

Influence of Project Costs on Finance Mobilization of Mega Projects in Parastatals in Kenya's Energy Sector

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Abstract: *Hitherto, there are clear research gaps relative to project costs and finance mobilization in the case of mega projects in Kenya's energy sector. This is in spite of the problems face by the aforesaid projects in terms of delayed completion, funds embezzlement and total collapse. This study evaluated the effect of project costs on finance mobilization of the parastatals in the energy sector in Kenya. The study was guided by the agency cost theory. A cross-sectional research design and quantitative research approach were adopted. The study targeted project managers working with 32 mega projects. A census design was adopted. A structured questionnaire and secondary data collection sheet were used in data collection. The collected data were subjected to descriptive and inferential analyses using the Statistical Package for Social Sciences. The results of the analyses were presented in table format. According to the analytical results of primary data, the relationship between project costs and financial mobilization was negative strong and statistically significant at 0.05 level of significance ($r = -0.909$; $p = 0.00$). However, correlation results emanating from secondary data analysis indicated that the aforesaid relationship was not statistically significant at p -value = 0.05. Whereas the effect of project costs on finance mobilization was found to be substantial when primary data were analyzed, the regression analysis of the secondary data indicated that the effect of project costs on finance mobilization was not statistically significant. In relation to project costs it was concluded that the initial costs for mega projects were very high. The study also inferred that despite the investors having major concerns regarding the cost of finance it was often inflated to their detriment. It is recommended that the projects initial costs should be reasonable so as to attract investors. 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.*

Keywords: *Energy sector, mega projects, finance mobilization, parastatals, project costs*

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I. Introduction

Projects are used in all economic and non-economic fields as means of organizing the activity, aiming 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).

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.

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 megaprojects in Kenya are attributed to compensation disputes that hinder the acquisition of the land required for 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.

II. Statement of the Problem

The socio-economic development of every nation is largely founded on the successful implementation of mega projects which cut across diverse sectors such as agriculture, infrastructure, health, water, security and energy among others. Successful implementation of these projects is contingent to availability of resources mostly financial resources. Therefore, the ideal situation requires adequate mobilization of finances for successful completion of the aforesaid projects and the public to reap the projected benefits. Nevertheless, this is not the case as evidenced by time overruns experienced by mega projects and in several cases, absolute collapse of the projects. To some extent, it is hypothetically argued that project costs as part of characteristics of mega projects in the energy sector might have played a role in finance mobilization. Yet, this has hitherto remained hypothetical due to scarcity of empirical literature which has compounded the stated problem. 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 county governments in Kenya. A majority of these research studies are narrow in scope most of them addressing infrastructural projects by the county governments and also falling short of empirically addressing the issue of costs associated with mega projects in the energy sector particularly in relation to finance mobilization. Therefore, there exists clear knowledge and research gaps which this study purposed to address. This study was, therefore, necessitated by the need to establish the link between project costs and finance mobilization in Kenya's energy sector.

Objectives of the Study

To examine the influence of project costs on finance mobilization for mega projects in Kenya's energy sector

Research Hypothesis

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

III. Theoretical Framework

The study was guided by the agency cost theory which 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. 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.

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 or monitoring costs significantly.

IV. Conceptual Framework

The study was guided by the conceptual framework shown in Figure 1. According to the illustration, there were two variables. These included project costs and finance mobilization representing independent and dependent variables respectively. Project costs were operationalized by average initial capital and cost of finance. On the other hand, equity finance, commercial loans and concessional loans characterized finance mobilization. It was hypothesized that there existed a relationship between project costs and finance mobilization in Kenya's energy sector.

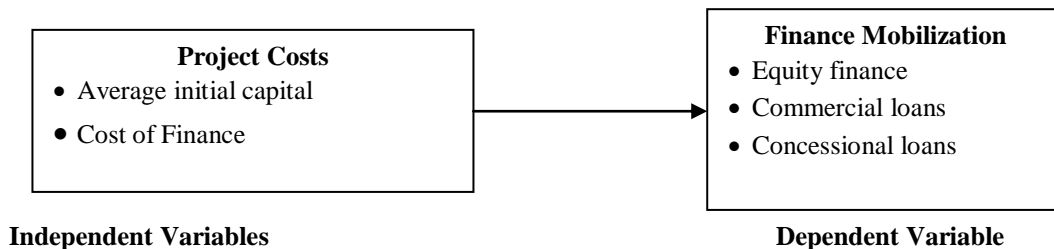


Figure 1: Conceptual Framework

V. Review of Literature on Study Variables

This section presents a review of literature on study variables, which are project costs and finance mobilization.

a) Project Costs

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).

A study conducted by Locatelli, Littau, Brookes and Mancini (2014) analyzed project characteristics which enable the success of megaprojects 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 megaprojects. Correlation tests were done using Fisher Exact Test. The results of the analysis established that the sampled six megaprojects 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

In Kenya, a study carried out by Omony (2017) analyzed the performance of public infrastructure megaprojects. 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 megaprojects in the country are always delivered over budget, with benefit shortfalls and behind schedule.

b) Finance Mobilization

Financial mobilization encompass making better use of existing resources and maximizing new and existing resources. Organizations should have empowerment and training programmes which promotes 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).

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

Additionally, a study conducted by Karanja (2018) investigated innovative funding models for transport megaprojects 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. It is evident that there exists clear research gaps with regard to project costs and finance mobilization particularly in the context of the energy sector in Kenya.

VI. Material and Methods

The step-by-step procedure followed to carry out the research study is outlined hereunder. A cross-sectional research design was adopted given that the study was conducted over a specified period of time (Breakwell, Hammond & Fife-Schaw, 1995). Additionally, quantitative approach was employed where numerical data, both primary and secondary, were collected and subsequently analyzed. The study targeted project managers working with 32 mega projects being implemented by the various parastatals under the purview of the Ministry of Energy in Kenya. Given the relatively small number of these managers, a census design was adopted. This means that all the 32 managers were projected to participate in the study.

In collecting the requisite data, a structured questionnaire and secondary data collection sheet were used. The two tools facilitated collection of primary data and secondary data respectively. Primary data were collected from the aforesaid project managers. On the other hand, secondary data were sources from audited and published financial statements and reports of the six parastatals under survey, which included GDC, Kentraco, KPLC, KenGen, K. Nuclear and REA.

The researcher proceeded to collect data from the selected respondents after receiving authority 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. The research questionnaire was pilot tested before its use in collecting data for the main study. The rationale of the pilot study, which is described as a small scale to test research protocol and data collection instruments (Lancaster, Dodd, & Williamson, 2004), was to determine the validity and reliability of the questionnaire.

Validity which is defined as the extent to which a research instrument or test is able to measure what it purports to measure (Mohajan, 2017), was determined by engaging the assigned University supervisors. These supervisors closely critiqued and evaluated the data items on each study variable (project costs and finance mobilization) and made suggestions on areas to be amended, which the researcher duly followed. On the other hand, reliability which refers to consistency of the data collection tool or stability of findings (Altheide & Johnson, 1994), was tested using the Cronbach's alpha coefficient. After the testing, it was revealed that the two study variables returned alpha coefficients greater than the minimum acceptable threshold of 0.7.

After obtaining the necessary introduction letters, research permit, authorisation letter and consents, data were collected over a period of approximately two weeks. The collected data were then screened to get rid of any possible outliers which could have emanated from among others, non-responses. The cleaned data were subjected to descriptive and inferential analyses using the Statistical Package for Social Sciences (SPSS) tool. Descriptive statistics used included measures of distribution, measures of central tendencies and measures of dispersion. Inferential statistics took the form of Pearson's Product Moment Correlation Coefficient and simple linear regression analyses. The following simple linear regression model guided the study.

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where Y represented 'Finance Mobilisation'

X_1 represented 'Project Costs'

B_0 represented 'Constant'

B_1 represented 'Parameter Estimate'

ε represented 'Error term for the Regression Coefficient'

The null hypothesis was tested at p-value = 0.05. The results of the analyses were presented in table format.

VII. Results, Interpretations and Discussion

The results of the descriptive and inferential statistical analysis are presented in this part. The results are accompanied by relevant interpretations and discussion.

a) Primary Data Analysis

The data collected from a sample project managers were analyzed using both descriptive and inferential statistics. Descriptive data analysis was conducted with the realization that the data collected 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 were in form of means and standard deviations (Std. Dev.). The pertinent descriptive results, correlation and simple linear regression are presented in Table 1, Table 2, Table 3, Table 4, Table 5 and Table 6 respectively.

Table 1: Descriptive Statistics for Project Costs

	Mean	Std. Dev.
The initial costs for mega projects in our parastatals are often very high (more than Ksh 1 billion).	4.84	.369
The government takes care of viability gap funding for mega projects in our corporation.	4.25	.440
In my view, project costs are often inflated to the detriment of investors.	4.15	.745
The cost of finance is a major concern for investors in our parastatals.	4.00	.762
Mega projects undertaken by our parastatals often experience cost overruns.	3.97	1.062
Viability gap funding enables the mobilization of the private sector to take part in mega projects in our organization.	3.91	.856
Without external funding, it is largely difficult to raise the initial capital for mega projects in our parastatals.	3.88	1.212

The results as shown in Table 1 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 1 billion) (mean = 4.84); the government took care of viability gap funding for megaprojects 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 views of respondents' regarding the assertion varied significantly (stddev > 1.000).

Table 2: Descriptive Statistics for Finance Mobilization

	Mean	Std. Dev.
Our parastatal relies heavily on government funding to implement its mega projects through conditional grants in the budget.	4.78	.420
The financing of mega projects is augmented through commercial loans.	4.19	.738
Through the government, our parastatal is able to acquire concessional loans to fund mega infrastructural projects.	4.16	.808
Normally the conditional grants are sufficient to finance mega infrastructural projects in our parastatal.	3.84	.954
Amounts raised through issuance of bonds are a significant component of project funds.	3.69	1.330
Mega projects being implemented by our parastatal get substantial donor funding.	3.38	1.212
External loans from, say, the World Bank and IMF, enhance the implementation of mega infrastructural projects in our organization.	3.25	1.320
Our parastatal has benefitted from foreign direct investments in funding its mega infrastructural projects.	2.66	1.234

In accordance with the findings shown in Table 2, it was revealed 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 (stddev > 1.000).

Table 3: Correlation between Project Costs and Finance Mobilization

Project Costs	Financial Mobilization	
	Pearson Correlation	
	Sig. (2-tailed)	.000
	n	32

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

The study also revealed as shown in Table 3 that, the relationship between project costs and financial mobilization was negative strong and statistically significant at 0.05 level of significance ($r = -0.909$; $p = 0.00$). 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 had 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 ranging from approximately Ksh 1 billion to Ksh 40 billion.

Table 4: 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 indicate that project costs could explain 82.6% of variance in financial mobilization ($r^2 = 0.826$). These findings underlined the sheer importance of considering costs associated with mega projects when mobilizing financial resources to implement the said projects.

Table 5: 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 5 ($F_{1,30} = 142.52$; $p = 0.00$) that the sample data fitted the adopted simple regression model ($Y = \beta_0 + \beta_1 X_1 + \epsilon$). Therefore, the pertinent model was suitable in examining the effect of project costs on financial mobilization as shown in Table 6.

Table 6: Regression Coefficients for Project Costs against Financial Mobilization

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
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 6 ($Y = -1.629 - 1.333X_2$), 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.

b) Secondary Data Analysis

The published and audited data on project costs and finance mobilization in respect of the GDC, KenGen, Kentraco, KPLC, REA, and K. Nuclear were collected and analyzed. The results, interpretations and discussion herein are relative to descriptive statistics and inferential statistics. The results of secondary data analysis are presented in Tables 7 to Table 10.

Table 7: A Summary of Descriptive Statistics

	n	Range	Min	Max	Mean	Std. Dev.
Average Initial Capital	20	10.04	22.80	32.84	28.2540	3.61270
Finance Costs	20	7.61E8	1.10E9	1.86E9	1.4884E9	2.57251E8
Commercial Loans	20	1.16E10	1.35E9	1.29E10	7.0985E9	4.10268E9
Concessional loans	20	3.89E9	1.10E9	4.99E9	3.0741E9	1.46138E9
Total Loans	20	8.43	6.34	14.77	10.1740	3.42260

As shown in Table 7, project costs were represented by average initial capital and finance costs while commercial loans and concessional loans represented finance mobilization. Total loans were obtained from summation of the commercial and concessional loans given that they constitute the key borrowings of parastatals including those in the energy sector. On project costs, average initial capital was the better indicator as opposed to finance costs given its relatively smaller values of range (10.04), mean (28.25) and standard deviation (3.61). 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. On this note, therefore, commercial loans and concessional loans were summed up to obtain total loans which were subsequently used to represent financial mobilization.

Table 8: Correlation between Project Costs and Finance Mobilization

		Financial Mobilization (Total Loans)
Project Costs (Average Initial Capital)	Pearson Correlation	-.210
	Sig. (2-tailed)	.373
	n	5

The study 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 8. It was revealed that the relationship between average initial capital and total loans was negative, weak and statistically not significant at 0.05 level of significance ($r = -0.210$; $p = 0.373$). The results were interpreted to mean that although 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 small extent, the reduction was not substantial. Therefore, the costs of the aforesaid projects were largely inconsequential to the loans borrowed by the stated organizations.

Table 9: Model Summary of Project Costs on Finance Mobilization

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.210 ^a	.044	-.009	3.43773

a. Predictors: (Constant), Project Costs

The results of coefficient of determination shown in Table 9 ($r^2 = 0.044$) indicated that only 4.4% of variability in financial mobilization (total loans) could be attributed to project costs (average initial capital). The findings implied that project costs played a very minor role in influencing how parastatals in the energy sector procured funds to implement their mega projects.

Table 10: Simple Regression Analysis of Project Costs on Finance Mobilization

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	9.847	1	9.847	.833	.373 ^a
Residual	212.723	18	11.818		
Total	222.570	19			

a. Predictors: (Constant), Project Costs

b. Dependent Variable: Finance Mobilization

The F-value as shown in Table 10 was established not to be statistically significant at 0.05 level of significance ($F_{1, 18} = 0.833$; $p = 0.373$). According to these results, the null hypothesis, which stated that the effect of project costs on financial mobilization was not significant, was not rejected. Instead, it was considered to be true. Additionally, the results were illustrative of the fact that the sample data used could not fit the pertinent simple regression model. Hence, the model could not be applicable in analyzing the beta coefficients (the effect) of project costs (average initial capital) on financial mobilization (total loans).

c) Hypothesis Testing

The t-statistics and/or F-statistics whose p-value < 0.05 led to the rejection of the null hypothesis. On the other hand, p-value > 0.05 implied that the null hypothesis was not rejected. The hypothesis was tested based on the results of both primary and secondary data.

- **Hypotheses Testing Using Primary Data Results**

H₀₁: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.

The null hypothesis was tested using the results of t-statistics emanating from simple linear regression analysis as shown in Table 6. 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-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.

- **Hypothesis Testing Using Secondary Data Results**

Secondary data were obtained from audited financial reports of the six parastatals which were surveyed. These included K-Nuclear, 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 average initial capital was used as the proxy of project costs while total loans represented finance mobilization.

H₀₁: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 F-statistics (Table 10) indicated that the effect of average initial capital, in extension project costs, on total loans, in extension financial mobilization, was not statistically significant at 0.05 level of significance ($F_{1, 18} = 0.833$; $p = 0.373$). Therefore, the results were in concurrence to the null hypothesis, hence it was not rejected; rather, it was considered to be true.

VIII. Conclusions

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

IX. Recommendations

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.

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