points are equally distributed across all values of the aforesaid independent variables. Arguably, homoscedasticity, though often ignored, has greater impact on validity of linear regression results in comparison to normality. It plays a more critical role than normality on validity of analysis of variance (ANOVA) particularly since testing for overall differences in group means across all the groups as presented by the F-test is more sensitive to homoscedasticity as opposed to normality (Yang, Tu, & Chen, 2019). In relation to the present study, the multiple linear regression model held the assumption that the variance of residuals across all levels of the predicted values was homogeneous. The results of homoscedasticity are illustrated in Figure 4.2.

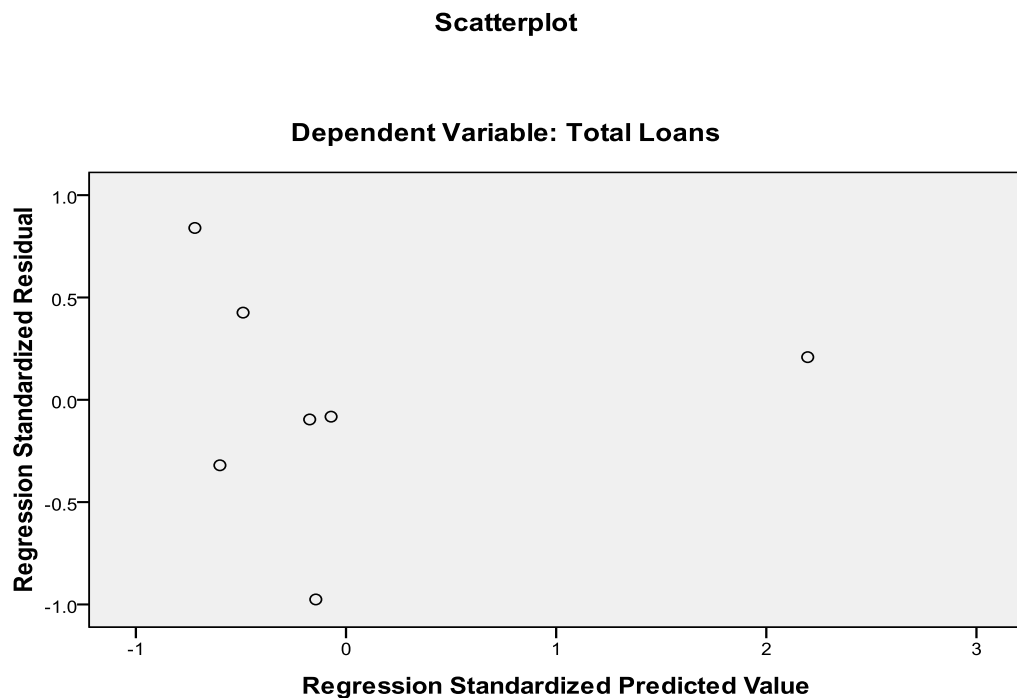


Figure 4.2: Results of Homoscedasticity Test

In line with the results shown in Figure 4.2 and given that the X-axis run horizontally along the zero (0) value, it is clear that the values represented by data points are almost equally distributed above and below the X-axis (3 points above and 4 points below the X-axis) in the scatter plot. Therefore, it was imperative to conclude that the variance of residuals across all levels of predicted values as shown in Figure 4.2 was homogeneous. The homoscedasticity threshold was thus achieved.

b) Multiple Linear Regression Analysis without Moderation (Test of Direct Effect)

Having satisfied the requirements or assumptions of multiple linear regression, the panel data was analyzed with the results being presented as shown in Table 4.43, Table 4.44 and Table 4.45 respectively. The results of primary data analysis were employed to determine the most important variable and the variable to be dropped due to its relatively high inter-correlation with the former study construct. The most important variable as shown in Table 4.27 was stakeholder analysis. The variable that was dropped from the predictor variables was financial risks hence interest rate in the case of secondary data analysis as shown in Table 4.43, Table 4.44 as well as Table 4.45.

Table 4.43: Regression Weights for Overall Model

Model	r	r- Square	Adjusted R Square	Std. Error of the Estimate
1	.972 ^a	.944	.889	2.58266

a. Predictors: (Constant), Average Initial Capital, Average Payback Period, Profits Generated Annually

b. Dependent Variable: Total Loans

The results of the weights of overall model illustrated in Table 4.43 indicate that the general correlation between mega project characteristics (interest rate, average initial capital, and average payback period) was positive and strong ($r = 0.972$). The

findings implied that, as more emphasis was put on the aforesaid characteristics, there was a high probability of increasing mobilization of loans (commercial and concessional loans) by corporations in the Kenya's energy sector. The foregoing results were further supported by the observation that 94.4% of variability in finance mobilization could be explained by the studied characteristics ($r^2 = 0.944$). The results underlined how significant the aforesaid characteristics were with regard to mobilization of finances for projects in Kenya's energy sector.

Table 4.44: Significance Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1117.641	3	372.547	16.989	.022 ^a
Residual	65.786	3	21.929		
Total	1183.427	6			

a. Predictors: (Constant), Average Initial Capital, Average Payback Period, Profits Generated Annually

b. Dependent Variable: Total Loans

According to the results shown in Table 4.44, it was revealed that the value of F (3,3) = 16.989; $p = 0.022$ was statistically significant when measured at $p\text{-value} = 0.05$. Therefore, the sample data drawn from the six parastatals in the energy sector for the seven years' period fitted the general regression model ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$). The results implied that the aforesaid model was suitable in analyzing the effect of mega project characteristics on financial mobilization amongst parastatals in the energy sector in Kenya.

Table 4.45: Results for Overall Model

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	-978.829	518.969			-1.886	.156
Average Initial Capital	-.491	.460	-.361		-1.068	.364
Average Payback period	141.224	71.576	.597		1.973	.143
Profits generated Annually	-3.086	3.242	-.185		-.952	.411

a. Dependent Variable: Total Loans

The results illustrated in Table 4.45 were employed to interpret the combined effect of mega project characteristics (project costs, financial goal orientation and stakeholder analysis) on finance mobilization among parastatals in the energy sector in Kenya. It is important to note that the aforementioned characteristics were represented by average initial capital, average payback period and profits generated annually respectively.

The following multiple regression model was substitute thus:

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

$$Y = -978.829 - 0.491X_1 + 141.224X_2 - 3.086X_3$$

The substituted model shown above was interpreted to mean that for every unit change in total loans ($Y = 1$ unit), there had to be -0.491unit change ($\beta_1 = -0.491$), 141.224 unit change ($\beta_2 = 141.224$), and -3.086 unit change ($\beta_3 = -3.086$ in average initial capital, average payback period and profits generated annually respectively while other factors were held constant ($\beta_0 = -978.829$). Average payback period ($\beta_4 = 141.224$), which was a proxy of financial goal orientation, was found to have the greatest effect on mobilization of both commercial and concessional loans by parastatals in the energy sector in Kenya. On the other hand, average initial capital

($\beta_2 = -0.491$) was observed to have the least effect on the aforesaid finance mobilization.

A closer look at the results of t-statistics brings to the fore the fact that all mega project characteristics were statistically not significant at $p\text{-value} = 0.05$. Specifically, it was established that the effect of average initial capital on total loans ($t = -1.068$; $p = 0.364$), effect of average payback period on total loans ($t = 1.973$; $p = 0.143$) and effect of profits generated annually on total loans ($t = -0.952$; $p = 0.411$) were statistically not significant at 0.05 level of significance ($p\text{-value} = 0.05$).

Therefore, it is imperative to infer that, although average initial capital and average payback period returned statistically significant effect on total loans ($p\text{-value} < 0.05$) when examined individually, their effect when in analysed alongside other mega project characteristics was not statistically significant ($p\text{-value} > 0.05$). Moreover, it was concluded that average initial capital and average payback period, which parameterized project costs and financial goal orientation respectively, were least and most crucial indicators in reference to mobilization of finances for mega projects being undertaken by the parastatals under the purview of the energy sector in Kenya. As such, it was recommended that the government should put greatest emphasis on financial goal orientation while at the same time largely ignoring the initial costs associated with mega projects.

c) Test of Moderating Effect of Budgeted Project Costs on the Relationship between Mega Project Characteristics and Financial Mobilization

The study evaluated whether or not annual budgeted project costs had a significant effect on the relationship between mega project characteristics and financial mobilization amongst parastatals in the Kenya's energy sector. The results to this effect are presented in Table 4.46, Table 4.47 and Table 4.48 respectively. In carrying out the moderated regression analysis, an interaction term was generated by calculating the product of all predictor variables that were included in multiple regression analysis (average initial capital, average payback period and profits generated annually) and the moderator (annual budgeted project costs).

Table 4.46: Model Summary on Moderation Effect of Budgeted Project Costs

Model	r	r Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.972 ^a	.944	.889	4.68280	.944	16.989	3	3	.022
2	.990 ^b	.980	.940	3.43432	.036	3.578	1	2	.199

a. Predictors: (Constant), Average Initial Capital, Average Payback Period, Profits generated Annually

b. Predictors: (Constant), Average Initial Capital, Average Payback Period, Profits Generated Annually, Annual Budgeted Project Costs

According to the results shown in Table 4.46, the r Square in Model 1 ($r^2 = 0.944$) indicated that the mega project characteristics explained 94.4% variability in finance mobilization. However, upon introduction of the annual budgeted project costs (BPC), the R Square in Model 2 ($R^2 = 0.980$) indicated that the model as a whole could explain 98.0% variance in finance mobilization while 2.0% was explained by other factors not addressed by this study. Therefore, change in r^2 was found to be 0.036 which reflected the results of adding the interaction term to the model. Therefore, the annual budgeted project costs explained additional 3.6% variance in finance mobilization among parastatals in the energy sector. The foregoing contribution was further established not to be statistically significant (Sig F Change = 0.199) at p -value = 0.05. The results implied that the role played by the annual budgeted costs at influencing the relationship between mega project characteristics and finance mobilization in Kenya's energy sector was not substantial. Essentially, the budgeted project costs did not have statistically significant moderator effect on the relationship between the foretasted variables.

Table 4.47: Analysis of Variance on Moderation Effect of Budgeted Project Costs

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1117.641	3	372.547	16.989	.022 ^a
Residual	65.786	3	21.929		
Total	1183.427	6			
2 Regression	1159.838	4	289.960	24.584	.039 ^b
Residual	23.589	2	11.795		
Total	1183.427	6			

a. Predictors: (Constant), Average Initial Capital, Average Payback period, Profits Generated Annually

b. Predictors: (Constant), Average Initial Capital, Average Payback period, Profits Generated Annually, Annual Budgeted Project Costs

c. Dependent Variable: Total Loans

As shown in Table 4.47, there are two models which reflect the results of regression analyses without moderation and with moderation respectively. The variation in the number of regressors and residuals is due to the additional (moderator) variable in the second model. The results of analysis of variance indicated that the results of Model 1 (without moderation) were statistically significant ($F_{3,3} = 16.989$; $p = 0.022$) at p -value = 0.05. Similarly, it was revealed that when budgeted project costs were introduced into the model as a moderator variable, the results were still statistically significant at p -value = 0.05 ($F_{4,2} = 24.584$; $p = 0.039$). This implied that there was no statistically significant moderation (change) that was brought about by the annual budgeted project costs in the relationship between mega project characteristics and finance mobilization. The results for the overall moderated regression models are as shown in table 4.48 below.

Table 4.48: Results for Overall Moderated Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	
	B	Std. Error	Beta				
1 (Constant)	-978.829	518.969			-1.886	.156	
Average Capital	Initial	-.491	.460	-.361	-1.068	.364	
Average period	Payback	141.224	71.576	.597	1.973	.143	
Profits Annually	Generated	-3.086	3.242	-.185	-.952	.411	
2 (Constant)		-1451.479	455.306			-3.188	.086
Average Capital	Initial	.126	.470	.093	.269	.813	
Average period	Payback	202.422	61.663	.856	3.283	.082	
Profits Annually	Generated	5.123	4.949	.308	1.035	.409	
Interaction (Billions)	Term	.000	.000	-.741	-1.891	.199	

a. Dependent Variable: Total Loans

According to the results of moderated multiple linear regression model shown in Table 4.48 above, it is evident that the introduction of annual budgeted project costs as depicted by the interaction term had no notable effect on the relationship between all mega project characteristics and finance mobilization. With and without moderation, the aforesaid characteristics did not have statistically significant effect on total loans at $p\text{-value} = 0.05$. This implied that, under moderation, the three predictor variables (average initial capital, average payback period, and profits generated annually) were not statistically significant at $p\text{-value} = 0.05$ as illustrated by average initial capital ($t = -0.269$; $p = 0.813$), interest rate ($t = -3.283$; $p = 0.082$), and profits generated annually ($t = 1.035$; $p = 0.409$). These results led to the

conclusion that the budgetary allocation of the mega projects for each year was not likely to have implications on finance mobilization regardless of the prevailing mega project characteristics.

4.6 Hypotheses Testing

The results of t-statistics emanating from simple linear regression analysis were used to test the null hypotheses. Given that the analysis was conducted at 95% confidence level, null hypotheses were tested at $p\text{-value} = 0.05$. Therefore, t-statistics whose $p\text{-value} < 0.05$ led to the rejection of null hypotheses. On the other hand, $p\text{-value} > 0.05$ implied that the null hypotheses were not rejected. The hypotheses were tested based on the results of both primary and secondary data.

4.6.1 Hypotheses Testing Using Primary Data Results

The analytical results of data obtained from project managers in charge of various projects being undertaken by selected parastatals (Kenya Nuclear Board, Kentraco, KPLC, GDC, REA and KenGen) under the purview of energy sector in Kenya have been employed in this section to address the research hypotheses.

Testing Null Hypothesis One

H₀₁: Financial risks have no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Financial risks have significant influence on finance mobilization for mega projects in Kenya's energy sector.

The results obtained from simple linear regression analysis as shown in Table 4.15 indicated that the effect of financial risks on financial mobilization was statistically significant at 0.05 level of significance ($t = -10.292$; $p = 0.00$). This was contrary to what the null hypothesis (H₀₁) had stated. The results thus led to rejection of the null hypothesis. This meant that the alternate hypothesis (H_A) was considered to be true by the study.

Testing Null Hypothesis Two

H₀₂: Project costs have no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Project costs have significant influence on finance mobilization for mega projects in Kenya's energy sector.

As it was the case with testing the first null hypothesis, the second hypothesis was tested using the results of t-statistics emanating from simple linear regression analysis as shown in Table 4.18. The results ($t = -11.938$; $p = 0.00$) led to the observation that the effect of project costs on financial mobilization was statistically significant at $p\text{-value} = 0.05$. As such the aforesaid null hypothesis (H_{02}) was rejected while the pertinent alternate hypothesis (H_A) was taken to be true.

Testing Null Hypothesis Three

H₀₃: Financial goal orientation has no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Financial goal orientation has significant influence on finance mobilization for mega projects in Kenya's energy sector.

The results of t-statistics as shown in Table 4.21 ($t = 10.552$; $p = 0.00$) indicated that the effect of financial goal orientation on financial mobilization was statistically significant at 0.05 level of significance. Interpretatively, the null hypothesis was rejected since it contradicted the study findings. On the other hand, the alternate hypothesis was found to be true and thus adopted.

Testing Null Hypothesis Four

H₀₄: Stakeholder analysis has no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Stakeholder analysis has significant influence on finance mobilization for mega projects in Kenya's energy sector.

It was revealed from the results of simple linear regression analysis shown in Table 4.24 that the effect of stakeholder analysis on financial mobilization was statistically significant ($t = 4.124$; $p = 0.00$) at 0.05 level of significance. The results led to the rejection of the null hypothesis and adoption of the alternate hypothesis.

4.6.2 Hypotheses Testing Using Secondary Data Results

Secondary data was obtained from audited financial reports of the six parastatals which were surveyed. These included Kenya Nuclear Board, Kentraco, KPLC, GDC, REA and KenGen. The results of simple linear regression analysis were employed to test the null hypotheses at 95% confidence level, that is, p -value = 0.05. In the event the F -value was found not to be statistically significant, the F -statistic was used to test the null hypotheses, otherwise the t -statistic was used to test the aforesaid hypotheses. It is imperative to note that interest rate, average initial capital, average payback period and profits generated annually were used as the proxies of mega project characteristics, that is, financial risks, project costs, financial goal orientation and stakeholder analysis respectively.

Testing Null Hypothesis One

H₀₁: Financial risks have no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Financial risks have significant influence on finance mobilization for mega projects in Kenya's energy sector.

The results obtained from simple linear regression analysis as shown in Table 4.31, that is, $F(1, 5) = 0.910$; $p = 0.384$) revealed that the effect of interest rate on total loans was not statistically significant at 0.05 level of significance. The results were in agreement with what the respective null hypothesis (H_{01}) stated. Therefore, the null hypothesis was not rejected. Instead, it was accepted to be true.

Testing Null Hypothesis Two

H₀₂: Project costs have no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Project costs have significant influence on finance mobilization for mega projects in Kenya's energy sector.

In testing the null hypothesis, the effect of average initial capital on total loans was analyzed where the two constructs represented project costs and financial mobilization respectively. The results of simple linear regression analysis as depicted by t-statistics (Table 4.34) indicated that the effect of average initial capital, in extension project costs, on total loans, in extension financial mobilization, was statistically significant at 0.05 level of significance ($t = -5.783$; $p = 0.002$). Therefore, the results were a departure from the null hypothesis, hence it was rejected.

Testing Null Hypothesis Three

H₀₃: Financial goal orientation has no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Financial goal orientation has significant influence on finance mobilization for mega projects in Kenya's energy sector.

The results of t-statistics shown in Table 4.37 ($t = 4.648$; $p = 0.006$) which were obtained from simple linear regression analysis of average payback period on total loans indicated that the effect of the stated element of financial goal orientation on total loans, representing financial mobilization, was statistically significant at p -value = 0.05. These results were contrary to the null hypothesis which then meant it was rejected. Therefore, the alternate hypothesis (H_A) was concluded to be true.

Testing Null Hypothesis Four

H₀₄: Stakeholder analysis has no significant influence on finance mobilization for mega projects in Kenya's energy sector.

H_A: Stakeholder analysis has significant influence on finance mobilization for mega projects in Kenya's energy sector.

The results of F-statistics ($F_{1, 5} = 0.814$; $p = 0.408$) shown in Table 4.39 indicated that the effect of profit generated annually on total loans was not statistically significant at p -value = 0.05. Given that the two variables were proxies for stakeholder analysis and financial mobilization respectively, the results were in agreement with what the null hypothesis had stated. Therefore, the null hypothesis was not rejected, rather, it was considered to be true.

Testing Null Hypothesis Five

H₀₅: Annual budgeted project costs do not have significant effect on the relationship between mega project characteristics and finance mobilization for mega projects in Kenya's energy sector.

H_A: Annual budgeted project costs have significant effect on the relationship between mega project characteristics and finance mobilization for mega projects in Kenya's energy sector.

The results of moderation effect of annual budgeted costs on the relationship between mega project characteristics and finance mobilization shown in Table 4.46 were employed to test the hypothesis at 0.05 level of significance. The contribution of the aforesaid moderator (annual budgeted project costs) was found not to be statistically significant (Sig F Change = 0.199) at p -value = 0.05. This was supported by the results shown in Table 4.47 which indicated that the difference between the unmoderated and moderated effects was not statistically significant at p -value = 0.05. This implied that the effect of mega project characteristics on finance mobilization was statistically significant without moderation ($F = 16.989$; $p = 0.022$) and with moderation ($F = 24.584$, $p = 0.039$) at 0.05 level of significance. Therefore, the respective null hypothesis was not rejected, instead it was considered to be true. Conclusively, annual budgeted project costs did not play a substantial role in reference to mega project characteristics and finance mobilization among parastatals in the Kenya's energy sector.

4.7 Triangulation of Primary and Secondary Data Results

Triangulation is variously defined. Oftentimes, it is referred to as a technique or method of combining findings from two or more rigorous approaches with the view of providing a more comprehensive picture of the results than either of the approaches could do in isolation (Heale & Forbes, 2013). In respect of the current research study, triangulation is brought about by the fact that there were two distinct data sources. These were primary data sources and secondary data sources. Ideally, combining different approaches or sources as exemplified by the present study result in one of the following three outcomes. Number one, the results may converge and lead to the same or similar conclusions. Number two, the results may relate to different phenomena or objects though they may be complementary to each other and as such be employed to supplement individual results. Number three, the results may be divergent or contradictory. Each of the foregoing outcomes has specific aims. In the case of converging results, the aim is to enhance the validity through verification. Complementary results point out the various aspects of the phenomenon under study whereas divergent outcomes aim at presenting better explanations of the aspects or phenomena being studied (Tashakkori & Teddle, 2003).

The primary data was in form of views obtained from managers in charge of mega projects being implemented by selected parastatals under the purview of the energy sector in Kenya. These views touched on mega project characteristics (financial risks, project costs, financial goal orientation and stakeholder analysis) and financial mobilization. On the other hand, secondary data addressed statistics on various facets definitive of the aforementioned mega project characteristics and financial mobilization. The triangulation is most evident in inferential statistics comprising results of correlation as well as both simple linear and multiple regression analyses.

4.7.1 Triangulation Using Correlation Results

With regard to results of correlation (Spearman rank correlation for primary data and PPMCC for secondary data) analysis, Table 4.49 presents the triangulation analysis. The results reflect correlation between mega project characteristics for primary data (financial risks, project costs, financial goal orientation and stakeholder analysis) and

financial mobilization, and also for secondary data where mega project characteristics were parameterized by interest rate, average initial capital, average payback period and profits generated annually whereas finance mobilization was represented by total loans. This means that the results emanating from PPMCC between each of these indicators representing mega project characteristics and finance mobilization were considered to be akin to the Spearman rank correlation results emanating from primary data as afore-explained.

Table 4.49: Triangulated Correlation Results for Primary and Secondary Data Analysis

Mega Project Characteristics		Financial Mobilization (total loans)	
		Primary Data	Secondary Data
Financial Risks (interest rate)	Pearson	-.749**	-.392
	Correlation		
	Sig. (2-tailed)	.000	.384
Project Costs (average initial capital)	Pearson	-.821**	-.933**
	Correlation		
	Sig. (2-tailed)	.000	.002
Financial Goal Orientation (average payback period)	Pearson	.695**	.901**
	Correlation		
	Sig. (2-tailed)	.000	.006
Stakeholder Analysis (profits generated annually)	Pearson	.570**	-.374
	Correlation		
	Sig. (2-tailed)	.001	.408
	N	32	7

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

According to the results shown in Table 4.49, it is clear that financial risks and project costs had similar results when correlated against financial mobilization for both primary and secondary data. In both cases the correlation was negative. The correlation between financial risk and financial mobilization was negative ($r = -$

0.749; p-value = 0.000) similar to correlation result between interest rate (representing financial risk) and total loans which represented financial mobilization ($r = -0.392$; $p = 0.384$). The only difference was the fact that the correlation using primary data was statistically significant as opposed to the use of secondary data where the correlation was not statistically significant at p -value = 0.05.

Correlation results between project costs and financial mobilization were negative and statistically significant ($r = -0.821$; p -value = 0.000). Similarly, results of correlation ($r = 0.210$; 0.373) between average initial capital representing project costs and total loans was found to be negative and statistically significant ($r = -0.933$; p -value = 0.002) at 0.05 level of significance. This meant that, in as far as financial risks, project costs and financial mobilization were concerned and with regard to correlation analytical results, the primary and secondary data converged thus enhancing the validity of the results (Tashakkori & Teddle, 2003).

Similarly, the correlation results illustrating the relationship between financial goal orientation (average payback period in case of secondary data) and finance mobilization (total loans in case of secondary data) were found to be similar. Akin to the primary data which returned ($r = 0.695$; $p = 0.000$), secondary data results were ($r = 0.901$; $p = 0.006$). The correlation between the last mega project characteristic (stakeholder analysis) and financial mobilization, nevertheless, returned divergent results in respect of primary and secondary data. Whereas with regard to primary data, stakeholder analysis ($r = 0.570$; $p = 0.001$) was positively correlated with financial mobilization and was statistically significant at p -value = 0.05, its corresponding indicator in the case of secondary data, that is, profits generated annually ($r = -0.374$; $p = 0.408$) had negative and statistically not significant correlation with total loans, which was the metric for financial mobilization. The divergent results served to offer better explanation of the relationship between stakeholder analysis and financial mobilization in finance mobilization in Kenya's energy sector. This was concurrence to the assertion that contradictory results present better explanation of the phenomena being investigated (Tashakkori & Teddle, 2003).

4.7.2 Triangulation Using Simple Linear Regression Results

The results emanating from simple regression analysis of both primary and secondary data were compared. The aim was to establish their points of convergence or divergence and drawing conclusions with regard to the genesis of either of the two outcomes. A summary of the test significance results is demonstrated in Table 4.50.

Table 4.50: Triangulation of Test Significance Results (Simple Linear Regression)

Predictor Variable	Primary Data		Secondary Data	
	F-Statistic	Sig. (p-value)	F-Statistic	Sig. (p-value)
Financial risks	105.924	.000	0.910	.384
Project costs	142.520	.000	33.440	.002
Financial goal orientation	111.335	.000	21.602	.006
Stakeholder analysis	17.006	.000	.814	.408

Dependent Variable: Financial mobilization

On the aspect of the simple linear regression models used, all the investigated mega project characteristics using the primary data, that is, financial risks, project costs, financial goal orientation and stakeholder analysis had models which were statistically significant at 0.05 level of significance as shown in Table 4.50. This means that all their respective F-values returned p-values less than 0.05. Indeed, they had similar significant values ($p = 0.000$).

However, when secondary data was used to test the significance of the simple linear regression models, only the models linking project costs (average initial capital) and financial goal orientation (average payback period) to financial mobilization (total loans) were found to be statistically significant at p -value = 0.05 ($F = 33.440$; $p = 0.002$) and ($F = 21.602$; $p = 0.006$) respectively. The rest were found not to be statistically significant ($p > 0.05$) as depicted by the results of their respective F-statistics. Comparatively, the sampled primary data fitted the adopted simple linear regression model. On the contrary, only the sampled secondary data in respect of

project costs and financial goal orientation were found to fit the adopted simple linear regression model.

This meant, whereas all null hypotheses were rejected when primary data was used, in the case of primary data, only the second (H₀₂) and third null hypotheses (H₀₃) were rejected and the others failed to be rejected. On the face value, the primary data appeared to be more reliable in addressing specific objectives and respective null hypotheses as opposed to secondary data. Yet, the secondary data which was collected from reliable sources overrode the primary data. This was due to the fact that as opposed to the primary data which represented the views of project managers, secondary data captured the facts as they were in parastatals in the energy sector regarding mega project characteristics and finance mobilization. Conclusively, the divergence brought about by the simple regression analyses of primary and secondary data served to better the explanation regarding how individual mega project characteristics affected financial performance of selected parastatals in the Kenya's energy sector.

4.7.3 Triangulation Using Multiple Regression Results

In triangulating primary and secondary data, the simple linear regression analyses were delimited to analysis of variance where their respective F-values were compared. Therefore, for advanced triangulation, the results of multiple regression analyses using the two sets of data were employed. The objective was to understand the points of convergence or divergence of not only the F-values but also the beta values and t-values. Triangulation of the results of F-statistics of the primary and secondary data is presented in Table 4.51.

Table 4.51: Triangulation of Test Significance Results (Multiple Regression)

Type of Data Analyzed	Sample (n)	F- Statistic	Sig. (p-value)
Primary data	32	65.326	.000 ^a
Secondary data	7	16.989	.022 ^a

It is evident from the results shown in Table 4.51 that the sample data used in respect of both primary data and secondary data, regardless of the varying sample sizes, fitted the adopted regression models. This was attributed to the fact that the F-values in the two scenarios were found to be statistically significant, that is, for primary data the value of $F(4, 27) = 65.33$; $p = 0.00$ and for secondary data the value of $F(4, 2) = 16.989$; $p = 0.022$ were statistically significant at 0.05 level of significance (p -value = 0.05). It is instructive to note that the multiple regression model used in both cases was the same. The variation was exhibited only in the sample size (32 and 7), type of data (primary and secondary) and source of data (primary and secondary sources). The aforesaid results meant that there was convergence between primary and secondary data hence leading to the same conclusions with regard to mega project characteristics and financial mobilization in parastatals under the Kenya's energy sector. This was in support of one of the outcomes of triangulating different data, which is convergence of results (Williamson, 2005).

Additionally, the beta results and t-statistics emanating from multiple regression analysis of primary and secondary data were triangulated with the objective of understanding whether their outcomes converged or were contradictory. A summary of the triangulated results is presented in Table 4.52 where the point of interest lies in the results of beta (β), t-statistics (t) and significant levels (p-values).

Table 4.52: Triangulation Results of Overall Model (Primary and Secondary Data)

Predictors	Primary Data			Secondary Data		
	B	t	p-value	B	t	p-value
(Constant)	-2.425	-4.869	.000	-978.829	-1.886	.156
Financial Risks	-.245	-1.160	.256	-	-	-
Project Costs	-.547	-2.603	.015	-.491	-1.068	.364
Financial Goal Orientation	.351	2.135	.042	141.224	1.973	.143
Stakeholder Analysis	.417	3.349	.002	-3.086	-.952	.411

b. Dependent Variable: Finance Mobilization

As earlier explained, interest rate, average initial capital, average payback period, profits generated annually and total loans represented financial risks, project costs, financial goal orientation, stakeholder analysis and finance mobilization respectively in the case of secondary data. However, the bottom line are the study constructs as shown in Table 4.52. It is important to note that ‘financial risks’ variable has been dropped in the case of secondary data. Evidently, the triangulated beta values and t-statistics deviated from the triangulated correlation results shown in Table 4.49. Whereas under correlation, all predictors under primary data were significantly correlated against finance mobilization and only two characteristics returned statistically significant correlation in the case of secondary data, the regression coefficients depicted a different picture. Equal number of mega project characteristics had statistically significant effect on finance mobilization in the case of both primary and secondary data (Table 4.47).

Although, the effect of financial risk on finance mobilization was addressed in the case of primary data, the former variable was dropped in the case of secondary data. Hence, there was no tenable triangulation which was conducted on the foregoing aspect. In both the primary data and secondary data, the effect of project costs (average initial capital in case of secondary data) on finance mobilization (total loans in case of secondary data) was negative. The foregoing pointed out to convergence of primary and secondary data on this mega project characteristic resulting in the same conclusion that increasing both project costs, mobilization of finances for implementing mega projects by parastatals in the energy sector was bound to be compromised or negated or reduced. On the other hand, when the aforementioned characteristic was reduced, then chances were that, more finances were likely to be mobilized by these parastatals.

Albeit the fact that, when secondary data was collected and analyzed, all except one, mega project characteristics were found to have a negative effect on finance mobilization, it was quite different when primary data was collected and analyzed. As illustrated in Table 4.52, the results of multiple regression of primary data indicated that the effect of both financial goal orientation ($\beta_3 = 0.351$) and stakeholder analysis ($\beta_4 = 0.417$) on financial mobilization was positive. These

results showed that the primary data was divergent from secondary data. This contributed to better explanation of the effect of the two mega project characteristics on finance mobilization in the surveyed parastatals. Divergent results are argued to offer better explanation of the phenomenon being studied (Heale & Forbes, 2013).

Interestingly, while project costs with regard to primary data constituted the characteristic of mega projects with the greatest effect on financial mobilization ($\beta_2 = -0.547$), financial goal orientation (represented by average payback period) in the case of secondary data had the greatest effect on finance mobilization ($\beta_3 = 141.224$). This illustrated the divergence of views of project managers as presented by the primary data analysis and the facts as reported from reliable secondary data sources (audited financial statements and reports of respective parastatals). Though the divergent results led to better explanation of the studied mega project characteristics in reference to finance mobilization, the inferences drawn from the results of multiple regression analysis of secondary data took precedence (Unachukwu, Kalu, & Ibiam, 2018). Hence from the triangulated results, recommendations centred more on secondary data instead of primary data.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, a summary of the major study findings – both descriptive and inferential, primary and secondary – is presented. This is followed by illustrating the conclusions drawn from the major findings and in tandem with the objectives of the study. The chapter further covers the recommendations emanating from the conclusions made. The last part highlights areas suggested for further empirical research.

5.2 Summary

This section puts into perspective a summary of major findings emanating from analysis of both primary and secondary data. The summary also features descriptive and inferential statistical results and interpretations.

5.2.1 Financial Risks and Finance Mobilization

The study established that credit risk was not significantly lowered when the state guaranteed the loan facilities borrowed to finance mega projects. It was noted that there were regular complaints by suppliers regarding delayed payment for goods and services supplied to facilitate project implementation and that the mega projects in the energy sector were prone to significant economic risk since they took extended duration to complete. In addition, inflation rate fluctuation was found to be a huge impediment to implementation of mega projects in the energy sector. More so, there were increased financial risks which were occasioned by litigation costs which rose from non-payment to suppliers as well as increased interest rates emanating from delayed payment to suppliers. The findings further indicated that the surveyed projects lacked cash flows in the initial implementation stages and interest rates on debt financing were comparatively higher than local market rates. Furthermore, it was revealed that exchange rate had the biggest range, mean and standard deviation while forex gain or loss had the smallest range, mean and standard deviation.

The correlation results indicated that there existed a negative, strong and statistically significant relationship between financial risks and financial mobilization hence, an increase in financial risks could lead to a reduction in financial mobilization. The secondary results also noted that there existed negative, weak but not statistically significant relationship between interest rate (financial risk) and total loans (Financial mobilization). The primary regression results noted that financial risk accounted for 77.9% of the variability in financial mobilization among parastatals in the energy sector while the secondary regression findings revealed that interest rate as an indicator of financial risk explained 15.4% variance in total loans.

5.2.2 Project Costs and Finance Mobilization

Pertaining project costs, it was observed that the initial costs for mega projects in the parastatals were often very high and the government took care of the viability gap funding for mega projects. It was also found that project costs were often inflated to the detriment of investors who had major concerns regarding the cost of finance. Additionally, mega projects undertaken by parastatals often experienced cost overruns. On the same breadth, the viability gap funding enabled the mobilization of the private sector to take part in mega projects in their organizations. Moreover, it was revealed that without external funding it was difficult to raise the high initial capital required for mega projects implementation. The average initial capital was the better indicator of project costs as opposed to finance costs given its relatively small values of range, mean and standard deviation.

The findings acknowledged that the relationship between project costs and financial mobilization was negative, strong and statistically significant. Therefore, increasing the project costs was likely to reduce funds mobilization. The secondary analysis results found that the relationship between average initial capital and total loans was negative, strong and statistically significant. This meant that increasing the average initial capital of mega projects (project costs) was likely to reduce the concessional and commercial loans borrowed by parastatals in the energy sector to a large and substantial extent. The study also ascertained that 82.6% of the variance in financial mobilization could be explained by project costs associated with mega projects. On

the other hand, it was reported that 87.0% of variability in financial mobilization (total loans) could be attributed to project costs (average initial capital) as indicated by regression results for secondary analysis.

5.2.3 Financial Goal Orientation and Finance Mobilization

The study revealed that mega projects were likely to take a considerably long duration of time to recoup the initial capital. The study further found that project progress was monitored throughout, the project had clear goals for termly expenditures, project milestones in terms of funds used in executing various activities under the project were tracked on a regular basis and the implementation of the mega projects was evaluated quarterly (every three months) against projected goals. The projects, however, had no clearly defined financial returns and there was a low likelihood that the predicted financial returns would be realized over the specified timelines. Moreover, it was observed that clear financial goals did not reduce cost overruns in mega projects. In addition, regarding financial goal orientation, average payback period had the least range, mean, and standard deviation the working capital was also positive which indicated financial sustainability of the surveyed parastatals.

Furthermore, the study revealed that financial goal orientation had a positive strong and statistically significant relationship with mobilization of finances, hence, the clearer the financial goals of mega projects in the energy sector parastatals the greater the amounts of finances that could potentially be mobilized. The results of the secondary analysis noted that the relationship between average payback period and total loans was negative weak and statistically not significant, that is, an increment in average payback period would likely lead to small reduction in total loans. Financial goal orientation was found to explain 78.8% change in financial mobilization amongst parastatals in the energy sector in Kenya. The average payback period which was a proxy of financial goal orientation accounted for 81.2% variability in total loans.

5.2.4 Stakeholder Analysis and Finance Mobilization

The study findings with regard to stakeholder analysis observed that mega projects implemented by parastatals had many and diverse stakeholders with the government agencies being the main stakeholders. It was also established that the interest of stakeholders played a critical role in finance mobilization. However, the government played a leading role in mobilizing funds from both local and foreign sources. On the same vein, the study noted that the stakeholders contributed significantly towards funds mobilization. It was further acknowledged that the major stakeholders did not possess the greatest power in respect of finance mobilization. Additionally, dividend per share had the least values of range, mean and standard deviation. More so, it was established that some parastatals in the energy sector had a negligible probability of being bankrupt while others were on the verge of bankruptcy.

The study, moreover, ascertained that there existed a positive, moderately strong and statistically significant relationship between stakeholder analysis and financial mobilization. This meant that an increase in consideration of the stakeholders' interests could lead to mobilization of more funds. The correlation results for secondary data revealed that there existed a negative, moderately strong and statistically significant relationship between profits generated annually and total loans. Only 36.2% of the variability in financial mobilization could be attributed to stakeholder analysis while the rest (63.8%) was attributed to other factors besides stakeholder analysis. More so, it was observed that 14.0% of variance in finance mobilization could be accredited to profits generated annually by the parastatals in the energy sector in Kenya.

5.2.5 Mega Project Characteristics and Finance Mobilization

The study observed that parastatals relied heavily on government funding to implement their mega projects through conditional grants in the budget which were deemed sufficient to finance the mega infrastructural projects. More so, the financing of the projects relied heavily on commercial loans. In addition, the government enabled the parastatals to acquire concessional loans to fund mega infrastructure projects. It was also revealed that the amounts raised through issuance of bonds were

a significant component of project funds. Donor funding was also found to be substantial in financing of mega projects in parastatals. The study further found that external loans from, say, the World Bank and IMF, enhanced the implementation of mega infrastructural projects in energy sector's parastatals. The parastatals had, however, not benefited from foreign direct investments in funding their mega infrastructural projects.

Parastatals in the energy sector were found to be more dependent on either concessional and or commercial loans even though some parastatals obtained funding from bank overdrafts and governments budgetary allocation. Project costs were found to have the greatest effect on finance mobilization amongst parastatals in the energy sector whereas financial risks had the least effect on financial mobilization in energy sector parastatals. The results are affirmed by secondary data findings which established that average payback period, which was a proxy of financial goal orientation, had the greatest yet positive effect on mobilization of both commercial and concessional loans by parastatals in the energy sector in the country. On the other hand, average initial capital was observed to have the least (negative) effect on the aforesaid loan (finance) mobilization.

Furthermore, the multiple regression results found that the average payback period which was a proxy of financial goal orientation, had the greatest effect on mobilization of both commercial and concessional loans by parastatals in the energy sector in the country. On the other hand, average initial capital, an indicator of project costs, was found to have the least effect on the aforesaid loan (finance) mobilization.

5.2.6 Moderation Effect of Annual Budgeted Project Costs on Relationship between Mega Project Characteristics and Finance Mobilization

The annual budgeted project costs were found not to have statistically significant moderating effect on the influence of mega project characteristics on finance mobilization among parastatals in the energy sector in Kenya. Introducing the moderator variable (annual budgeted project costs) did not change the significance of the hitherto model linking mega project characteristics to finance mobilization.

Albeit the fact that the moderator nullified the significance of effect of three mega project characteristics (that is, financial risks, project costs and stakeholder analysis), its failure to significantly affect the influence of financial goal orientation on finance mobilization reduced its overall moderation effect. This tallied with the fact that the null hypothesis which stated that: Annual budgeted project costs do not have significant moderating effect on the relationship between mega project characteristics and finance mobilization for mega projects in Kenya's energy sector, was not rejected. This meant that the aforesaid budgeted project costs played a marginal role with regard to both mega project characteristics and finance mobilization in reference to parastatals in the energy sector in Kenya.

5.3 Conclusions

The study made various conclusions based on the summary of findings. The conclusions are presented in line with financial risks, project costs, financial goal orientation, stakeholder analysis, annual budgeted project costs and finance mobilization.

5.3.1 Financial Risks and Finance Mobilization

It was concluded that credit risk was not substantially lowered when the State guaranteed the loan facilities borrowed to finance mega projects. It was also inferred that suppliers complained regularly due to delayed payment for goods and services supplied. The study further deduced that mega projects in the energy sector were prone to significant economic risk since they took extended duration to complete. Additionally, it was concluded that inflation rate fluctuation was a huge impediment to mega projects implementation in the energy sector.

The findings of a previous study conducted by Anton et al., (2011) were similar to the conclusions of the present study since they acknowledged that inflation and currency fluctuation were the most significant risks facing mega projects. Inflation rate poses a financial risk of mega projects because any increase in prices of materials ultimately leads financial shortages. More so, it was concluded that increase in financial risk was occasioned by litigation costs which rose from non-

payment of suppliers. On the same vein, the present study inferred that delay in payment to suppliers led to increased interest rates. In addition, it was inferred that mega projects lacked cash flows in the initial implementation stages and debt financing had higher interest rates than the local market rates.

It was inferred that financial risks in general had a negative strong and statistically significant relationship with financial mobilization while interest rates had a negative, weak and statistically not significant relationship with total loans. Furthermore, it was concluded that 77.9% and 11.5% of the variability in financial mobilization could be attributed to financial risks and interest rate respectively.

5.3.2 Project Costs and Finance Mobilization

In relation to project costs it was concluded that the initial costs for mega projects were very high. The conclusion was in li

ne with the findings of a previous study carried out by Anskew (2016) which indicated that the main challenge of mega projects was the high investment cost. The aforesaid cost led to delay in project implementation and consequently project success. The mega projects mostly have a budget appraisal which ranges from Ksh 1 billion to Ksh 40 billion as indicated by (Omony, 2017).

The present study further deduced that the government often addressed the viability gap funding for mega projects. The study also inferred that despite the investors having major concerns regarding the cost of finance it was often inflated to their detriment. Additionally, the study deduced that cost overruns were often experienced in mega projects. This conclusion collaborated with the findings of studies conducted by Locatelli et al., (2017) and Coffie et al., (2019) which noted that success of mega projects was hindered by cost overruns emanating from the legal, socio-economic, technological aspects and failure of being completed within the predicted time. The legal aspects encompassed litigation costs which mostly resulted from delayed payment or non-payment to suppliers. More so, it was inferred that external funding was the major source of initial capital required for project

implementation. Moreover, the study concluded that the viability gap funding enabled the mobilization of the private sector to take part in mega projects.

It was further concluded that project costs had a negative strong and statistically significant relationship with financial mobilization. On the other hand, there existed a negative, weak and statistically not significant nexus between average initial capital and total loans. Consequently, 82.6% of the variance in financial mobilization could be attributed to project cost while only 4.4% of the variability in total loans could be attributed to project costs.

5.3.3 Financial Goal Orientation and Finance Mobilization

It was concluded that project progress was monitored throughout, there were clear goals for termly expenditure, project milestones in terms of funds used in executing various activities under the project were tracked on a regular basis and the implementation of the mega projects was evaluated quarterly (every three months) against projected goals. The study further inferred that recouping the initial capital would take considerably long duration. More so, the study concluded that the projects lacked clearly defined returns and the likelihood of realizing the predicted financial returns within the specified timelines was low. This conclusion was similar to the findings of a past study carried out by Nanok et al., (2017) which established that locals had not adequately benefited from mega projects in terms of job opportunities and trade volumes. This implied that mega projects failed to achieve the set financial goals in terms of cost and financial benefits.

Similarly, the study concluded that clear financial goals failed to reduce cost overruns in mega projects. This was due to other factors which included contractor's inability, improper resource planning, project preparation, interpretation of requirements, timeliness, poor definition of work, risk allocation and government bureaucracy as illustrated by Kagiri et al., (2013). Moreover, the study concluded that the nexus between financial goal orientation and financial mobilization was positive strong and statistically significant. It was also deduced that the relationship between average payback period and total loans was negative weak and statistically significant. In addition, 78.8% and 7.0% of the variance in financial mobilization and

total loans could be explained by financial goal orientation and average payback period respectively.

5.3.4 Stakeholder Analysis and Finance Mobilization

In respect of stakeholder analysis, it was deduced that the projects had many and diverse stakeholders. The aforementioned conclusion was in agreement with the arguments of the reviewed stakeholder theory developed by Freeman (1984) which states that organizations are comprised of a group of stakeholders with differing interests, needs and viewpoints. This, therefore, emphasizes on the need to manage the diverse interests of stakeholders in mega projects in order to enhance financial mobilization. Additionally, the study deduced that the government agencies were the major stakeholders in mega projects.

The foregoing conclusion differed with the findings of an earlier study conducted by Maddaloni (2015) which revealed that the community ranked as the most influential stakeholder in mega projects followed by project managers, the structural engineers, and lastly the hawkers committee. This was due to the fact that lack of community engagement and consultation often derails project implementation leading to time and cost overruns. However, the major stakeholders did not possess the greatest power in respect of financial mobilization. In addition, it was concluded that the interest of stakeholders played a critical role and contributed significantly towards funds mobilization. It was further concluded that the government played a leading role in mobilizing funds from both local and foreign sources.

The study also deduced that the relationship between stakeholder analysis and financial mobilization was positive, moderately strong and statistically significant while the nexus between profits generated annually and total loans was negative, moderately strong and statistically significant. Moreover, only 36.2% of the variance in financial mobilization could be attributed to stakeholder analysis. The rest (63.8%) is attributed to other factors besides stakeholder analysis. Furthermore, 28.1% of variance in financial mobilization could be accredited to profits generated annually. Additionally, it was inferred that annual budgeted project costs had

substantial influence on the relationship between mega project characteristics and finance mobilization.

5.3.5 Mega Project Characteristics, Annual Budgeted Project Costs and Finance Mobilization

The study drew conclusions particularly on the moderating effect of annual budgeted project costs on the relationship between mega project characteristics and finance mobilization in Kenya's energy sector. It was concluded that, by introducing annual budgeted project costs, the importance of financial risks, project costs and stakeholder analysis represented by interest rate, average initial capital and profits generated annually respectively, was reduced. This is informed by the fact that, without moderation, the effect of the aforementioned mega project characteristics on finance mobilization was statistically significant at $p\text{-value} = 0.05$. However, when moderated by the annual budgeted project costs, the aforesaid effect ceases from being statistically significant.

Yet, it was concluded that the introduction of the moderator variable did not change the significance of financial goal orientation parameterized by average payback period. Therefore, it was imperative to deduce that the annual budgeted project costs were largely inconsequential to the effect of financial goal orientation on finance mobilization in the case of parastatals in the energy sector. Another inference was the fact that, overall, annual budgeted project costs did not impact substantially how mega project characteristics related to finance mobilization.

5.4 Recommendations

It is recommended that the parastatals in the energy sector should come up with alternative ways of reducing financial risks which are an impediment to the mobilization of financial resources for mega projects. The study further recommended that enough funds should be mobilized before embarking on the implementation of mega projects in the energy sector so as to reduce the litigation costs and interest rates increment which are attributed to failure and delay in paying suppliers. It was also necessary for the parastatals to ensure that mega projects

undertaken were completed within the stipulated timelines by ensuring that they set clear and realistic goals. The funds for financing mega projects should be mobilized from foreign donors, private players and the government as opposed to debt which exposes the parastatals to credit risk and high interest rates particularly in the local financial markets.

Mega projects in the energy sector are often financed through own generated profits and the government. It is recommended that the projects initial costs should be reasonable so as to attract investors. Therefore, inflating of costs for personal gains and intentional extension of project duration should also be ceased in order to reduce the project costs. The study further recommends that internal sources should be used to finance mega projects since they are cheaper and significantly reduce the overall project costs.

With regard to financial goal orientation it is recommended that vigorous financial mobilization techniques should be used so as to speed up the process of recouping enough initial capital required to implement mega projects. Additionally, it is recommended that project managers for mega projects to draw clear, realistic and well defined returns so as to ensure that the probability of realizing the predicted returns are high. Moreover, timely and frequent project monitoring coupled with clear financial goals should be conducted to ensure that project milestones in terms of funds are tracked and evaluated against projected goals in order to reduce cost overruns in mega projects.

It is further recommended that all stakeholders taking part in the project should be given utmost importance due to their role in financial mobilization. Their diverse interests should also be taken in to consideration so as to ensure continuous financial support. The government should increase their efforts in helping the energy sector parastatals mobilize more funds from both local and foreign sources. Moreover, it was recommended that parastatals in the energy sector ought to put into consideration the annual budgeted costs for mega projects when devising the best measures of mobilizing finances requisite in the implementation of the aforesaid projects. This is based on the fact that the annual budgeted project costs influenced

how the mega project characteristics (financial risks, project costs, financial goal orientation and stakeholder analysis) affected finance mobilization particularly in the context of parastatals in Kenya's energy sector.

Given that annual budgeted project costs were largely inconsequential to the overall effect of mega project characteristics on finance mobilization, it is advisable for these entities not to give much consideration to these costs in their mobilization of funds to initiate and implement mega projects under their purview. It is also recommended that there should be increased emphasis on financial goal orientation, in particular the payback period, when annual budgeted costs are factored in mega projects. This is in order to reduce the effect of the aforesaid costs on mobilization of funds especially in form of commercial and concessional loans.

5.5 Areas Further Research

The study suggests other areas that scholars and researchers may address in relation to characteristics of mega projects and finance mobilization in parastatals in Kenya's energy sector. It is suggested that themes, such as, project costs, stakeholder analysis, financial goal orientation and financial risks and their effect on financial mobilization should be evaluated. Moreover, it is advisable to embark on a study on the characteristics of mega projects and financial mobilization in Kenya Power and Lighting Company. Furthermore, a similar study can also be conducted on the effect of the characteristics of mega projects on performance of parastatals in the energy sector in the country. Informed by the results of the moderation brought about by annual budgeted project costs, it would be important to empirically investigate the moderated effect of the aforesaid costs on the influence of mega project characteristics (financial risks, project costs and stakeholder analysis) on finance mobilization in parastatals in other key sectors such as health, agriculture, road, and etcetera.

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APPENDICES

Appendix I: Letter of Introduction (From The University)


**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY**
P.O. Box 1063 - 20100 NAKURU, KENYA.
TEL: (051) 2216660 FAX: 2215664 CELL: 0714 716957
Email: nakuru@jkuat.ac.ke Website: www.jkuat.ac.ke

REF: HD433-C007-4280/2014 DATE: 18TH SEPTEMBER, 2019

TO WHOM IT MAY CONCERN

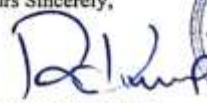

Dear Sir/Madam,

RE: SOLOMON THUO NGAHU HD433-C007-4280/2014



This is to confirm that Mr. Ngahu is a bona fide student of this University undertaking a Doctor of Philosophy Degree in Business Administration. He has finished his course work and currently collecting data for both primary and secondary data titled: **CHARACTERISTICS OF MEGA PROJECTS AND FINANCE MOBILIZATION IN PARASTATALS IN KENYA'S ENERGY SECTOR.**

Any assistance accorded to him will be highly appreciated.

Yours Sincerely,

RUTH LIMARENG.
ADMINISTRATOR, NAKURU CBD CAMPUS.
KL/2019

 **JKUAT is ISO 9001:2015 and ISO 14001:2015 Certified** 
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship

Appendix II: Research Questionnaire

This questionnaire is integral to a research study titled: *Characteristics of mega projects and their influence on finance mobilization in parastatals in Kenya's energy sector*. You are kindly requested to indicate your level of agreement or disagreement with regard to the propositions under each category. Use the following scale shown below (1-Strongly Disagree (SD), 2-Disagree (D), 3-Undecided (U), 4-Agree (A), and 5-Strongly Agree (SA). Kindly do not indicate your name or identity of your organization. The data and/or information collected from you will be treated with utmost confidentiality and shall be used for purposes of research only.

Financial Risks

Statements	SA	A	U	D	SD
	5	4	3	2	1
i. Mega projects in energy sector are prone to significant economic risk since they take extended duration to complete.					
ii. Interest rates on debt financing for mega projects are comparatively higher than local market rates.					
iii. The inflation rate fluctuation is a huge impediment to implementation of mega projects in our corporation.					
iv. Mega projects in energy sector are exposed to default risks due to lack of cash flows in the initial implementation stages.					
v. Due to lower default risks, our parastatal is able to access credit on lower rates to finance its mega projects.					
vi. Credit risk is significantly lowered by the State guaranteeing the loan facilities borrowed to finance mega					

projects in our parastatal.					
vii. There have been regular complaints by suppliers regarding delayed payment for goods and services supplied to facilitate project implementation.					
viii. Delayed payment to suppliers has led to increased interest costs.					
ix. There are increased financial risks occasioned by litigation costs arising from non-payments or delayed payments to suppliers.					

1. Project Costs

Statements	SA	A	U	D	SD
	5	4	3	2	1
i. The initial costs for mega projects in our parastatal are often very high (more than Ksh 1 billion).					
ii. Without external funding, it is largely difficult to raise the initial capital for mega projects in our parastatal.					
iii. The government takes care of viability gap funding for mega projects in our corporation.					
iv. Viability gap funding enables the mobilization of the private sector to take part in mega projects in our organization.					
v. Mega projects undertaken by our parastatal often experience cost overruns.					
vi. The cost of finance is a major concern for investors in our					

parastatal.					
vii. In my view, project costs are often inflated to the detriment of investors.					

2. Financial Goal Orientation

Statements	SA	A	U	D	SD
	5	4	3	2	1
i. Our project is likely to take considerably long duration to recoup the initial capital.					
ii. The project progress is monitored throughout.					
iii. The implementation progress of the mega projects is evaluated quarterly (every three months) against projected goals.					
iv. The project milestones in terms of funds used in executing various activities under the project are tracked on a regular basis.					
v. The project has clear goals for termly expenditures.					
vi. Clear financial goals often reduce cost overruns in our project.					
vii. Our project has clearly predicted financial returns.					
viii. There is a high likelihood that the predicted financial returns will be realized over the specified timelines.					

3. Stakeholder Analysis

Statements	SA	A	U	D	SD
	5	4	3	2	1
i. Projects being implemented by our parastatal have many and diverse stakeholders.					
ii. To a large extent, the government agencies are the major stakeholders in our parastatal's projects.					
iii. All stakeholders contribute significantly towards funds mobilization.					
iv. The government plays a leading role in mobilizing funds from local and foreign sources.					
v. Stakeholders have greatly varying influence over mobilization of project finances.					
vi. The major stakeholders equally possess the greatest power in relation to finance mobilization.					
vii. The interests of stakeholders play a critical role in finance mobilization.					

4. Finance Mobilization

Statement	SA	A	U	D	SD
	5	4	3	2	1
i. Our parastatal relies heavily on government funding to implement its mega projects through conditional grants in					

the budget.					
ii. Normally the conditional grants are sufficient to finance mega infrastructural projects in our parastatal.					
iii. The financing of mega projects is augmented through commercial loans.					
iv. Amounts raised through issuance of bonds are a significant component of project funds.					
v. Through the government, our parastatal is able to acquire concessional loans to fund mega infrastructural projects.					
vi. External loans from, say, the World Bank and IMF, enhance the implementation of mega infrastructural projects in our organization.					
vii. Our parastatal has benefitted from foreign direct investments in funding its mega infrastructural projects.					
viii. Mega projects being implemented by our parastatal get substantial donor funding.					

Thank You for Your Participation. May God Bless You Abundantly.

Appendix III: Secondary Data Collection Sheet

Component	2012/1	2013/1	2014/1	2015/1	2016/1	2017/1	2018/1
	3	4	5	6	7	8	9

Financial Risks

Forex gain/loss							
Interest rates on borrowing							
Average Currency exchange rate against the dollar							

Financial Goal Orientation

Sales/assets ratio							
Networth of the firm							
Payback period							
Working capital ratio							
Annual rate of return							
Firm gearing ratio							

Project Costs

Average Initial capital							
-------------------------	--	--	--	--	--	--	--

Cost of finance							
--------------------	--	--	--	--	--	--	--


Stakeholder Analysis


Profits generated annually							
Debt-equity ratio							
Earnings per share							
Dividend per share							
Z-Score coefficient							

Finance Mobilization

Budget Allocation							
Equity finance							
Commercial loans							
Concessiona l Loans							
Bank overdrafts							


Appendix IV: Research Permit (NACOSTI)


REPUBLIC OF KENYA


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

Ref No: **298975** Date of Issue: **24/January/2020**


RESEARCH LICENSE




This is to Certify that Mr., SOLOMON NGAHU of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research in Nairobi on the topic: CHARACTERISTICS OF MEGA PROJECTS AND FINANCE MOBILIZATION IN PARASTATALS IN KENYA'S ENERGY SECTOR for the period ending : 24/January/2021.

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Appendix V: List of Mega Projects in the Energy Sector in Kenya

1	GDC	Bogoria Silali Geothermal Project
2	GDC	Menengai Geothermal Development Project
3	GDC	The Scaling - Up Access To Energy Project
4	KENGEN	Olkaria I and IV
5	KENGEN	220KV Kamburu - Embu - Thika Transmission Line
6	KENGEN	Olkaria V (Geothermal)
7	KENTRACO	National Grid System: Nanyuki-Isiolo-Meru
8	KENTRACO	Sondu Homabay Ndhwa Awendo Electrification Project
9	KENTRACO	Transmission line Mombasa-Nairobi
10	KENTRACO	Nairobi 220KV Ring
11	KENTRACO	Turkwell- Ortum- Kitale
12	KENTRACO	Kenya Electricity Expansion Project (KENTRACO)
13	KENTRACO	Eastern Electricity Highway Project (Ethiopia- Kenya Interconnector)
14	KENTRACO	Interconnection Project of Electric Grids of Nile Equatorial lakes C
15	KENTRACO	Power Transmission System Improvement project
16	KENTRACO	Kenya Power Transmission Expansion Project
17	KENTRACO	Loiyangalani-Suswa Transmission line
18	KNB	Nuclear Board Power Plant Siting
19	KPLC	Olkaria Lessos Kisumu Power Lines Construction Project
20	KPLC	Nairobi 132kv And 66kv Network Upgrade And Reinforcement
21	KPLC	Last Mile Electricity Connectivity
22	KPLC	Multi-National Kenya-TZ Power Interconnection Project
23	KPLC	Street-lighting
24	KPLC	Menengai – Soilo
25	KPLC	Nairobi City Centre E.H.V & 66KV Network Upgrade & Reinforcement
26	KPLC	Retrofitting of Mini Grids
27	KPLC	Kenya Power Distribution System Modernization & Strengthening Project
28	REA	Kenya Electricity Modernization Project
29	REA	Kenya Development of Solar Power Plant
30	REA	Electrification of Public Facilities
31	REA	Installation of Transformers in Constituencies
32	REA	Solar PV Installation on institution and Community

Source: Ministry of Energy, Kenya (2019)