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ABSTRACT

This study investigated the influence of project management capabilities and sustainability of water projects funded by the Embu County Government, Kenya. The study sought to determine the influence of resource allocation, stakeholder participation, management commitment, and digital inclusion on the sustainability of water projects funded by the Embu County Government, Kenya. The resource-based view, stakeholder theory, agency theory, and the technology acceptance model were used to underpin the study. A descriptive survey research design was adopted targeting 6 water projects with a target population of 167 project administrators, members of committees from these projects, local leaders, and operating staff from water projects being implemented by Embu County. The sample size of 100 respondents determined scientifically will be selected through stratified random sampling. Primary data was gathered using a structured questionnaire that will have undergone pilot testing. The findings established that that resource allocation, management commitment and digital inclusion have a significant impact on sustainability of water projects. Finally, stakeholder participation does not influence significantly on sustainability of water projects. The study concludes that appropriate resources deployment during project management is critical in ensuring that project is completed with the quality that was intended. Project management team must involve all the stakeholders for successful implementation of the project. Management commitment and sustainability of water projects are intertwined together and hence staff training, competitive reward and career progression is critical in successful project performance. Finally, digital inclusion is important during project management because it enables personnel in information sharing, data analytics as well as communication.

Keywords: *Digital inclusion, Management commitment, Project management capabilities, Resource allocation, Stakeholder participation, Project Sustainability*

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INTRODUCTION

Literature indicates that the sustainability of water projects is strongly hinged on project management capabilities (Plattfaut, 2022). According to Alghail, Yao, Abbas, and Baashar (2022), the main reason for unsustainable projects is a lack of a clear understanding of project management capabilities and how they can result in the sustainability of the initiated projects. This situation is worsened by limited and inconclusive empirical evidence linking project management capabilities and sustainability, particularly in the content of water projects (Alghail et al., 2022). Evidence from Pakistan indicates that for projects to remain sustainable, the role of project management capabilities like top management commitment, allocation of adequate resources, and stakeholder participation are so instrumental (Irfan, Hassan & Hassan, 2019).

According to Hermano, Martin-Cruz, and Pajares (2022), project management capabilities do not influence project sustainability directly but do so indirectly by driving the performance of organizations implementing the projects. An observation made by Nørbjerg, Nielsen, and Stouby-Persson (2017) was that managerial capability like a high level of commitment by those in management contributes to project sustainability. In China, Zhang, Yang, Liao, and Chen (2020) argued that project management capability is a competence that is needed to drive the sustainability of projects an organization has implemented.

In Kenya, Omanwa, and Muchai (2020), 25-30% of fully completed water facilities and points are rendered dysfunctional after 3 years of their completion. This implies that the sustainability of water projects in Kenya is a great concern. However, literature linking project management capability and sustainability in Kenya is so scanty and segregated. Few of the literature like that of Chepkemoi (2020) used project management skills to be equivalent to project management capability.

The concept of sustainability is strongly linked to the United Nations' efforts to realize SDGs. Sustainability has long been defined and recognized as the ability to attain own goals without the need to compromise the degree to which generations in the future may be able to attain their own needs (Salas-Zapata & Ortiz-Muñoz, 2019). It is the ability to maintain the prevailing conditions for ever-lasting benefits in the future. There are three key pillars of sustainability: environment, social and economic aspects (Purvis, Mao & Robinson, 2019). The environmental pillars concern the need to protect the surrounding against pollution and degradation. The social pillar concerns the society at large while the economic pillar concerns the generation of profits without compromising how future generations will survive (Holmberg & Sandbrook, 2019).

Sustainable water projects are those with the ability to achieve performance requirements in the long run (Kativhu, Madzivanyika, Nunu, Macherera & Chinyama, 2022). Such projects are characterized by some attributes as being committed to attaining service expectations and a continued flow of benefits for a very long time (Kamau & Mungai, 2019). There are quite several indicators of project sustainability that include the reliability of the output, cost-effectiveness, and replicability of the project. According to Rutto (2017), sustainable water projects are those that cause no or little harm to the surrounding so that the future generation may also enjoy the same. Within the sustainability discourse, environment destruction arises when a given water facility is not properly fenced and protected so that water does not experience contamination (Masombe & Omwenga, 2020).

Thus, a sustainable water project ensures there is adequate and reliable water supply with the benefits of clean and safe water being realized on a continued basis by the end users. Kamau and Mungai (2019) provided several proxies for measuring the sustainability of water projects. These include quality of water, realization of the objectives and goals of the project, and provision of capacity building to end users. Masombe and Omwenga (2020) adopted reliability, cost sharing for management and operation, community ownership,

replicability, number of beneficiaries, and water sources.

Project management capabilities (PMCs) refer to behaviors, methods, tools as well as processes that are needed for the effective delivery of projects in an organization. According to Plattfaut (2022), the main PMCs required for exceptional delivery of the project include resource allocation, stakeholder participation, management commitment, and digital inclusion and this will be adopted in the proposed study. Resource allocation is the process of assigning the assets in an organization to various units for the successful delivery of the projects (Waititu, 2022). Resources can cover people, finances, technologies, and relevant materials as well as time. Resource allocation enables an organization to efficiently schedule and assigns assets to tasks performed in projects (Ronoh & Kirui, 2020).

Stakeholder participation is an important management capability that supports the delivery of projects. Stakeholder participation creates a sense of ownership by the beneficiaries once the project has been completed (Uwamariya, Safari & Kengere, 2021). Most projects have committees that should be allowed to participate in a project by passing resolutions that should be adhered to in a project organization (Ngare & Cheluget, 2019). Stakeholder participation also seeks to ensure the project managers comply with the established rules like those by the donors (Masika, 2020). This can allow the project to progress in a way that it can be able to meet its objectives. Another important role played by stakeholder participation is that it promotes accountability (Cvijović, Obradović & Todorović, 2021).

Management commitment is an important capability that supports and improves decision-making processes in projects. The top management team of any project has an array of activities like decision making, formulation of goals and objectives, and providing training to staff implementing the project on a day-to-day basis (Memon, Rasli, Dahri & Hermilinda-Abas, 2022). Top management commitment can also be demonstrated by the skills and competence of those in leadership (Leksono, Siagian & Oei, (2020). Management commitment aims at ensuring that the vision and mission of the project organization are realized. Committed top managers will exert more effort with excellent leadership to motivate staff to meet the goals of a project (Sanusi & Johl, 2021).

Digital inclusion is a capability that allows managers to allow project staff to have access to and utilize the latest technologies in their operations. The changing landscapes have resulted in significant transformations and technology has emerged as a priority for project managers to ensure project sustainability (Alhassan & Adam, 2021). Digital inclusion makes it easier to carry out operations and decision-making is also fast and efficient. A digitally inclusive project team is instrumental to project sustainability. Digital inclusion can support faster information sharing, data analytics, and the overall communication of an organization. When information can easily flow between employees in an organization; it becomes easy to make decisions. To realize digital inclusion, efforts should be made by those in management to remove any possible resistance to change (Wambugu, 2016).

Embu County Government became operational in 2013 after the promulgation of the new constitution that ushered in devolution in Kenya. The main sources of drinking water in Embu County include pans, well, springs as well as boreholes, piped water, dams, and rivers (Kinyua, 2015). There are six key rivers in the County whose origin can be traced to Mount Kenya. An estimated 30.1% of the entire population in Embu obtain water from these rivers, 35 % use piped water while wells are used by 21% of the population respectively (Omanwa & Muchai, 2020). Of the total number of Constituencies in Embu County, only Manyatta has the highest number of residents with accessibility to improved and clean water sources as a result of water projects that Embu County has implemented. In sub-counties like Mbeere South and North, residents encounter a lot of difficulties in accessing water for farming as well as for domestic purposes and this has raised

concerns about the sustainability of water projects funded by the County Government of Kenya. Residents in these sub-counties are therefore forced to access water from major towns which are then ferried (Ireri, 2018) raising further concerns about the sustainability of the water projects that the County government of Embu has implemented.

Three major water projects have been funded and completed by the Embu County Government (appendix IV). Compared with a population of 608,599 (KNBS, 2019), these water projects funded by the County Government of Embu are inadequate and have failed to meet water demand by residents in the County especially those in Mbeere South and North sub-counties (Omanwa & Muchai, 2020) thus heightening further concerns about their sustainability. To meet the water demand deficit, a significant portion of residents are forced to rely on unsafe and contaminated water from rivers and seven forks dams as opposed to heavy reliance on water projects that the County government of Embu has implemented to promote sustainability. This has exposed most of the residents in Embu County to frequent crocodile attacks resulting in deaths at some point (Omanwa & Muchai, 2020) and this provides an implication that the water projects that the county has implemented are not sustainable at all. Thus, in the quest to promote the sustainability of water projects for residents in Embu County, the present study seeks to propose a model that incorporates and recognizes the central played by project management capabilities.

Statement of the Problem

Despite being a pillar in the realization of Vision 2030, access to clean and improved water as a component of the sustainability of water projects has remained a challenge in Embu and Kenya at large. While the 2010 Constitution of Kenya and the United Nations recognize access to safe water as a measure of the sustainability of water projects as a right for every citizen, this has not materialized in Embu County (WASREB, 2019). Currently, Embu County has completely implemented three water projects that are so limited to meet the demand of over 600,000 people raising sustainability concerns. This has forced residents in Embu County to rely on unsafe and contaminated water from such sources as rivers and unprotected dams exposing them to health and safety risks (Ireri, 2018) and this means that the water projects being implemented by the County government of Embu are not sustainable at all. The ever-increasing population growth in Embu with limited water projects initiated and funded by the County has resulted in a water sustainability problem (Omanwa & Muchai, 2020). Although the County Government of Embu has indicated the need to drill more bore halls and set up more dams as a way of demonstrating its commitment towards enhancing the sustainability of the water projects it is implemented especially in Mbeere South and North sub-counties, no progress had been made to put this into practice (Omanwa & Muchai, 2020) raising further concerns on the sustainability of the water projects that are being implemented.

The existing studies include Irfan et al. (2019) who focused on Pakistan to predict the implication of project management capabilities on the success of projects. The study observed that project management capabilities like stakeholder participation and resource allocation significantly contribute to the success of the project. Hermano, Martin-Cruz, and Pajares (2022) analyzed project management dynamic capabilities and their implication on the ability of the firm to perform. It emerged that project management dynamic capabilities have no direct influence on performance at the firm level. Nørbjerg et al. (2017) focused on dynamic capabilities and their implication on project management and a positive nexus was registered.

The aforementioned studies create gaps as some like Irfan et al. (2019 focused on project success that is conceptually different from sustainability. Other studies like Nørbjerg et al. (2017) covered dynamic capabilities that are broad as compared to the specific project management capabilities. Studies on project management capabilities concerning project sustainability are scanty and segregated. The persistent scarcity of water in Embu County shows

that there is a lack of digital inclusion, inadequate management commitment limited engagement and involvement of stakeholders, and ineffective allocation of resources, within the water projects in the County. To address the water shortage and improve the livelihood of residents in Embu County, Kenya, a study must be conducted to establish the influence of project management capabilities and the sustainability of water projects funded by the Embu County government.

Objectives of the Study

The general objective of the study was to investigate the influence of project management capabilities and sustainability of water projects funded by Embu County government, Kenya. The study was guided by the following specific objectives:

- To establish the effect of resource allocation and sustainability of water projects funded by the Embu County government, Kenya.
- To determine the influence of stakeholder participation and sustainability of water projects funded by the Embu County government, Kenya.
- To evaluate the role of management commitment and sustainability of water projects funded by the Embu County government, Kenya.
- To examine the relevancy of digital inclusion and sustainability of water projects funded by the Embu County government, Kenya

Empirical Review

Waititu (2022) did a study whose focus was on resource allocation and its position on the ability of the monitoring and evaluation (M&E) system to perform. The study adopted the case of World Vision. The specific aspects of resources covered include people, finances, technologies as well as materials. In total, 9 child protection projects were targeted and information was gathered as supported by the questionnaire. It was shown from the analysis that the allocation of people, materials, technologies, and finances significantly contributes to the performance of the M&E system.

Ronoh and Kirui (2020) focused on the scheduling of resources and their link with the performance of construction projects of residential houses in Nairobi. Sampling of the participants was done through a simple random method and the design was a survey. Information was gathered with the aid of the questionnaire. In total, 79 residential constructions were covered. From the analysis, it emerged that efficient and effective allocation of project equipment leads to success in the completion of the project.

Sadiq (2019) assessed resource allocation strategy and its role as far as performance boards heading water services in Kenya were concerned. The specific aspects of resource allocation covered include staff development, financial resources, infrastructural development, and technological resources. The adopted design was descriptive and correlational. From the analysis, it was observed that the strategy of allocation of resources and the performance of the projects are significantly connected.

Kwesiga and Mulyungi (2018) did an appraisal of resource allocation and its implication for the performance of projects relating to agriculture within the Rwandan context. The study borrowed evidence from One Acre. The adopted design was descriptive in nature and information was gathered aided by a questionnaire. It emerged from analysis that the effective allocation of resources is a significant predictor of how projects perform.

Uwamariya, Safari, and Kengere (2021) analyzed stakeholder participation and the role it plays as far as the sustainability of the project is concerned. The inquiry was done in Kicukiro with a focus on Deaf Donor Funded Project. Leveraging descriptive design, 246 participants were targeted and 152 were sampled purposively. Information was obtained in its primary form guided by the questionnaire. It was shown that the participation of stakeholders and the sustainability of the project are linked with each other significantly.

Masika (2020) focused on stakeholder participation and the sustainability of health projects in Uganda.

The aspects of stakeholder participation that were covered include passive, interactive, functional, and optimum participation. The embraced design of the study was correlational. Although the targeted participants were 255, 153 were sampled and included in the inquiry. The inquiry shared that functional participation was evident through the formation of interest groups.

Habumuremyi and Tarus (2021) studied the implication of stakeholder participation on project sustainability. The specific focus of the inquiry was on community-based projects within the context of Rwanda. The adopted design was descriptive and the sample consisted of 401 respondents. It emerged from there was interactive as well as passive participation and this directly impacted the sustainability of the projects. It emerged that stakeholder participation as a construct brings every person in the project into the decision-making process. As such, stakeholder participation was highly recommended for the sustainability of projects to be realized.

Nzomo and Gachengo (2021) analyzed stakeholder participation and its implication on the sustainability of water projects within Machakos. Participatory theory provided anchorage to the study and the adopted design was descriptive. The participants covered managers of the projects, members of water committees, and elders at the community level. The leaders of the community were selected to represent the beneficiaries of the project. It was observed from the analysis that stakeholder participation has a direct and significant implication on the sustainability of the project.

Memon, Rasli, Dahri, and Hermilinda-Abas (2022) did an investigation of the commitment of those in top management and its importance on the performance of the environment within the context of Pakistan. In total, 222 key informants were allowed to participate in the inquiry. It was observed from the analysis that the commitment of the top managers enhances the performance of the environment. The study pointed out that the commitment of the top managers supports the training of employees to equip them with sound skills and knowledge so that they can perform their duties effectively.

Sanusi and Johl (2021) analyzed top management commitment and its role in the implementation of risk management in projects. The methodology adopted was a narrative technique that entailed the review of the literature. The review of the literature revolved around bringing out the critical essence derived from the high commitment of those in top management positions. The review was guided and supported by information from existing articles and publications. It was shown that management commitment is demonstrated through job automation and proper communication. It was further noted that top managers have the responsibility of guiding, directing, and controlling the activities aimed at meeting the project goals of an organization.

Leksono, Siagian, and Oei (2020) examined top management commitment and its role in operational performance. Information was obtained from firms operating in Java classified as medium and large entities. In total, 55 participants were included in the study. It emerged from analysis that highly committed top managers enhance the operational performance of an entity. The implication of the commitment of those in management positions on performance is a direct one. This means that any effort demonstrated by managers to remain committed would enhance performance.

Karanja, Kahuthia, and Muraguri (2020) conducted an analysis whose focus was on the commitment of those in senior management and how it impacts the performance of schools that are owned by churches. The adopted design was descriptive and a total of 192 participants were targeted and included in the inquiry. Information was sought from primary sources guided by a questionnaire. The analysis was that those in senior positions empowered their staff, and provided training and better rewards to enhance their performance.

Marnewick and Marnewick (2022) did a study whose focus was on digitalization and how it affects project management. By adopting desk research methodology, the study pointed out that with the rapid advancement of digital technologies and the huge volume of information that the same can handle, projects have increasingly been compelled to adopt new technologies that transform how activities and operations are done. It was shown that most of the project managers have resorted to the adoption of agile approaches to enhance operations. Alhassan and Adam (2021) analyzed digital inclusion and access to technologies as they influence the quality of living. The paper relied on information from secondary sources that was gathered from 121 countries in the year 2018. The structural equation model was embraced as an analytical tool to bring out results. It was documented that at a global level, digital inclusion and high access to technologies go a long to improving the quality of life.

Kozarkiewicz (2020) did a study on digital transformation and its implication on processes in the management of projects. To conclude, the inquiry was an empirical analysis with project managers being the respondents. It was shown that digital transformation has significantly and positively enhanced how the project management processes. Feise and Graf-von-Hatzfeldt (2019) did a study on digitalization and its implication for management of the project teams. The focus of the study was on medium-sized technology-related firms. The analysis resulted in the development of a framework that described digitalization and its influence on innovation. It was shown that digitalization supported and enhanced virtual teams and that it resulted in collaboration and communication.

Bajwa and Deichmann (2018) were keen to analyze digitalization and its implication on project management. The study was informed by the TAM theoretical foundation. The design embraced was a quantitative survey. The validity of the tool was determined and gauged through computation and appropriate interpretation of Cronbach Alpha. It emerged from analysis that PU and PEU shape and predicts the intent to utilize and hence the acceptance of digital technologies like cloud-based tools for managing projects.

Wambugu (2016) adopted Kiambu County as the point of reference and exclusively covered its framework towards digital inclusion. The essence of the study was to propose a framework that when adopted would promote digital inclusion. In actualization of this objective, a descriptive survey design was adopted where respondents were drawn from rural areas to have an understanding of the key causes of the digital divide. Both document analysis and questionnaire were adopted in this inquiry. It emerged from analysis that the digital gap in access to the material was closing in the studied region; there was a wide gap in accessibility to skills, use, and utilization. In the adopted framework for adoption, it was suggested that social, human capital development and infrastructure as well as government are key dimensions that enhance digital inclusion.

METHODOLOGY

The descriptive survey research design was used in this study. According to Liamputtong (2019), descriptive research design attempts to gather facts from a population to establish the existing status of the respondents regarding the variables. Descriptive research involves description, recording, analysis, and interpretation of processes and phenomena focusing on adequate interpretation of facts. A descriptive research design is suitable where the study involves describing the characteristics of study variables at a particular place in time and has the advantage of describing, explaining, and validating research findings, and can integrate both quantitative and qualitative methods of data collection (Bougie & Sekaran, 2019). The choice of descriptive research design is also in line with the recommendations of Harris, Holyfield, Jones, Ellis, and Neal (2019) that descriptive research design is a scientific method that involves observing and describing the behavior of subjects under study without influencing them in any way as will be the case with variables in this study.

A population refers to all the elements that meet the sample criteria for inclusion in a given study (Strijker, Bosworth & Bouter, 2020). The target population is the aggregate of cases about which the researcher would like to make generalizations (Dźwigoł, 2019). The target population was 6 completed water projects funded by the County Government of Embu (appendix IV) and they formed the unit of analysis. This study targeted 167 project managers, members of committees, local leaders, and Operating staff as well as community leaders from Embu County

The sampling technique is a specific method that is used to select a sample from the entire target population (Eden & Nielsen, 2020). The desire for an efficient technique of estimating sample size has been driven by the ever-growing necessity for a representative statistical sample in empirical research. Krejcie & Morgan (1970) created a table for calculating sample size for a specific population as a means of filling in the existing gap. This research therefore employed Krejcie & Morgan's (1970) table to determine the sample size. In this regard, the sample size was 100 respondents. After this, proportional sampling was applied to obtain samples per stratum.

Table 1: Sampling Technique

Category	Population	Sample size	Percentage
Project administrators	49	25	25
Members from water committees	53	30	30
Operating staff	37	25	25
Local Leaders	28	20	20
Total	**167**	**100**	**100**

This study relied on primary data that was collected using a self-administered questionnaire that will be semi-structured. Thanem and Knights (2019) noted that a large amount of information can be collected within a short period through the use of questionnaires. Studies have also shown that questionnaires are useful tools for data collection since they are easier to administer and analyze (Fellows & Liu, 2021). Questionnaires were administered through drop and pick later method. Three research assistants were hired and trained in advance to help in administering questionnaires to respondents.

Validity is the extent to which a study tool measures an item that it is designed to measure (Ghauri, Grønhaug & Strange, 2020). The study was test for content and construct validity by engaging a supervisor and two experts in the field of project planning and management. They reviewed the contents of the questionnaire and check against the constructs in the conceptual framework and the reviewed literature to ensure there is consistency. Any suggestions raised was inputted on the final copy of the questionnaire before proceeding to the field to gather data.

Data analysis involves the processing of the gathered raw information so that meaningful insights can be drawn (McKinley & Rose, 2019). The collected data was analysed through SPSS version 26 supported by means and standard deviations as descriptive statistics and correlation and regression as inferential statistics. The reason for selecting means and standard deviations is because they are the most adopted measures of central tendency and dispersion for describing the variables. They are also good at analysing the Likert-based questionnaire that the questionnaire will be designed with. The ordinary least square (OLS) regression model to be adopted for analysis took the following form:

Diagnostic Tests

The study tested for normality, multicollinearity, and Heteroscedasticity Test as discussed in subsequent sections: Multicollinearity is a situation that arises whenever the independent variables of the inquiry are highly correlated with each other (Liamputtong, 2019). This study ascertaiedn this condition by

computation and appropriate interpretation of the values of Variance of Inflation Factors (VIF). As observed by Bougie and Sekaran (2019), such values within the range of 1-10 show evidence of the absence of this assumption. Effective execution of regression analysis is strongly hinged on the fact that the data should have a normal distribution and hence the need to conduct normality tests (Harris, Holyfield, Jones, Ellis & Neal, 2019). In this regard, the P-P plots were used to test for normality.

FINDINGS

Quantitative analysis is a technique used to draw conclusions regarding the relationships between variables. In accordance with the samples that are evaluated, users might deduce or conclude trends regarding a wider population. Essentially, it uses data from a sample to draw conclusions about a wider population or group. In this research, measurement of relationship was analysed using Pearson correlations. The main objective in Pearson correlation is to establish the nature and significant relationship that exists between project management capabilities and sustainability of water projects. The test of significance was run at 0.05 alpha.

Table 2: Pearson Correlation

		Sustainability of Water Projects	X1	X2	X3	X4
Resource Allocation	Pearson Correlation	.479**	1			
	Sig. (2-tailed)	.000				
	N	85	85			
Stakeholder Participation	Pearson Correlation	.593**	.248*	1		
	Sig. (2-tailed)	.000	.022			
	N	85	85	85		
Management Commitment	Pearson Correlation	.829**	.385**	.646**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	85	85	85	85	
Digital Inclusion	Pearson Correlation	.788**	.348**	.576**	.792**	1
	Sig. (2-tailed)	.000	.001	.000	.000	
	N	85	85	85	85	85

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

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

Key: Y= Sustainability of Water Projects; X1= Resource Allocation; X2= Stakeholder Participation; X3= Management Commitment; X4= Digital Inclusion

The findings showed that resource allocation significantly correlates with sustainability of water projects ($r=0.479^{**}$; $p<0.05$). This suggests that that when more resources are allocated sustainability of water projects can be realized. Moreover, it was observed that stakeholder participation has a significant relationship with sustainability of water projects ($r=0.593^{**}$; $p<0.05$). Finally, management commitment had a statistically significant impact on sustainability ($r=0.829^{**}$; $p<0.05$) while digital inclusion variable similarly had a statistically significant impact on sustainability of water projects ($r=0.788^{**}$; $p<0.05$)

The technique of linear regression is used to project the value of one variable depending on another variable's value. A regression analysis is typically performed to estimate the effect of one or more explanatory variables on the dependent variable. The outcomes are shown in the following tables.

Model Summary

It is believed that when performing regression analysis, a model summary is consistently generated. The model summary displays the model's name, model type, and model formula. It indicates the strength of the association between the model's parameters and the dependent variable.

Table 3: Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.872[a]	.761	.749	.52793

a. Predictors: (Constant), Digital Inclusion, Resource Allocation, Stakeholder Participation, Management Commitment

The model summary stipulates that the 74.9% in the sustainability of water projects can be explained statistically using resource allocation, stakeholder participation, management commitment and digital inclusion.

Regression Coefficients

Regression coefficients represent the mean change in the response variable for one unit of change in the predictor variable while holding the other predictor variables constant in the model. This statistical control provided by regression is significant because it separates the role of one variable in the model from all of the others. Table 4 displays the results.

Table 4: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-.154	.258		-.597	.552		
Resource Allocation	.190	.066	.171	2.882	.005	.847	1.181
Stakeholder Participation	.076	.086	.064	.883	.380	.571	1.750
Management Commitment	.487	.103	.466	4.732	.000	.308	3.247
Digital Inclusion	.305	.086	.323	3.556	.001	.363	2.752

a. Dependent Variable: Sustainability of Water Projects

The findings established that resource allocation significantly influenced sustainability of water projects (β=0.171: p<0.05). This finding is consistent with the findings of Riziki, Atera, and Juma (2019) who concluded that community resource mobilization skills significantly influenced the sustainability of community water projects in Kenya, implying that community resource mobilization skills truly facilitate the efficient and effective operation of community water projects.

The findings established that stakeholder participation influence sustainability of water projects (β=0.064; p>0.05). This finding is consistent with the findings of Onziru and Kimutai (2022), who determine that stakeholder participation in location identification, determining the viability and feasibility of initiatives during the selection stage, and building projects in accordance with stakeholder policy are all important for sustainability. The report suggests that all projects done by the Kenyan government be developed in response to community needs or expectations; enhanced grassroots participation in deciding the site of water projects.

Thirdly, the results recognized that management commitment have a significant impact on sustainability of water projects (β=0.466; p<0.05). This conclusion coincides with Muendo and Nyang'au's (2023) finding that the amount of stakeholder participation in water projects was low, affecting the project's sustainability. Furthermore, the participation of stakeholders significantly improved the sustainability of rural community-based water projects. The water project has strengthened relationships between the local

community and government or non-governmental organizations. There were inadequate technical skills to oversee the project, as well as human resources to ensure the initiative's long-term viability. The use of technology in the administration of water projects was relatively low, threatening the viability of water projects.

Finally, the results established that digital inclusion significantly influenced sustainability of water projects ($\beta=0.323$; $p<0.05$). This finding is consistent with that of Yator and Kwasira (2020), who determined in their study that technological variables had an immediate impact on the successful completion of water projects. As a result, the study suggests that county governments use technology in water accessibility among citizens because the cost of applying technologies to access water is minimal and will benefit the community.

SUMMARY AND RECOMMENDATION

Resource allocation is crucial to project management because it enables organizations to plan and get equipped to implement projects. In this current project, it was evident that majority of participants however disagreed that the adequate funds from Embu County government has improved service delivery of water projects. This shows that when funds are inadequate, water projects may suffer its ultimate completion. Therefore, budgeting, fund-raising, fund allocation, and fund-control need to receive more attention as part of the transition from managing projects.

Project auditing aids in locating reoccurring flaws and other repeated patterns in the primary projects, as well as project execution monitoring and control. According to the findings, it was observed that a section of the respondents disagreed that regular audits have improved reliability of water supply of the water projects funded by Embu County government. Given its ability to cut costs, time, and waste from a project or project management process, project auditing is crucial. As a result, a variety of methods are needed for the business case to be used effectively. According to the literature, many of the processes are rarely followed even when senior managers are aware of the requirement.

It is impossible to overstate the significance of scheduling in project management. Up to a huge proportion of the respondents disagreed that adequate time allocated for staff of water projects funded by Embu County government has improved service delivery. From the analysis, it emerged that efficient and effective allocation of project equipment lead to success in completion of the project.

Effective execution and streamlining of the fundamental strategic aspects are necessary to optimize firm performance. It was noted that majority of participants agreed that physical material scheduling based on priorities has reduced costs incurred by beneficiaries to access services from the water projects funded by Embu County government. To ensure that all decisions on the allocation of resources are carefully considered and that there is a monitoring mechanism in place for all allocations, the management of the water services board must impose strict accountability standards on its employees. Additionally, this would guarantee that all decisions about resource allocation suit the organization's best interests.

An important aspect of project sustainability is stakeholder participation. For any project to be successful, communication with the project's external stakeholders is essential. The results indicate participation of stakeholders through committees has enhanced the service delivery of the water projects funded by Embu County government. Furthermore, section reported that interactive participation of stakeholders in water projects funded by Embu County government has led to an improvement in customer satisfaction. This shows that stakeholder involvement through committees as well as interactive participation could impact sustainability of water projects.

The two most important determining variables that impact positive project performance are compliance

and accountability. In this study, it was noted that stakeholders of the water projects funded by Embu County government advocate for compliance with regulations to minimize costs of access water by beneficiaries. This is an initiative that will help the recipients get access to freshwater. In addition to this, a section of the forming a sizable proportion of participants who agreed that stakeholder participation in water projects funded by Embu County government has improved accountability by enhancing service delivery. The study suggests involving stakeholders in project planning, design, implementation, finance, and management in order to sustain water initiatives.

Engagement in a project by a community result in an enhancement of its capacity, preparing it to carry out and oversee development projects in an effective and efficient manner. It was observed that interactive participation has allowed stakeholders to take part in planning of water projects funded by Embu County to ensure there is reliable water supply to beneficiaries. Stakeholder involvement was therefore strongly advised in order for initiatives to be achieved sustainably.

Project management is thought to be founded on two pillars: employee development and customer satisfaction. The results showed that management commitment in water projects funded by Embu County government is demonstrated through staff training for improved service delivery. Similarly, the results indicated that availability of experienced staff has improved customer satisfaction of the water projects funded by Embu County government. This suggests that employees' performance will improve when they receive training on particular aspects of their job. Additionally, when employee performance is continuously supervised and assessed, these improvements are maintained.

Employee engagement is identified as the major contributor to harmony in the workplace. According to the findings, a section reported that existence of competent staff has enhanced service delivery of the water projects funded by Embu County government. Training quickens the pace at which customers receive services, improves the accuracy of standards, and boosts organizational effectiveness. Additionally, it boosts employee passion and motivates them to put up more effort. As a result, their competency rises, which boosts business efficiency and profitability.

Employee performance can be enhanced through reward strategies that can be adopted in a firm. The results of the current study revealed that competitive reward provided to staff of water projects funded by Embu County government has resulted to reliable water supply to beneficiaries. However, some participants disagreed that clear promotion opportunities have motivated staff working in water projects funded by Embu County government to improve service delivery. Giving employees flexibility in decision-making is referred to as ultra-vires, whereas implementing rewards/monetary incentive measures is seen as a cost burden.

Finally, employee development also focusses on their skills and attitudes. It was established that over half of respondents affirmed that the existence of competent staff has enhanced service delivery of the water projects funded by Embu County government. All stakeholders should be informed, from planning to scaling up, by taking into account potential barriers and facilitators for the sustainability of digital project interventions.

Digital inclusion aims to ensure all individuals in the company can participate in and gain from the digital economy. The results established that a section of respondents disagreed that digitalization has allowed information sharing for improved service delivery in water projects funded by Embu County government. Similarly, over half aver that application of data analytics has allowed water projects funded by Embu County government to ensure there is reliable water supply to beneficiaries. Cost is one barrier to digital inclusion for governments with smaller revenue.

The study concludes that appropriate resources deployment during project management is critical in

ensuring that project is completed with the quality that was intended. Similarly, stakeholder participation is fundamental factor during project development. Specifically, project management must involve all the stakeholders for successful implementation of the project. Thirdly, it was observed that management commitment and sustainability of water projects are intertwined together and hence staff training, competitive reward and career progression is critical in successful project performance. Finally, digital inclusion is important during project management because it enables personnel in information sharing, data analytics as well as communication.

The study recommended that resource allocation is crucial to project management because it enables organizations to plan and get equipped to implement projects. In this regard, project management need to deploy the right equipment and resources for effective project execution. Stakeholder participation is fundamental factor during project development. Therefore, project managers need to engage all stakeholders in project development. Management commitment in water projects is demonstrated through staff training for improved service delivery. Therefore, employee development ought to be the primary focus of organizations' management. This enhances productivity and boosts organizations performance. The project cost is one barrier to digital inclusion for governments with smaller revenue. Therefore, for digital inclusion to be successful county governments ought to invest more on infrastructural development related to information technology.

Effective management abilities are important to an organization's sustainability. As a result, research on the impact of risk management competencies on organizational performance could be conducted. This is because risk management assists in the proactive identification and control of risks and weaknesses that could have a detrimental impact on the firm.

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