
Capital Accumulation Planning Practice and Performance of Mega Dam Projects in Kenya

Article history: Revised format: 20th Nov 2024, Available online 4th March 2025

Karamunya Teresa Wasonga¹; Dr. Josphat Kwasira²; Dr. Elizabeth Nambuswa³;
Prof. Gregory Namusonge⁴; Philip Wanjala Wasike⁵

Abstract:

Purpose: The primary objective of this study is to determine the effects of capital accumulation planning practice on the performance of mega dam projects in Kenya.

Material/methods: The study was guided by the capital structure theory, which is relevant to the study variables. A cross-sectional survey design was adopted, targeting a population of 322 registered civil engineers and land surveyors in Kenya. A sample of 133 respondents was selected. Data was collected using a semi-structured questionnaire, and regression analysis was employed to assess the relationship between capital accumulation planning practice and project performance.

Findings: The regression coefficient results indicated that capital accumulation planning practice has a significant impact on the performance of mega dam projects in Kenya.

Conclusion: The study concludes that effective capital accumulation planning practices contribute positively to the success of mega dam projects.

Value: The study provides valuable insights for project management professionals by emphasizing the need to strengthen capital accumulation planning practices. Specifically, it highlights the importance of budgeting and taxes, communication and accounting, liquidity management, financing large purchases, and risk management in enhancing project performance.

Keywords: Capital accumulation planning practice, Performance, mega dam projects

Paper Type: Research Article

Recommended Citation: Wasonga, K. T., Kwasira, J., Nambuswa, E., Namusonge, G., & Wasike, P. W. (2025). Capital accumulation planning practice and performance of mega dam projects in Kenya. *Journal of Economics, Management Sciences and Procurement*, 3(2), 240-253. ISSN: 8852-6948.

1. Introduction

Mega dam projects are recently far more complex than ever before. Large capital investment is involved as well as several disciplines embraced, tighter schedules, project participants who are widely disseminated, and quality standard, which are stringent. The planning of a project represents an administrative promise to look for after activities' agreement in the growth of the business, pulling in and user pleasure, opposing resourcefully, leading tasks and getting better capital and market performance of the organization. Therefore, some of the construction company's

¹ PhD, Project Management, Jomo Kenyatta University of Agriculture and Technology

² Lecturer, Jomo Kenyatta University of Agriculture and Technology

³ Lecturer, Jomo Kenyatta University of Agriculture and Technology

⁴ Lecturer, Jomo Kenyatta University of Agriculture and Technology

⁵ Lecturer, Jomo Kenyatta University of Agriculture and Technology

project plan entails increasing the business, building a loyal clientele and outdoing the rivals. However, the available facts show that majority of mega dam construction projects do not achieve success since many of them have not taken off while others have stalled (Ndachi & Kimutai 2018). It is even considered that the boost to economic development and poverty reduction is often achieved through the provision/ambient access to improved water supply to each and every community member. Having insufficient water harvesting structures, integrated journal positions is the need to excavate more dams that often requires an efficient investigation that guarantees establishment of a suitable positions where excavation may occur (Matos et al., 2019).

Capital accumulation planning techniques frequently guarantee project success and on-time delivery, which is an essential task for any technical firm (Jørgensen, 2016). Aiming for the ideal capital accumulation strategy raises the likelihood of satisfaction for many stakeholders, promoting their confidence in the company for additional investments (Jørgensen, 2016). Planning for capital accumulation is the most important step in lowering unanticipated risk and project failures. In actuality, if a great concept is never carried out, no one gets rewarded for it. Every stage of the project's execution is monitored on time and under budget thanks to capital accumulation planning. A timeline that guides team members through the completion of assigned tasks and helps them identify the skills and technocrats they will need, when to acquire them, and who to assign them is typically included in the capital accumulation strategy. Additionally, radar directs the group to remain busy in order to improve project success (Datta et al., 2022). All team members will be actively involved thanks to the capital accumulation plan, which also gives them the chance to grow in their careers at a favourable time.

Capital accumulation planning procedures guarantee that productivity is promptly tested at each stage. When the project is executed well, all members of the team will be able to anticipate problems before they arise. This increases productivity and guarantees that the strategy will be carried out as intended. Capital accumulation planning plays a crucial role in risk analysis, prioritization, and mitigation. It allows for the systematic ranking of multiple risks, ensuring they are addressed effectively. This process strengthens project stability and helps the team retain key information and deadlines, minimizing the risk of oversight (Jørgensen, 2016). As Bonnie et al. (2023) points out, a capital accumulation plan is actually an essential project operating phase, and omitting it will jeopardize the success of one's project before it even gets underway. A capital accumulation plan can assist one avoid obstacles that could cause them to get behind schedule by outlining the amount of money needed, when it should be acquired, from whom, and for what purpose. (Moore, 2023).). In-depth resource planning procedures are necessary for the overall project to succeed, as well as for the project's associated businesses to prosper or fail in the future (Ika & Pinto, 2022).

According to Garcia et al. (2021) mega dam projects—those costing more than 15 million shillings—are frequently associated with subpar results and detrimental effects on the environment and society. Numerous writers have endeavoured to depict the complex vocabulary associated with the execution of mega dam projects. The term performance of a mega dam project refers to the effective completion of dam projects with the goal of providing water in a sustainable manner (Dalibi et al., 2020). According to Braeckman, et al. (2020) a dam project's capacity to meet supply and

demand is what constitutes dam performance. In this context, the sustainable supply of water is referred to as the mega dam project's performance. This indicates that the foundation for the operation of a mega dam project is a sufficient supply of water following the successful completion of the project (Bongei et al., 2024).

Every year, project errors during execution and input result in billions of dollars being lost (Emek, 2021). For example, according to Baurzhan et al. (2021) of 57 dam plant investments financed by the World Bank Group in Africa, 70% of the projects had a cost overrun, and over 80% of the aforementioned projects had a time overrun issue, which resulted in possible additional expenses. With additional environmental advantages raising the real rate of return from 15.4% to 17.3%, it is stated that the projects helped prevent over a billion tons of CO₂, for an estimated worldwide environmental benefit valued at roughly USD 350 billion. Overrun problems, however, are more detrimental to budgeted labour, capital gains, and material inputs.

Over the 1800s, massive dam construction efforts in tropical Africa increased the area that could be irrigated by 720% (Goldewijk et al., 2017). Notably, Ethiopia experienced a notable rise in water losses due to evaporation between 2014 and 2020 as a result of the construction of the High Aswan Dam (HAD), with a 22% decline in incidents reported (Asegdew & Mulat, 2017). Since the Thwake dam was built in Makueni County, the number of water-related illnesses, including diarrhoea, intestinal worms, bilharziasis, and skin disorders, has drastically decreased by up to 75%. Additionally, villagers' walking distances in search of water have decreased by up to 9 kilometres (National Environment Management Authority, 2019). Nevertheless, there is lack of statistical evidence demonstrating the detrimental impact of mega dam project overruns on project performance in the future. Many obstacles stemming from capital supply and demand affects the majority of the nation's mega dam projects (Shi et al., 2020). This frequently leads to waste of building supplies, the embezzlement of project funding, inaccurate labor supply forecasts, and time management delays. For example, the Thwake dam project has had incidents of construction material vandalism (KBC news, 2024), which has an impact on the project's performance.

Capital accumulation planning strategies and project success are positively correlated; thus, businesses must budget for project resources to gain an advantage over rivals and secure their continued existence at the conclusion of the project. Poor capital accumulation planning techniques and analysis result in a project that fails, whereas effective capital accumulation planning techniques raise the project's chances of success (Haron et al., 2017). Nevertheless, there is a shortage of credible research on the effectiveness of mega dam projects, despite the vast volume of study and diversity of project management subjects. It is envisioned that this study would offer background knowledge on how capital accumulation planning techniques affect the performance of mega dam projects in Kenya. Thus, the main objective of the study was to assess the effects of capital accumulation planning practice on performance of mega dam projects in Kenya.

2. Theoretical and Literature Review

2.1. Theoretical Review

Capital accumulation planning in this study was approached using capital structure theory, with careful consideration given to how organizations plan to achieve their

strategic goals and objectives. According to Wachira (2018), capital accumulation planning practice is crucial in both the public and private sectors. In the public sector, as seen with major dam projects funded through partnerships between the government and foreign donors, budgets are typically generated immediately after the vision and objectives are established. Conversely, in the private sector, a financial plan is created. These financial and budget plans detail all tasks, materials, tools, and resources needed to achieve the objectives, along with the associated timeline.

Capital structure theory provides an overview of the financing and management of organizations. Numerous arguments suggest that managing an organization's capital structure is complex, and the optimal approach remains debated (Modigliani & Miller, 1958). Project financing is a significant concern for many companies, and selecting an appropriate financial framework is crucial. According to Handoo and Sharma (2014), most businesses face similar challenges regarding their capital structure composition, and water firms are no exception. According to Ukhriyawati et al. (2017), capital structure theory posits that a combination of debt and equity should be used to shape a company's capital structure, as this greatly enhances the optimization of the firm's value. A company's financial stability is influenced by its capital structure. In the Pakistani textile industry, Mujahid and Akhtar (2014) conducted research on the impact of capital structure on an organization's financial stability and shareholder wealth. Their study discovered that the capital structure positively impacts both shareholder wealth and the financial stability of the company.

The relationship between an organization's capital structure and its profitability is crucial, as decisions regarding capital structure can significantly impact long-term viability and profitability (Velnampy & Nireesh, 2012). Ahmed et al. (2023) found a substantial correlation between the total amount of debt and the total amount of assets that comprise the capital structure, indicating that businesses often rely heavily on debt for financing, which in turn affects their financial sustainability. The composition of an organization's capital structure is determined by the allocation of debt and equity. This ratio, or the proportion of total debt to total assets at book value, influences a company's risk level and profitability (Handoo & Sharma, 2014). Companies have long struggled with capital structure composition in their efforts to achieve balance and stability, and this challenge is not unique to water companies.

In this study, capital structure theory has been employed to analyze how businesses allocate their resources and organize their capital to optimize returns while controlling costs to ensure that benefits outweigh expenses. This theory is crucial to our investigation because it explains how budget plans can impact the performance of water projects. The assumption that financial and budget plans outline all activities, resources, equipment, and materials needed to achieve project objectives is fundamental to this research. Therefore, capital structure theory plays a crucial role in elucidating how capital accumulation planning techniques can be applied effectively and efficiently to enhance the performance of mega dam projects in Kenya.

2.2. Empirical Review and Hypothesis Development

A certified and well-developed budget controls project costs and creates a positive cash flow situation, as demonstrated by Kiiru et al. (2018) in their study using a descriptive research design. This research targeted stalled construction projects to investigate the effects of budget planning on project performance in Nakuru. They found that insufficient cash flow often leads to project delays and unexpected additional expenditures, increasing the likelihood of temporary suspensions in construction projects. This study contributes to our evaluation, highlighting that a dam construction project is unlikely to be completed on schedule without adequate budgeting.

Odhong (2018) aimed to determine how capital practices affected worker performance in Kenya's private security sector. Using a descriptive research methodology and a positivist research paradigm, with private security guards as the unit of observation, the study discovered a significant positive association between capital practices and employee performance. The study suggested integrating capital management techniques and information technology in a manner that complies with national capital development plan regulations and regulatory frameworks to improve worker performance and industry growth. This study enhances our understanding of the significance of capital planning practices in improving performance, making it highly relevant to this assessment.

According to a study by Sundararajan and Tseng (2017), education, culture, and capital status are the main factors affecting methods and approaches in construction project management. This study, which used a descriptive survey design, examined the effects of capital planning on project performance, focusing on construction projects in Sweden. However, the study found that many middle-level managers might not have sufficient power in their roles due to limited decision-making authority over certain areas of liability. In many construction organizations, middle management is granted extensive authority, which is related to the organization's higher level of authority and can impact how funds are allocated and used.

In their investigation, Unegbu et al. (2023) examined the degree of quality and cost management implementation, assessed its impact on construction project performance, and evaluated the factors affecting its implementation in Nigeria's construction industry. Quantitative research methods were employed, utilizing a questionnaire with 68 variables and 15 constructs, based on a five-point Likert scale. Data was collected from 260 respondents, and 242 valid responses were used for analysis, employing Microsoft Excel, SPSS, and LISREL. The structural equation model (SEM) analysis demonstrated a significant impact of quality and cost management on construction project performance, with the strongest correlation observed between project cost monitoring and control and construction phase performance.

Alkhlaifat et al., (2019) investigated the relationship between stakeholders' involvement in financial resource planning practice and performance of development projects, which included donor-funded water projects. The study was based on a review and analysis of previous studies linking the two main variables of the study. Among

other findings, the study established that stakeholders' involvement in financial planning practice of project activities was likely to influence performance of the targeted projects. More specifically, stakeholders' involvement in scheduling financial resources influenced project implementation by enabling specification and estimation of financial resources needed to complete project activities, sources of the financial resources, as well as flow of such resources at the most appropriate point during implementation, to avoid delay in project completion. The practice further provided an opportunity for project stakeholders to declare their contributions and express their expectations from other stakeholders, including project management. Developing such understanding was critical for preventing contractual disagreements, which may affect project implementation. Despite the in-depth analysis of previous studies, the study may be faulted for failing to confirm or refute the findings of previous studies conducted in various contexts. Failing to test research hypotheses connecting financial resource planning and performance of development projects led to weak and inaccurate conclusions. Furthermore, the study's dependent variable, namely, performance of development projects, which is different from performance of mega dam projects. This limits the extent to which the study informs the proposed one.

Ali (2019) investigated stakeholders' participation in National Government Constituency Development Fund (NG-CDF) projects in Wajir West constituency, Kenya and effect on the performance of such projects. One of its objectives was to establish how stakeholders' participation in resource planning, which included covered financial planning practice. The descriptive research design was deployed to guide the research process. Primary data were sourced from a sample of 78 participants, including community leaders, CDF committee, project management committee and county officials; using a self-administered questionnaire. Regression analysis was used to determine the relative importance of stakeholders' participation in various components of project implementation, including financial planning practice. Among other findings, the study reported that stakeholders' participation in financial planning had a positive and significant effect on the performance of the said projects. This suggests that increasing participation in financial resource planning was likely to improve project performance proportionately. The key stakeholders participated in estimation of funds requirements for planned project activities, identification of funding sources, estimation of time schedule for the flow of funds, as well as identification of financial risks and mitigation measures. Participation in financial resource planning practice enhanced confidence and trust among the project implementers, improved commitment to project objectives and credibility of performance. Despite this, the regression analysis focused on stakeholders' participation in resource planning in general. No effort was made to determine how participation in financial resource planning, which is a component of planning, influenced performance of the targeted projects. The study findings may be affected by the small sample size of 78 participants, which may have inflated the error margin, as indicated by the results.

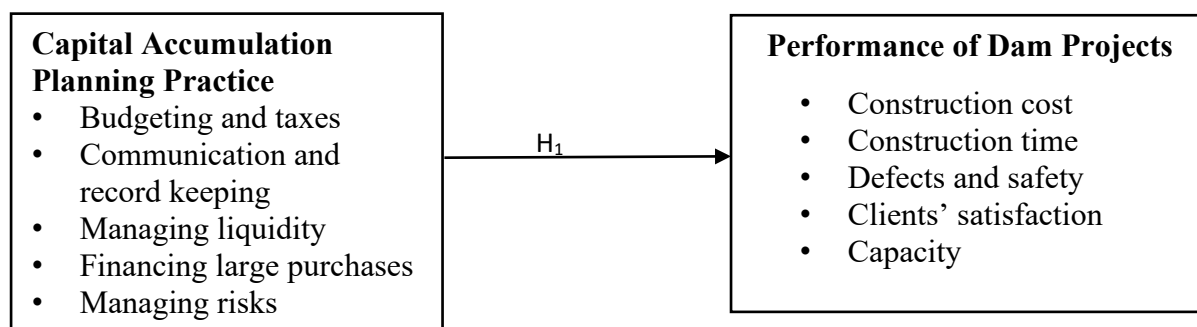
In the Likoni constituency of Kenya, Oketch and Owuor (2022) investigated the impact of stakeholder involvement in the project life cycle on the sustainability of National Government Constituency Development Fund (NG-CDF) projects. A key objective of the study was to assess how stakeholder participation in project planning influenced the sustainability of the targeted projects. The project planning process included setting goals, creating a budget, allocating resources, and estimating project duration. The study employed a descriptive survey design, integrating both quantitative and qualitative methodologies. Of the 120 individuals targeted for participation, 92 were successfully engaged in the study. The study involved project managers and members of the management committee. Primary data was collected using structured questionnaires and analyzed through descriptive, correlational, and inferential methods. The analysis aimed to test hypotheses linking various aspects of stakeholder involvement in the project life cycle to the sustainability of the targeted projects. The correlational analysis revealed a substantial, positive, and strong relationship between the sustainability of the NG-CDF projects and stakeholder involvement in project planning. Stakeholder participation in project planning significantly impacted the sustainability of the NG-CDF initiatives. To ensure project timeliness, stakeholders needed to assess the capacity of project teams in relation to the project's duration and resource availability. Notably, their participation contributed to better management decisions and higher odds of project ownership and completion. Despite this, the study focused on general NG-CDF projects, with no specific attention to water pan projects, which brings up the need for a study that is specific to water pan projects. Further, the study is reproachable for not testing the relationship between each component of project planning, including financial resource planning and sustainability of NG-CDF projects. This also brings up the need for a study to show how the practice of financial resource planning is likely to influence performance of mega dam projects.

In their study, Jaramillo and Alcázar (2013) assessed whether participatory budgeting has an effect on the quality of public services in Peru's water and sanitation sector. The aim of the study was to establish whether planning in financial budgeting for water projects had any significant influence on the quality of water and sanitation services provided by municipal utilities. Participatory budgeting is explained as, a process through public resources is assigned in a fair, rational, efficient, effective and transparent manner, to strengthen ties between state and civil society. A survey design guided the study; secondary data were obtained from seven national databases, while primary data were sourced through interviews with water and sanitation officers of sampled municipalities to validate secondary data and maximize variance in participatory budgeting indicators. The analysis revealed that planning practices in public budgeting process significantly correlated with the quality of services; meaning that stakeholders' participation in financial budgeting was likely to influence improvement in the quality of water services, particularly by enhancing ownership of project financial requirements, developing trust between stakeholders, ensuring that project plans reflect with real needs and priorities, and promoting transparency. Even though the study

reveals the importance of planning practices in project budgeting, the validity of findings may be limited by failure to capture voices of other individuals, besides water and sanitation officers. Besides, its findings provide limited evidence of about the extent to which planning practice in budgeting would influence performance of mega dam projects. Thus, based on the above empirical the study hypothesized that:

H₁: Capital accumulation planning practice have a significant effect on performance of dam projects in Kenya

Hence the following conceptual framework was developed



Independent Variable

Dependent Variable

Fig. 1. Conceptual Framework.

3. Material and methods

3.1. Sampling and Data Collection

The unit of analysis was registered civil engineers and land surveyors in Kenya while the unit of observation was the mega dam projects in Kenya that were initiated in 2013 to the time of the study. There are 25 mega dam projects initiated from the year 2013 to January 2023. For the purposes of key informant interviews, the secondary study population were senior management staff per project as they have governance mandate in the projects whereas the primary target included a total of 322 registered civil engineers and land surveyors in Kenya; Venas news 2019, www.lsb.or.ke 2018; 50% of the target population was used to arrive at a sample of 133 respondents, (Mora, 2019). This study employed stratified random sampling to select study sample. In this study, primary data was collected using a semi structured questionnaire because they are cost effective and convenient to collect and summarise responses (Dalati & Marx Gómez, 2018). Samples of questionnaire were administered or pilot tested to 16 respondents in Siyoi Muruny and Kasess Dams in West Pokot County.

3.2. Data analysis

The collected qualitative data was coded, and themes or concepts were noted once saturation was achieved. Quantitative data was analyzed using descriptive statistics, including frequency, percentages, and means. Summary graphs, pie charts, and frequency distribution tables were employed to illustrate the categorized data. Inferential statistics were conducted using correlation analysis. Additionally, multiple

regression analysis was utilized to predict the dependent variable based on the independent variables in this investigation.

4. Findings and Discussion

The researcher distributed 133 questionnaires to the respondents by the researcher assisted by 2 research assistants during data collection process and 90 were fully filled and returned to the researcher for analysis purposes. Thus, the response rate of was 93.7%. Sekaran & Bougie (2016) argues that a response rate of 50 percent is considered adequate, 60 percent good and above 70 percent very good.

4.1. Descriptive Statistics

The findings indicate a strong agreement on capital accumulation planning practices, with an overall mean above 4.0, reflecting confidence in financial planning, record-keeping, and budget considerations. Budgeting and tax compliance (mean = 4.24, SD = 0.81) and financial availability for construction (4.32, SD = 0.65) were rated highly, indicating efficient financial management. Large purchases for construction support also received a strong score (4.27, SD = 0.70), reinforcing liquidity adequacy. However, risk management structures (mean = 4.10, SD = 0.81) showed slightly lower agreement, suggesting the need for clearer frameworks to handle project uncertainties. Overall, capital accumulation planning was well-rated (4.03, SD = 0.64), highlighting effective financial strategies with minor areas for improvement in risk mitigation.

Table 1: Descriptive Statistics on Capital Accumulation Planning Practice

	Mea n	Std. Deviation
n=90		
During the planning practice, issues of budgets and applicable taxes as required by the law were factored	4.24	0.81
There exists a good record keeping and capital statements are always accessible and well communicated to the clients.	4.10	0.89
There's always readily availability of finances whenever it's required in the construction exercise.	4.32	0.65
Money is always available to enable the organization do large purchases to support the construction exercise.	4.27	0.70
There is an ambient structure known to the clients and construction workers on how to manage the seen and unseen project risks.	4.10	0.81
Capital accumulation planning practice	4.03	0.64

The findings indicate moderate agreement on the performance of mega dam projects, with an overall mean of 4.09 (SD = 0.61), suggesting a generally positive perception but with notable variability. Key aspects such as defect identification and adherence to safety measures (3.80, SD = 1.02) received relatively higher ratings, indicating some confidence in quality assurance. However, stakeholder cost agreements (3.47, SD = 1.10) and client satisfaction (3.50, SD = 1.13) showed moderate ratings with high variability, suggesting inconsistencies in meeting expectations. Similarly, project completion within the agreed timeline (3.54, SD = 1.09) and dam productivity for

beneficiaries (3.47, SD = 1.10) reflected mixed perceptions. These findings highlight the need for improved cost control, timely delivery, and enhanced stakeholder satisfaction to optimize the performance of mega dam projects.

Table 2: Descriptive Statistics on Performance of Mega Dam Projects

n=90	Mean	Std. Deviation
The dam is constructed based on the agreed cost by all the stakeholders.	3.47	1.10
The dam project was constructed on the agreed upon time.	3.54	1.09
Any defects on dam construction projects are put to light and safety measures adhered to.	3.80	1.02
The dam is constructed based on the client's satisfaction	3.50	1.13
The constructed dam is productive to the target beneficiaries.	3.47	1.10
Mega dam projects performance	4.09	0.61

4.2. Correlation Analysis

To determine the relationship between the independent variable (Capital accumulation planning practice) and the dependent variable (performance of mega dam projects in Kenya), this study employed Karl Pearson correlation analysis. The results are presented in Table 3. The findings in Table 3 reveal positive, and statistically significant correlation between the performance of mega dam projects and the capital accumulation planning approach ($r = .818$, $p < 0.05$). This strong correlation indicates that there is a considerable relationship between the performance of mega dam projects and the effort invested in capital accumulation planning practices.

Table 3 Correlation Results

	Performance of Mega Dam Projects	Capital Accumulation Planning Practice
Performance of Mega Dam Projects	1	
Capital Accumulation Planning Practice	.818**	1

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

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

4.3. Regression Analysis (Hypothesis Testing)

The performance of Kenya's major dam projects was treated as the dependent variable, with capital accumulation planning practice as the independent variable in the regression analysis. The model summary, ANOVA, and coefficient results are detailed in Table 4. The findings indicate that 66.9% of the variance in the performance of major dam projects in Kenya can be explained by capital accumulation planning practices ($R^2 = 0.669$). This supports the results shown in Table 4, which highlight a strong and positive relationship between the performance of Kenyan mega dam projects and capital accumulation planning practices. The regression ANOVA model confirms that

the suggested model is statistically significant and provides a strong fit for predicting the dependent variable ($F = 177.957$, $p = 0.000 < 0.05$). Further results reveal that capital accumulation planning practices significantly influence the performance of mega dam projects in Kenya ($\beta = 0.818$, $p = 0.000 < 0.05$), indicating that an increase in capital accumulation planning practice leads to improved performance of these projects.

Table 4: Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	0.976	0.236		4.128	0.000
Capital Accumulation Planning Practice	0.772	0.058	0.818	13.340	0.000
Model Summary					
R	0.818				
R Square	0.669				
Adjusted R Square	0.665				
Std. Error of the Estimate	0.350				
ANOVA for model fitness					
F	177.957				
Sig.	.000				

a Dependent Variable: Performance of Mega Dam Projects in Kenya

5. Discussion

The results indicated that budgetary concerns and relevant taxes, as mandated by law, are considered at every stage of the capital planning process. This aligns with Abd Elhameed's (2018) observation that project performance is often influenced by cost planning practices, including cost budgeting and cost estimation procedures. The findings revealed effective record-keeping, with capital statements consistently available and clients being informed. In fact, some clients prioritized cost control and certainty, highlighting the role of capital accumulation planning in determining raw material purchases, production processes, and marketing strategies. The project's budget is crucial, impacting both project planning and implementation phases. These results align with Unegbu et al. (2023), who emphasize the importance of estimating the cost of each task based on specific conditions to achieve accurate project estimates. Due to the various sources of uncertainty in a project, it is crucial to allocate funds for high-risk tasks that require less detailed information. Additionally, the results demonstrated that funds were consistently available, enabling the organization to make substantial purchases necessary for supporting mega dam construction activities.

6. Conclusions

The study pointed out that capital accumulation planning practice do not have a significant impact on the performance of mega dam projects in Kenya. However, the regression coefficient results revealed that the reported p -value was $0.000 < 0.005$ alpha p -Value. Therefore, the null hypothesis was rejected, suggesting that capital

accumulation planning practice had a significant impact on the performance of mega dam projects in Kenya.

7. Recommendations

Based on the results, the practice of capital accumulation planning had a positive and significant impact on the performance of mega dam projects in Kenya. Therefore, this study recommends that project management should strengthen the practice of capital planning. Particular emphasis should be placed on budgeting and taxes, communications and accounting, liquidity management, financing large purchases, and risk management options.

8. Recommendations for Further Studies

This study investigated the influence of capital accumulation planning practice on the performance of mega dam projects in Kenya. Future researchers may also consider introducing other variables such as monitoring and evaluation and time management planning practice and scheduling.

References

- Abd Elhameed, A. T. (2018). Analyzing the Project Management Body of Knowledge (PMBOK) through theoretical lenses: A study to enhance the PMBOK through the project management theories. *PM World Journal*, 6, 1-31.
- Ahmed, A. M., Sharif, N. A., Ali, M. N., & Hågen, I. (2023). Effect of firm size on the association between capital structure and profitability. *Sustainability*, 15(14), 11196.
- Ali, Y. A. (2019). *Influence of stakeholders role on the performance of national government constituency development fund projects in Wajir West constituency, Kenya* (Doctoral dissertation, UoN).
- Alkhlaifat, B., Abdullah, A. A., & Magassouba, S. M. (2019). Modeling impact of project management performance with among roles of project risk management and organizational culture on project success. *European Journal of Business and*, 11(36).
- Asegdew G. Mulat, S. A. (2017). Assessment of the Impact of the Grand Ethiopian Renaissance Dam on the Performance of the High Aswan Dam. *Journal of Water Resource and Protection*.
- Baurzhan, S., Jenkins, G. P., & Olasehinde-Williams, G. O. (2021). The economic performance of hydropower dams supported by the World Bank Group, 1975–2015. *Energies*, 14(9), 2673.
- Bongei, M., Sang, P., & Mutuku, M. (2024). Investigating the Influence of Project Initiation Management on Performance of Mega-dam Projects: Empirical Evidence from Kenya. *East African Journal of Business and Economics*, 7(1), 135-147.
- Bonnie, R., Lorenzon, M., & Thomas, S. (Eds.). (2023). *Living Communities and Their Archaeologies in the Middle East*. Helsinki University Press.

- Braeckman, J. P., Disselhoff, T., & Kirchherr, J. (2020). Cost and schedule overruns in large hydropower dams: an assessment of projects completed since 2000. *International Journal of Water Resources Development*.
- Dalati, S., & Marx Gómez, J. (2018). Surveys and questionnaires. *Modernizing the Academic Teaching and Research Environment: Methodologies and Cases in Business Research*, 175-186.
- Dalibi, S. G., Feng, J. C., Abubakar, S. G., Kumo, H. A., Danja, I. I., Mukhtar, A. A., & Inuwa, L. U. (2020, April). Socio-economic performances of mega construction projects (MCPs) in the light of sustainable development of Nigeria's built environment. In *IOP Conference Series: Earth and Environmental Science* (Vol. 495, No. 1, p. 012046). IOP Publishing.
- Datta, S. D., Sobuz, M. H. R., Nafe Assafi, M., Sutan, N. M., Islam, M. N., Mannan, M. B., ... & Hasan, N. M. S. (2023). Critical project management success factors analysis for the construction industry of Bangladesh. *International Journal of Building Pathology and Adaptation*.
- Emek, U. (2021). Public-Private Partnerships in Turkey. *The Regulation of Turkish Network Industries*, 459-476.
- García, M. A., Castro-Díaz, L., Villamayor-Tomas, S., & Lopez, M. C. (2021). Are large-scale hydroelectric dams inherently undemocratic?. *Global Environmental Change*, 71, 102395.
- Gitonga, Z. & Keiyoro, P. (2017). Factors Influencing the Implementation of Healthcare Projects. The case of Meru County, Kenya. *International Academic Journal of Information Sciences and project management*, 2 (1), pp259-280.
- Handoo, A., & Sharma, K. (2014). A study on determinants of capital structure in India. *IIMB Management review*, 26(3), 170-182.
- Haron, N. A., Devi, P., Hassim, S., Alias, A. H., Tahir, M. M., & Harun, A. N. (2017, December). Project management practice and its effects on project success in Malaysian construction industry. In *IOP Conference Series: Materials Science and Engineering* (Vol. 291, p. 012008). IOP Publishing.
- Ika, L. A., & Pinto, J. K. (2022). The "re-meaning" of project success: Updating and recalibrating for a modern project management. *International Journal of Project Management*, 40(7), 835-848.
- Jaramillo, M. & Alcázar, L. (2013). *Does participatory budgeting have an effect on the quality of public services? The case of Peru's water and sanitation sector*. IDB Working Paper Series No. IDB-WP-386, Inter-American Development Bank.
- Jørgensen, M. (2016). A survey on the characteristics of projects with success in delivering client benefits. *Information and Software Technology*, 78, 83-94.
- Kenya Broadcasting Corporation (2024), Thwake Dam project hits milestone with completion of embankment area, <https://www.kbc.co.ke/thwake-dam-project-hits-milestone-with-completion-of-embankment-area/>
- Kiiru, S. M., Kamau, J. G., & Nzioki, P. M. (2018). Effect of budget planning on financial performance of small and medium enterprises in Nakuru town central business district. *International Journal of Business Management and Processes (ISSN 2616-3209)*, 4(2).
- Matos, C. R., Carneiro, J. F., & Silva, P. P. (2019). Overview of large-scale underground energy storage technologies for integration of renewable energies and criteria for reservoir identification. *Journal of Energy Storage*, 21, 241-258.

- Mchopa, A. (2021). Research Methods: Qualitative and Quantitative Approaches *Journal of Co-operative and Business Studies (JCBS)*, 5(1).
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, 48(3), 261-297.
- Moore, M. (2023). Water grabbing as a form of capital accumulation. In *Water struggles as resistance to neoliberal capitalism* (pp. 51-84). Manchester University Press.
- Mujahid, M., & Akhtar, K. (2014). Impact of capital structure on firms financial performance and shareholders wealth: Textile sector of Pakistan. *International Journal of Learning and Development*, 4(2), 27.
- National Environment Management Authority (2019), National Environment Act, No. 5 of 2019, <https://nema.go.ug/sites/all/themes/nema/docs/National%20Environment%20Act,%20No.%205%20of%202019.pdf>
- Ndachi, H. N., & Kimutai, G. (2018). Project management practices and implementation of health projects in public hospitals in Nyeri County, Kenya. *The Strategic Journal of Business & Change Management*, 2153.
- Odhong, E. A. (2018) *Influence of Capital Practices on Employee Performance in the Private Security Industry in Kenya*. (PhD Thesis, Jomo Kenyatta University of science and Technology, Nairobi, Kenya)
- Odhong, E. A. (2018). *Influence of Human Capital Practices on Employee Performance in the Private Security Industry in Kenya* (Doctoral dissertation, JKUAT-COHRED).
- Oketch, G.O. & Owuor, D.E. (2022). Stakeholders' involvement in project life-cycle and sustainability of national government constituency development fund projects in Kenya: A case study of Likoni Constituency. *The Strategic Journal of Business and Change Management*, 9 (2), 195-221.
- Shi, B., Aidana, Y., Xu, X., Wang, Y., & Yu, D. G. (2020, December). Systematic Arrangement of Courses to Improve students' Professional Innovation Capability. In *2020 6th International Conference on Social Science and Higher Education (ICSSHE 2020)* (pp. 539-543). Atlantis Press.
- Sundararajan, S. K., & Tseng, C. L. (2017). Managing project performance risks under uncertainty: Using a dynamic capital structure approach in infrastructure project financing. *Journal of Construction Engineering and Management*, 143(8), 04017046.
- Ukhriyawati, C. F., Ratnawati, T., & Riyadi, S. (2017). The influence of asset structure, capital structure, risk management and good corporate governance on financial performance and value of the firm through earnings and free cash flow as an intervening variable in banking companies listed in Indonesia Stock Exchange. *International Journal of Business and Management*, 12(8).
- Unegbu, H. C., Yawas, D., & Dan-asabe, B. (2023). An Investigation of the Impact of Quality and Cost Management on Project Performance in the Construction Industry in Nigeria. *Jurnal Mekanikal*, 39-58.
- Velnampy, T. D., & Niresh, J. A. (2012). The relationship between capital structure and profitability.

Wachira, R. N. (2018). *Financial sustainability determinants of government owned entities in Kenya* (Doctoral dissertation, JKUAT-COHRED).