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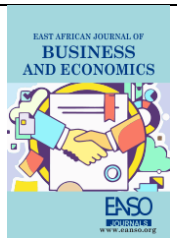

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Original Article

Investigating the Influence of Project Initiation Management on Performance of Mega-dam Projects: Empirical Evidence from Kenya

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ABSTRACT

Performance of large projects including mega-dams could be associated with strict adherence to project life cycle (PLC) phases while considering the risks such as displacement of people and natural ecosystem disturbance. Understanding these risks helps project managers and stakeholders make informed decisions thus creating a positive legacy for the project in the long run. The main objective of the research was to determine how project initiation management influences the performance of mega-dam projects in Kenya. This study was guided by positivist research philosophy. A descriptive cross-sectional survey research design was adopted. In this study, the unit of analysis was 18 mega-dam projects launched and completed across Kenya as listed under the Ministry of Water, Sanitation, and Irrigation (MoWSI) while the unit of observation was the respective three officials (project manager, project engineer, geospatial engineer) in the MoWSI. A Census of all mega-dams completed in Kenya was conducted. In addition, the study purposively interviewed 5 key stakeholders including the cabinet secretary, permanent secretary from the MWSI, donor, contractor, and one randomly selected beneficiary from the community with the target mega-dam. This formed a total sample size of 180 respondents. Primary data was collected using the semi-structured questionnaires as well as the Key Informant Interview (KII) guide. Quantitative and qualitative data from multiple sources and perspectives provided a more comprehensive and robust understanding. Pretesting was done by way of pilot testing to ascertain the validity and reliability of the tools. Descriptive and inferential statistics were used to summarize and describe the key characteristics of the data, as well as draw conclusions and make inferences. Correlation findings showed that project initiation management and performance of selected mega-dam projects in Kenya have a strong positive and significant relationship ($r= 0.874$, $p<0.05$). In addition, regression findings showed that one-unit rise in project initiation management corresponds to a 0.433 improvement in the performance of these mega-dam projects. Based on the findings, the study concluded that project initiation management positively and significantly influences the performance of selected mega-dam projects in Kenya. This study therefore recommends that project managers should give priority to project initiation management.

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INTRODUCTION

Large dams have been promoted as sources of hydropower and water supplies. Mega-dams are common in developing nations, impacting people's livelihoods positively or negatively (Kirchherr & Charles, 2016). Understanding community perceptions is crucial, as they guide decision-making. Major dams often face financial challenges, with cost overruns of 56%, burdening inhabitants, especially in the world's poorest countries (ICOLD, 2022). Mega-dams' construction involves significant cost overruns, delays, and challenges in resettling communities, leading to social and economic disputes. Downstream impacts on water availability for agriculture and fisheries also pose challenges (Vos & Bellù, 2019).).

The project life cycle of mega-dams is complex, requiring careful management to mitigate risks. Failures can lead to catastrophic consequences, including loss of life, property damage, and environmental harm, especially in areas prone to natural disasters (earthquakes, landslides) (Amies & Senaratne, 2023). Kenya is undertaking an ambitious mega-dam construction operation to address water deficit challenges, enhance food security, and increase hydropower production (Ngotho, 2022). The government has allocated significant funds for dam construction, but the performance of these mega-dams is reported to have dwindled.

The construction of mega-dams in Kenya has led to significant social and cultural impacts, including deaths, displacement, and loss of cultural heritage sites. Poor engineering and maintenance have resulted in tragedies, such as the Solai dam burst (African Development Bank, 2020). These performance challenges are best addressed through careful planning, design, and management of mega-dam projects, as well as ongoing monitoring and maintenance to ensure that the mega-dams are functioning as intended. The project initiation phase calls for defining the project, creating a business case, and obtaining approval are the key characteristics of this phase (Meredith et al., 2017). The project team may carry out a feasibility assessment, draft a project charter, decide on project management tools, or decide on important stakeholders during this period. The project team ought to have a thorough awareness of the project's objectives, needs, and hazards by the time this phase is over.

In order to understand the performance of selected mega-dam projects in Kenya, this paper explored the influence of project life cycle management specifically project initiation management.

Statement of the Problem

Mega-dams play a crucial role in managing water resources, especially in regions like Kenya with unevenly distributed and seasonally variable water sources. However, the implementation of

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mega-dam projects in Kenya has faced substantial challenges, raising concerns about their overall effectiveness. The Arror and Kimwarer mega-dams, initially budgeted at Sh38 billion and Sh28 billion, respectively, stand out as stalled projects, despite being essential components of Kenya's water infrastructure plans (Baraza, 2020). Allegations of anomalies and improprieties surround these projects, as revealed by a parliamentary committee's report on the inquiry into the status of mega-dams in Kenya (Republic of Kenya, 2019). The Itare Dam Project's stall due to the project contractor's bankruptcy further underscores financial instability as a hindrance to mega-dam construction.

In addition to financial challenges, ineffective and expensive financing models, as well as unresolved issues related to resettlement action plans (RAP), have impeded progress. The social impacts of existing mega-dams in Kenya, with over 150 reported deaths and more than 300,000 people displaced (Kenya Human Rights Commission, 2018), highlight the urgent need for a comprehensive understanding of the factors influencing the performance of these projects.

While studies globally, regionally, and locally have explored aspects of project life cycle management and performance, conceptual, contextual, and methodological gaps persist. Existing research often focuses on specific components of project life cycle management, risk management, or technological innovation, leaving an incomplete understanding of their interconnected dynamics. Moreover, the majority of studies either lack empirical evidence or rely on small sample sizes and qualitative analyses. The current study sought to address these gaps by comprehensively examining the interrelationships between project life cycle management specifically project initiation management, and the performance of selected mega-dam projects in Kenya. By doing so, it contributes valuable insights to the field of project management and provides practical recommendations for enhancing the success and sustainability of mega-dam projects in the country.

Purpose of the Study

To assess how project initiation management influences the performance of mega-dam projects in Kenya.

Hypotheses of the Study

$H0_1$: Project initiation management has no significant influence on the performance of selected mega-dam projects in Kenya.

LITERATURE REVIEW

Theoretical Literature

Theory of Change

Throughout the 1990s, the Aspen Institute Roundtable on Community Transformation developed the Theory of Change to describe and evaluate extensive network operations. Since 1980, eminent methodologists including Michael Quinn Patton, Huey Chen, Heléne Clark, Carol Weiss, and Peter Rossi have been thinking about how to apply program theories to evaluation. The Roundtable's initial efforts were focused on overcoming the challenges of evaluating intricate network activity.

This theory defines each step needed to achieve a specific long-term objective (Harris, 2005). A change framework/pathway of change, which is a realistic representation of the change process, is a series of related phases that are alternatively known as results, products, events, or requirements (Akpan & Chizea, 2002).

A thorough description of how and why a desired change is predicted to occur in a setting can be found in a theory of change (Andersen, 1996). It focuses on closing the "missing middle" between what a change or program effort performs (its interventions or activities) and how they lead to the achievement of preferred goals (Chizea, 2002). This theory is relevant to the study because it encourages mega-dam construction teams or companies to first determine the ideal long-term project or goal performance before working backward from these to determine all the conditions (outcomes) that must exist (and how these casually relate to one another) for the goals

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to be achieved (Mintzberg & Waters, 1996). Making sure project life cycle management (initiation,) is used effectively and efficiently while managing emerging risks.

Empirical Literature Review

Nowadays, developing nations are planning and executing ambitious investment projects as a result of an optimistic economic outlook. The building of dams is one of the most important investment initiatives in this respect. Unfortunately, dam-building projects are unable to ensure effective project delivery owing to vague and unknown project scope requirements from the outset. Gebremeskel (2020) looked at scope-defining techniques for dam construction projects in the Tigray area. This study sought to examine the breadth of scope definition methods used in infrastructure projects utilizing PDRI, the challenges involved in defining scope, and the negative consequences of poor scope definition practices on projects to build dams in the Tigray Region. The results of the study revealed a number of difficulties for scope definition practices that were investigated using data from a questionnaire survey, supplemented by interviews and case studies, and analysed using descriptive mean score statistics, including a lack of resources for scope definition, a lack of participation from all relevant stakeholders, a lack of trained and competent professionals, a failure to adhere to formal decision approval procedures, and a lack of coordination. The lack of research on how project life cycle management and risk management techniques affect the effectiveness of dam projects in Kenya is the study's knowledge gap. By revealing the best methods for managing dam projects in Kenya using lifecycle management and reducing the risks involved with these projects, the study seeks to close this knowledge gap.

Towet et al. (2022) studied the effect that starting the Sabasaba urban water supply project had on its ultimate success in Kenya's Muranga County. The World Bank's Output-Based Assistance (OBA) strategy was employed to guarantee the project's success. The purpose of this research was to examine how the OBA-funded Sabasaba urban water supply project fared before, during, and after its inception, planning, execution, and monitoring phases. The researchers used a predictive correlation method. The 56 participants were all part of the project's implementing agency, Murang'a South Water and Sewerage Company. A standardized questionnaire was used to collect the data from the respondents. The results of the investigation were analyzed using SPSS. Project initiation was found to have a statistically significant effect on project outcomes. When controlling for other variables, the data showed that a one-unit difference in project start-up resulted in a 0.404-unit difference in project success. The study's lack of attention to the mega-dam projects leaves important questions unanswered. It also didn't look at how mega-dam projects in Kenya fared when risk management and project life cycle management were merged.

The growing complexity of projects is a major cause for alarm and a major obstacle to their efficient completion. Defining the appropriate management abilities for project managers has become crucial for meeting these issues. Research on management skills, challenges, and outcomes in Pakistani engineering infrastructure projects was undertaken by Khattak and Mustafa (2019). The first stage of the inquiry involved interviewing 32 subject-matter experts using a tried-and-true semi-structured questionnaire. At this stage, the first essential pieces of the problem were identified. Then, the skill sets required to overcome these challenges and boost performance were pinpointed. In the final phase, we established minimum skill levels for each category of challenge. Phase two involved reaching out to 85 "project managers" for feedback on finished engineering infrastructure projects for the Pakistani public sector. Management skills and the level of difficulty of the project were shown to have significant effects on outcomes. Among the observed gaps in knowledge is the fact that Kenyan mega-dam projects seldom consider the effects of project life cycle management approaches. Project life cycle management and dam project performance in Kenya were also not

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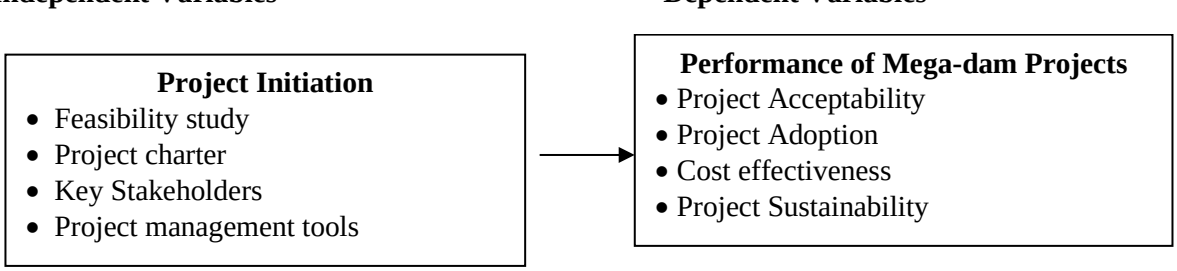
investigated, nor was the moderating influence of risk management approaches. This research aims to fill that void by analysing how risk management methods and project life cycle management affect the success of mega-dam projects in Kenya.

Conceptual Framework

The conceptual framework shows how the project initiation relates with the dependent variable that is the performance of the mega dam projects. *Figure 1* presents project planning and their respective indicators. In sum therefore, both the more recent project performance studies and the traditional project performance analysis are used to provide significant insights into upgrading this conceptual framework.

Figure 1: Conceptual framework



Source: Researcher (2023)

RESEARCH METHODOLOGY

This study was guided by positivistic research philosophy which holds the view that the reality is stable and can be observed and explained from an objective point of view (Flick, 2018). The study gathered both qualitative and quantitative data with highly structured instruments from fairly large measures measured on the Likert scale. This study adopted a descriptive cross-sectional survey research design. Descriptive cross-sectional surveys measure independent, moderating, and dependent factors all at once with the same questionnaire, and can be conducted on the full population or a sample of it (Bhattacherjee et al., 2016). The study's target population was the 18 mega-dam projects launched and completed across Kenya as listed under the Ministry of Water, Sanitation, and Irrigation (MoWSI).

Mega-dam projects form the unit of analysis. From the available statistics as indicated in the respective annual reports (2022) of each meg project, there are a total of 18 mega-dam projects completed in Kenya as of 31st December 2022. The unit of analysis was 18 mega-dam projects launched and completed across Kenya as listed under the Ministry of Water, Sanitation, and Irrigation (MoWSI) while the unit of observation was the respective three officials (project engineer, project manager, geospatial engineer) in the Ministry of Water, Sanitation and Irrigation. For qualitative data, the study also interviewed key stakeholders including the cabinet secretary as well as the permanent secretary from the MWSI, donor, contractor, and beneficiary from the community who were involved with the construction and completion of the target mega-dams in Kenya.

A census was employed where all completed mega-dams in Kenya were studied. This method is favoured because it avoids selection or locational bias. Purposive sampling was used to select three officials (project engineer, project manager, geospatial engineer) and seven stakeholders in the MoWSI totalling 10 individuals from each of the 18 selected mega-dam. This formed a total of 180 respondents. The study also interviewed 5 key stakeholders including the cabinet secretary as well as the permanent secretary from the MWSI, donor, a contractor, and one beneficiary (who was randomly selected from the community) who were involved with the construction and completion of the target mega-dams in Kenya. Thus, the total sample size was 185 respondents.

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Primary data was gathered using semi-structured questionnaires. Data was input into Excel, where it was cleaned, organized, and coded before being imported into SPSS version 26 for analysis. It's planned to gather both qualitative and quantitative information. The study used content analysis and thematic analysis of qualitative data. For inferential analysis, the study employed Pearson correlation and regression approaches

RESEARCH FINDINGS

Five interviews were conducted and 180 questionnaires were issued. Out of 180, a total of 163 questionnaires were completely filled and returned to the researcher and the interviews were successfully completed. This gave a response rate of 168 which translates to 90.6%.

The purpose of descriptive analysis is to give background to the study before carrying out the analysis. In this section, the study presents findings on Likert scale questions where respondents were asked to indicate their level of agreement with various statements to establish the influence of project life cycle management on the performance of mega-dam projects in Kenya. A 5-point Likert scale was employed, ranging from 1 (strongly disagree) to 5 (strongly agree). To interpret the findings, means and standard deviations were utilized. A mean value falling within the range of 1 to 1.4 indicates a strong disagreement, 1.5 to 2.4 reflects disagreement, 2.5 to 3.4 represents a neutral stance, 3.5 to 4.4 signifies agreement, and 4.5 to 5 corresponds to a strong agreement.

When evaluating the spread of responses, the study utilized standard deviation. A small standard deviation (<2) suggests that the majority of data points are closely clustered around the mean, indicating low variability. Conversely, a larger standard deviation (>2) indicates that data points are more widely distributed from the mean, suggesting higher variability. By incorporating these statistical measures, the study aims to offer a nuanced comprehension of respondents' viewpoints regarding the impact of project life cycle management on the performance of mega-dam projects in Kenya.

Project Initiation Management

The first objective of the study was to assess how project initiation management influences the performance of selected mega-dam projects in Kenya. This section presents descriptive findings on the influence of project initiation management on the performance of mega-dam projects in Kenya. On Likert scale questions, respondents were asked to indicate how far they agree or disagree with the statement by ranking their answer on a scale of 1-5. *Table 1* presents a summary of the findings where means and standard deviations were used.

In the assessment of the feasibility study for the Mega-dam project, respondents expressed a high level of agreement (means above 3.5) that: the feasibility study was comprehensively conducted. This indicates a strong consensus among participants regarding the thoroughness of the feasibility assessment. Additionally, operational feasibility was notably acknowledged, with respondents strongly agreeing that it was carried out effectively. The technical feasibility of the dam was also positively evaluated, as respondents strongly agreed that it was adequately conducted. These results are in agreement with the findings of Liu et al. (2018) who established that feasibility study is a key aspect of project initiation that should be put into consideration. However, a neutral stance was observed (Means between 2.5 and 3.4) concerning whether the feasibility study considered environmental impacts comprehensively, and a similar sentiment was noted regarding the consideration of sustainability during the feasibility study.

Moving to the Project Charter, respondents strongly agreed (means above 4.5) that key stakeholders approved the Project Charter, demonstrating a high level of consensus. The project charter was perceived as a key tool for aligning project objectives with government goals. In addition, clear communication of project roles and responsibilities was also affirmed by the

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respondents, with a strong agreement. However, a more nuanced perspective emerged regarding the outlining of the project's scope and schedule, where respondents expressed agreement (Mean=3.810, SD=1.403). Conversely, the constant referral to the project charter as a guide during project implementation yielded a lower level of agreement (Mean=2.988, SD=1.155). Towet et al. (2022) established that a project charter is a crucial document that formally authorizes the existence of a project, provides a clear understanding of its objectives, and outlines the roles and responsibilities of the project team.

Table 1: Project Initiation Management

Feasibility study (B1A)	Mean	Std. Dev.
A feasibility study for this Dam was comprehensively done.	4.172	1.215
The sustainability of this Mega-dam project was considered during the feasibility study	3.417	1.332
The feasibility study for the Dam considered environmental impacts comprehensively.	3.485	1.34
Operational feasibility for this Dam was carried out	4.184	1.14
Technical feasibility for this Dam was adequately carried out	4.110	1.247
Project charter (B1B)		
The key stakeholders of this Mega-dam project approved the Project Charter.	4.632	0.484
The project's charter clearly outlined the Dam project's scope and schedule.	3.810	1.403
The implementing team constantly referred to the project charter as a guide during project implementation	2.988	1.155
The project charter played a pivotal role in aligning project objectives with the government goals.	4.129	1.187
The project charter facilitated clear communication of project roles and responsibilities.	4.571	0.497
Key stakeholders		
The key stakeholders were involved in decision-making during the project initiation process.	3.123	1.143
Conflicts and disagreements during the project initiation process were handled by the key stakeholders.	3.178	1.257
The engagement of key stakeholders influenced the project's alignment with organizational goals.	4.620	0.487
The involvement of key stakeholders enhanced the project's responsiveness to changing requirements.	3.117	1.146
Key stakeholders played a key during the mega-dam project implementation.	4.546	0.499
Project management tools		
Gantt charts were effectively used during project initiation.	4.834	0.687
A checklist of key issues was available during project initiation	3.650	1.505
The project management software was available during for initiation of the project.	3.295	1.591
The project tracking was effectively done during project initiation and implementation.	3.313	1.522
The project progress reporting was consistently done	3.221	1.536

Regarding key stakeholders, respondents agreed that the engagement of key stakeholders significantly influenced the project's alignment with organizational goals. Similarly, there was a strong affirmation that key stakeholders played a pivotal role during the implementation of the mega-dam project. However, a neutral stance was observed, with mean scores falling between 2.5 and 3.4, regarding whether conflicts and disagreements during the project initiation process were effectively handled through the involvement of key stakeholders. Additionally, neutrality prevailed concerning whether the participation of key stakeholders enhanced the project's responsiveness to changing requirements and whether key stakeholders were actively

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involved in decision-making during the project initiation process. These findings resonate with the insights of Khattak and Mustafa (2019), who, in their research, emphasized the integral role of key stakeholders across all stages of the project life cycle. Their work supports the notion that successful project outcomes are intricately linked to the active engagement of key stakeholders, reinforcing the significance of their involvement in decision-making processes and conflict resolution mechanisms throughout the project's initiation and implementation phases.

In the realm of project management tools, respondents expressed a strong agreement (M= 4.834, SD= 0.687) that Gantt charts were effectively utilized during project initiation, indicating a cohesive perspective among participants. Furthermore, agreement was observed regarding the availability of a checklist of key issues during project initiation (M= 3.650, SD= 1.505). However, a neutral stance emerged regarding the effectiveness of project tracking during initiation and implementation, the availability of project management software for initiating the project, and the consistency of project progress reporting. These study findings align with the research of Liu et al. (2018), highlighting the intricate interplay between governmental and market forces in shaping the governance system of mega-projects in China. Liu et al.'s insights emphasize the importance of considering the dynamic evolution of governance structures throughout various project development phases. Additionally, Towet et, al. (2022) underscored the significant impact of management skills and project complexity on outcomes, emphasizing the need for a nuanced understanding of these factors.

The feedback from the Key informants provides valuable insights into the importance and key elements of project initiation management in the context of mega-dam projects in Kenya. As one informant stated, "*Project initiation management is a critical phase in the success of mega-dam projects in Kenya, as it sets the foundation for the entire project lifecycle*." Their remarks highlight the foundational role of the initiation phase in determining the trajectory of a project. Another informant emphasized, "*Effective communication and collaboration with stakeholders help address concerns, mitigate potential conflicts, and foster a positive project environment*." This engagement fosters collaboration, builds trust, and lays the groundwork for successful project execution.

Furthermore, the informants stressed the significance of thorough planning and preparation during the initiation phase. One informant noted, "*Properly defining project scope, objectives, and resource requirements at the outset is critical. It provides clarity and direction, enabling efficient project planning and execution."* By investing time and effort in comprehensive project initiation processes, project teams can mitigate risks, anticipate challenges, and proactively address issues before they escalate, thus enhancing the likelihood of project success.

Performance of Mega-dam projects

The dependent variable in this study was the performance of selected mega-dam projects in Kenya. This section therefore presents descriptive findings on the performance of selected mega-dam projects in Kenya. On Likert scale questions, respondents were asked to indicate how far they agree or disagree with the statement by ranking their answer on a scale of 1-5. *Table 2* presents a summary of the findings.

In the assessment of Project acceptability, respondents generally agreed that the dam project's goals and objectives were clear and well-defined, and upon completion, the project was acceptable to stakeholders. The perceived success in achieving intended outcomes, adherence to planned timelines and budget were also acknowledged. However, a neutral stance emerged regarding whether the project has been embraced by the local community. This echoes the importance of community acceptance and involvement in project success, as emphasized by literature such as studies by Mitchell and Nicholas (2015).

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Table 2: Performance of Mega-dam projects

Project acceptability	Mean	Std. Dev.
On completion, the project was acceptable to stakeholders.	3.619	1.423
The dam project goals and objectives were clear and well-defined	4.036	1.369
Project Adoption		
The dam project was implemented within the planned timeline and budget.	3.803	0.986
The dam project is successful in achieving its intended outcomes	4.294	0.935
The project has been embraced by the local community	3.202	1.252
Cost-effectiveness		
The dam project was completed within the allocated budget.	4.251	1.084
The project team consistently monitored and controlled costs, ensuring that the budget remained intact.	4.589	0.844
Cost-benefit analyses were regularly conducted to evaluate the financial efficiency of the dam project.	3.963	1.211
Project sustainability		
The mega-dam project outcomes are sustainable after project completion.	3.711	1.27
There was adequate planning for the maintenance and upkeep of project outcomes.	4.036	1.121
Stakeholders were trained to ensure the sustainability of dam project outcomes.	4.582	0.494

Turning to cost-effectiveness, a strong agreement was observed among respondents regarding the project team's consistent monitoring and control of costs to ensure budget adherence. Furthermore, respondents agreed that the dam project was completed within the allocated budget, with regular cost-benefit analyses conducted to assess financial efficiency. These practices align with the literature, where effective cost management is recognized as vital for project success (Kerzner, 2017).

Regarding project sustainability, respondents strongly agreed that stakeholders were trained to ensure the sustainability of dam project outcomes. Additionally, they concurred that there was adequate planning for the maintenance and upkeep of project outcomes, contributing to the overall sustainability of the mega-dam project. This resonates with the sustainability literature, which emphasizes the importance of capacity building and long-term planning for project outcomes (Lehtonen et al., 2020).

Inferential Statistics

This section presents the relationship between the study variables employing both regression analysis and correlation analysis. To ascertain the appropriateness of the data for regression, the researcher initiated the process by conducting diagnostic tests. These tests were pivotal in evaluating the robustness and reliability of the dataset, ensuring its suitability for subsequent regression analysis.

The study computed Correlation analysis to determine the strength and the direction of the relationship between the variables being studied. If the correlation values are $r = \pm 0.1$ to ± 0.29 then the relationship between the two variables is small, if it is $r = \pm 0.3$ to ± 0.49 the relationship is medium, and when $r = \pm 0.5$ and above there is a strong relationship between the two variables under consideration (Schober et al., 2018). Table 3 presents the findings obtained.

The findings show that project initiation management and performance of selected mega-dam projects in Kenya have a strong positive and significant relationship ($r = 0.874$, $p<0.05$). The relationship was considered significant since the p-value (0.000) was less than the selected level of significance (0.05). This implies that project initiation management has a significant effect on the performance of selected mega-dam projects in Kenya. The findings agree with Gebremeskel (2020) who argues that project initiation management influences project performance. The study established that Lack of research on how project life cycle management and risk management techniques affect the effectiveness

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of dam projects in Kenya is the study's knowledge gap.

Table 3: Correlation Analysis

		Project Performance	Project Initiation Management
Project Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	163	
Project Initiation Management	Pearson Correlation	.874**	1
	Sig. (2-tailed)	.000	
	N	163	163

The specific objective of the study was to assess how project initiation management influences the performance of selected mega-dam projects in Kenya. The associated null hypothesis was that Project initiation management has no significant relationship with the performance of selected mega-dam projects in Kenya. A univariate analysis was conducted in which the performance of selected mega-dam projects in Kenya was regressed on project initiation management.

The R-squared depicted the variation in the dependent variable that can be explained by the independent variables. The greater the value of R-squared the greater the effect of the independent variable. The R Squared can range from 0.000 to 1.000, with 1.000 showing a perfect fit that indicates that each point is on the line.

Table 4: Model Summary for Project Initiation Management

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491[a]	.241	.239	.69655

a. Predictors: (Constant), Project Initiation Management

As indicated in *Table 4*, the R-squared for the relationship between Project initiation management and the performance of selected mega-dam projects in Kenya was 0.241; this is an indication that at 95% confidence interval, 24.1% of the variation in the performance of selected mega-dam projects in Kenya can be attributed to changes in project initiation management. Therefore, project initiation management can be used to explain 24.1% of changes in performance of selected mega-dam projects in Kenya but there are other factors that can be attributed to 75.9% change in performance of selected mega-dam projects in Kenya.

The analysis of variance was used to determine whether the regression model was a good fit for the data. It also gave the F-test statistic; the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables.

Table 5: ANOVA for project initiation management

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.87	1	45.87	299.80	.000[b]
	Residual	24.735	161	0.153		
	Total	70.605	162			

a. Dependent Variable: Performance of mega-dam projects
b. Predictors: (Constant), Project initiation management

From the analysis of variance (ANOVA) findings in *Table 5*, the study found that Prob>F1,161= 0.000 was less than the selected 0.05 level of significance. This suggests that the model as

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constituted was fit to predict the performance of selected mega-dam projects in Kenya. Further, the F-calculated, from the table (299.80) was greater than the F-critical, from the F-distribution tables (3.900) supporting the findings that project initiation management can be used for the performance of selected mega-dam projects in Kenya.

The coefficients table in *Table 6* was utilized to construct the regression model. It provides a detailed presentation of the coefficients associated with the study variable.

Table 6: Beta Coefficients for Project Initiation Management

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.069	.174		11.881	.000
	Project initiation management	.433	.045	.491	9.723	.000

a. Dependent Variable: Performance of selected mega-dam projects in Kenya

From the results in *Table 6*, the following regression model was fitted.

$Y = 2.069 + 0.433\ X_1$

(X_1 is Project initiation management)

The constant (2.069) implies that if project initiation management were held constant at zero, the baseline performance of mega-dam projects in Kenya would be 2.069 units. The coefficient for project initiation management (0.433) indicates the impact of a unit improvement in project initiation management on the performance of selected mega-dam projects in Kenya. Specifically, a one-unit rise in project initiation management corresponds to a 0.433 improvement in the performance of these mega-dam projects. The statistical significance of project initiation management is underscored by its P-value, which is reported as 0.000, falling below the set 0.05 significance level. This suggests that project initiation management significantly influences the performance of mega-dam projects in Kenya. Consequently, the study rejected the null hypothesis, opting for the alternative hypothesis, asserting that project initiation management has a positive and significant impact on the performance of selected mega-dam projects in Kenya.

CONCLUSIONS

The first null hypothesis test was 'Project initiation management has no significant relationship with performance of selected mega-dam projects in Kenya". The study found that project initiation management is statistically significant in explaining the performance of selected mega-dam projects in Kenya'. The influence was found to be positive. This means that unit improvement in project initiation management would lead to an increase in the performance of selected mega-dam projects in Kenya'. Based on the findings, the study concluded that project initiation management positively and significantly influences the performance of selected mega-dam projects in Kenya.

Knowledge Contribution

The study has significantly contributed to the existing body of knowledge by addressing knowledge gaps identified at the outset. One notable gap pertained to the integration of environmental considerations in feasibility studies. The findings revealed that while technical and operational feasibility were adequately addressed, the environmental impact was not comprehensively considered. This contribution underscores the need for a more holistic approach to environmental assessments during the initiation phase of mega-dam projects.

Stakeholder engagement and conflict resolution emerged as another knowledge gap, with neutrality in responses regarding whether conflicts during the project initiation process were handled via key stakeholders. The study's

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contribution lies in highlighting the importance of structured stakeholder engagement approaches, especially in conflict resolution during the initiation phase.

Recommendations

The study recommends management of mega-dam projects in Kenya develop a detailed and comprehensive project plan during the initiation phase. This should include a thorough risk assessment, stakeholder analysis, and a clear outline of project objectives and milestones. In addition, provide training programs for project managers and relevant stakeholders involved in the initiation phase. This ensures that they have the necessary skills and knowledge to effectively plan and initiate mega-dam projects.

Recommendations for Further Studies

This study was limited to determining the influence of project life cycle management on the performance of the mega-dam projects in Kenya. The study thus recommends a similar study to be conducted in other projects in the sectors of the economy. Also, risk management practice was used as the moderating variable; the study thus recommends the use of a different moderator such as technology or organization culture. Also, the study was limited to four components of project life cycle management which explained 73.9% of all variation in performance of the mega-dam projects in Kenya. There is therefore need for a study to be conducted on other factors that can explain the remaining 26.1% variation in the performance of the mega-dam projects in Kenya

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