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Joseph Mumo Muange, Dr. Julius Miroga, PhD & Dr. Hesbon Otinga, PhD, CPA

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[1] Joseph Mumo Muange, [2] Dr. Julius Miroga, PhD & [3] Dr. Hesbon Otinga, PhD, CPA

[1] MSc. Candidate, Jomo Kenyatta University of Agriculture and Technology, Kenya
[2,3] Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

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ABSTRACT

This study investigated project management approaches and sustainability of community based water projects in Trans-Nzoia county, Kenya. The specific objectives were to; establish influence of Resource mobilization, project governance, community participation, monitoring and evaluation on sustainability of community-based water projects. The study was based on stakeholder theory, resource dependency theory and agency theory. Descriptive survey design was used to explain hypothesized relationships. The study targeted 124 respondents from 62 registered community water projects in Trans-Nzoia County, Kenya. From a target population of 124 respondents, a sample size of 94 respondents were selected as calculated using Taro Yamane's proportional sampling technique formula. Primary data was collected by means of self-administered structured questionnaires Descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences, version 28 was conducted. Descriptive analysis such as frequencies, means, standard deviation was utilized whereas analyzed data was presented in tables and graphs. The findings established that there is significant positive influence of project governance, fund mobilization, monitoring and evaluation and community participation on sustainability of community-based water projects. The resulted postulated that the four independent variables, significantly predicted variance in sustainability of community-based water projects. The study concluded that improvement in project governance, fund mobilization, community participation, monitoring and evaluation would result to improved sustainability of community-based water projects. The study recommended that management of community-based water projects should place more resources in cultivating good and quality leadership for the benefit of the projects. Management of community-based water projects should also carry out financial resource planning to ensure that finance resources are adequate for the operation of the community-based water projects. Enough resources should be allocated so as to have the funds availed at the right time and be in the right hands in order to have the monitoring and evaluation processes a success.

Key Words: *Resource Mobilization, Project Governance, Community Participation, Monitoring and Evaluation*

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INTRODUCTION

The sustainability of community based projects and the efficacy of aid are two of the most pressing concerns for all grassroots, national, and global development organizations, particularly amid the Covid-19 social and economic turmoil (Oladele & Vieyra-Mifsud, 2021). A lot of money has been spent in communities throughout the world to enhance living standards and alert people about the hazards of Covid-19. The change from project-based techniques to sector-wide methods, structural change measures, economic recovery papers, program-based guidelines, direct budget assistance, and medium-term spending structures reflects a way to eliminate fracturing in development systems and modify how support is conveyed by shifting the power balance (Gathege & Yusuf, 2019). While donor funding may operate as a temporary accelerator for social change, achieving and sustaining such change is challenging owing to unforeseeable variables like Covid19, which may endanger the early acceptance of innovative project design features (Fenner & Cernev, 2021). Brief financing cycles collide with the length of time required to affect social change, and potentially helpful healthy programs may no longer be economically viable after donor support runs out.

Despite there being a universal recognition for the importance of safe water in poverty alleviation and socio-economic development globally, the access to safe drinking water remains low and this are attributed to many water supply systems not being sustainable (Smith and Marin, 2008) states that worldwide, about two million people struggle daily for access to safe and sufficient water. In the entire world, Africa is the region that suffers most from inadequate access to water supply with only 62% of its population having access to potable water supply. Furthermore, 55 of the countries in the world whose domestic water supply is below 50 litres per capita per day, 35 of them are in Africa (Yahaya, 2007).

Most reports have shown that Kenya is a water scarce country with a per capita of 647cubic meter, which is below the world recommended per capita of 1000cubic meters (Mogaka, 2013)). There is unequal distribution of water in the country with some areas having excess and others having less than they require, which on average makes the country water scarce. Due to the unequal distribution, water sources are often far from the village, and women must walk for hours to fetch water on a daily basis. Some families even keep their daughters out of school so that they can help collect water. These girls follow their mothers and walk, on average, 10 miles every day.

While walking to get water, particularly when they must walk alone before or after daylight hours, women are vulnerable to rape and other violent attacks. Carrying heavy load over long distances from wells or neighborhoods has detrimental health effects, including back and chest pains, developmental deformities, arthritic disease, and miscarriages (WHO & UNICEF, 2020). In an effort to reduce these distances, communities come together and form community water projects. These community water projects improve the quality of life for families by reducing the daily burden of water collection and incidences of water related diseases (WHO & UNICEF, 2020). The community water projects also enable farmers to increase crop production and nutrition levels for their families. They also give communities water maintenance and conservation skills training to reduce soil erosion and depletion.

Despite the government and non-governmental organizations making good efforts to supply water to citizens, it has not been able to cover all areas especially rural areas. Consequently, it has become necessary for communities to organize themselves and launch community water projects to ensure they bring water closer to their homes (WHO & UNICEF, 2020). Many community water projects are started, but fail to realize the intended objectives with a good number of these community water projects collapsing before completion. Other water projects run for one or two years after completion and then collapse thereafter, thus, they fail to meet

the intended objectives; a problem that necessitated this study to examine the influence of resource mobilization, monitoring and evaluation, community participation, project governance on the sustainability of community water projects in Trans-Nzoia County, Kenya.

Statement of the Problem

Globally, water is a basic need but access to clean water in both rural and urban setting in Kenya has been a perennial problem because rural dwellers are brainwashed with the free water service from community wells and rivers while urban dwellers expect efficient water service from urban water service providers. In this regard, most NGOs or development partners have initiated water projects in both rural and urban settings with minimal success because most of these water projects fall short of sustainability. However, in Trans-Nzoia County, sustainability of community projects remains a challenge with only 29.5 per cent of the community based water projects remain operational for more than 10 years since project initiation (GoK, 2020). According to Trans-Nzoia County Government (2021), only 5.9 per cent of the population has access to piped water. Further, water pollution in the county has led to an increase in waterborne diseases therefore, sustainability of community based water projects is paramount.

Therefore, few researches on sustainability of water projects especially community water projects have yielded inconceivable results due to little empirical data or lack of identification of significant community related factors that can enable sustainability of community water projects. For instance researchers such as; Khwaja (2018); Norton (2017); Mala (2019); Cole (2018)); Thompson (2018); Schwartz (2019); Akumu (2020); Mulwa (2020) among others suggested the need for resource mobilization in successful implementation of community projects because past studies had little empirical data on this factor that could significantly influence sustainability of community water projects.

Secondly another stream of researchers; Kasiaka (2018); Baiya (2020);Mbugua (2008); Mathenge (2014) recommended the need for monitoring and evaluation of community water projects while; World vision (2002); Garin (2021); Fry (2023); Arku (2021); Diy (2019) among others showed little empirical data on the need of community participation in community projects, thus recommended an intensive research on this important factor. Lastly, other scholars; WSP (2022); Allouche (2011); Kipkeny (2018); Kitur (2019); Mutonga (2020) among others have also shown inconsistent assertions on what constitutes project governance in community projects, thus recommended empirical inquiries on influence of project governance on community development projects.

Therefore lack of sufficient empirical data on significant factors that influence sustainability of community water projects motivates this research to determine the influence of resource mobilization, monitoring and evaluation, community participation and project governance on sustainability of community water projects in Trans-Nzoia County, Kenya.

Objectives of the study

The general objective of the study was to determine the influence of project management approaches on sustainability of community-based water projects in Trans-Nzoia County, Kenya. The specific objectives were;

- To determine the influence of resource mobilization on sustainability of community water projects in Trans-Nzoia County.
- To determine the influence of community participation on sustainability of community water projects in Trans-Nzoia County.
- To evaluate the influence of project governance on sustainability of community-based water projects in Trans-Nzoia County in Kenya

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- To determine the influence of project monitoring and evaluation on sustainability of community water projects in Trans-Nzoia County.

The study tested the following research hypotheses

- **H_{01}:** Resource mobilization does not significantly influence sustainability of community water projects in Trans-Nzoia County.
- **H_{02}**: Community participation does not significantly influence sustainability of community water projects in Trans-Nzoia County.
- **H_{03}**: Monitoring and evaluation do not significantly influence sustainability of community water projects in Trans-Nzoia County.
- **H_{04}**: Project governance does not significantly influence sustainability of community water projects in Trans-Nzoia County.

LITERATURE REVIEW

Theoretical Review

Stakeholder Theory

Stakeholders Theory as indicated by Donaldson and Preston (1995); Evans and Freeman (1988) and Freeman (1984) models and identifies stakeholders in an organization and also describes how stakeholders and their interests should be managed. Harrison and Wicks (2013) indicate that stakeholders' theory sought to address the principle of what and who in a project rally counts. Unlike the traditional view of looking at an organization where only the owners matter, the stakeholders theory indicates that other parties include suppliers, communities, financiers, political groups, government bodies, employees and customers.

The objective of this theory is to enable managers to have an understanding of stakeholders and manage them strategically (Ketokivi & Mahoney, 2016). The importance of stakeholders' management is described in several studies (Sama-Lang & Zesung, 2016; Harrison & Wicks, 2013). This theory has been applied in different fields despite it having a strategic management origin and the manner in which it is used is distinct where it uses different methods, and criteria of evaluation (Harrison & Wicks, 2013).

Resource dependency theory

Pfeffer and Salancik in their study established the resource dependency hypothesis in 1978, that explains how companies externally generated the resources affect their behavior. The theory is arguably more elaborate when we look at the depth and the way in which it deals with organizations, and also how it combines power within organizations with a structure of how organizations aim to govern their surroundings.

The past immediate scholars were advocating for the importance of inter- organizational power to the strategy and the structure (Thompson, 2018), whereas resource dependency theory offered extensive inventory of an institutional reactions to interconnectedness that can be used to inform empirical research. "Choose the least restricting method to govern ties with your exchange partners that will allow you to minimize unpredictability and reliance while maximizing your autonomy," says one piece of advice to top executives. The theory's description of a variety of procedures results in a continuous succession of feasible choices, ranging from least to most restrictive. If your organization relies on a single sole-source provider, the best option is to select and retain other source vendors in order to limit exposure to the risk.

According to Oliver-Smith, 1996; Gill and Picou 1998, resource dependency theory emphasizes on cultural and economic ties rather than life cape assumptions and as a result, indigenous subsistence cultures' traditional knowledge creates an alternative discourse narrative. Within the context of impact assessment, such a concept widens resource management considerations to encompass elements of the traditional culture.

Agency theory

An agency is a contract between a number of individuals being engaged to undertake some tasks for the other. A central theme in any agency relationship is the separation of power between the agent and the principal. Berle and Means (1932) identified a central problem that affects agency relationships as being caused by misalignment of interests between the agent and the principal. In a normal relationship, the agent is supposed to purse the interest of the principal. Any departure from this constitutes the agency problem. According to Pratt and Zeckhauser (1985) both parties to an agency relationship must participate in in defining a monitoring-and-incentive structure that ensures mutual beneficial results thus ensuring optima organizational sustainability.

Agency theory was developed by Jensen & Meckling (1976). They documented that management of organizations is undertaken by agents who serves the interest of principles. Agent elect's representative to run the day to day activities of their organization. Due to this relationship, there are agency costs which have to be incurred due to separation of power. In project implementation, though the locals are the end beneficiaries they have representative such as elected leaders, public servants and community-based leaders who are mandated to propel developmental agendas for respective counties. The Jensen and Meckling (1976) model combines constructs from agency and other theories such as the property rights and finance theories to develop a theory of the ownership structure of the firm. Agency costs includes the economic bonding, the monitoring and the residual economic loss costs. This theory advances the view that where an agency relationship exists, the agency costs cannot be entirely eliminated (Alchian & Demsetz, 1972), but also with creditors, customers, suppliers and so on.

Conceptual review of study variables

Resource mobilization and sustainability of community water projects

Resource mobilization is really necessary for successful implementation of any community project because of the need for both financial and non-financial support. In this regard, Norton (2017) asserted that effectively mobilizing local community resources requires creativity, persistence and flexibility and Schwartz (2019) identified various techniques that were employed in Nepal to avail the required resources. These included: holding regular communication meetings with representatives of local government, businesses, institutions, other NGOs, media and other social leaders or by attending their meetings and informing them about the CBO's activities and objectives, thus need for their engagement in mobilizing resources for the project's success. In this regard, this study will examine the influence of resource mobilization on sustainability of community water projects in Trans-Nzoia County, Kenya.

Monitoring and evaluation of community water projects

Kimberly (2018) maintains that monitoring brings sustainability in water projects which means, ensuring water supply services and interventions continue to operate satisfactorily and they generate benefits over time as expected. Further, sustainability of water projects is all about ability to operate and maintain initial project service standards, but to achieve this it has to be planned from the very beginning of the project, so as to ensure prerequisites for long-term sustainability and strategies are aimed at seeing that sustainable projects are in place and are in good working order.

Community participation in community water projects

The principles of participation are rooted in Paulo Freire's psychosocial method in which people discussed their own life situation, identified their own problems and planned for transformation, (Mulwa, 2008) and the Mahatma Gandhi's principles of self-help (Mansuri & Rao, 2023) The principles requires developers to focus on creating critical awareness through experience based

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learning, reflection on the peoples' own life situations and finding out what to do with its inadequacies, planning for collective action to transform whatever is undesirable, acting to change the situation and finally identifying failures and successes from actions taken so that it informs the next plan of action. In this regard, this study assesses whether community participation in community projects can have an effect on sustainability of community water projects in Trans-Nzoia County, Kenya.

Project governance and sustainability of community water projects

Role of governance in success and sustainability of projects has been well documented in literature. Project governance provide for how the project will be run and how decision making will be carried out. According to Eyong (2009), good governance would mean ensuring that there is effective management of resources in a manner that is open, accountable, transparent, equitable and responsive to people's needs. The idea of good governance is vital to the successful donor funded projects although it is important to all organizations including for profit, private, public and not for profit where resources must be managed in a manner that is accountable, equitable transparent and responsive to the needs of the people (Lekorwe & Mpabanga, 2007).

According to Onyango (2009), organizations operate in dynamic business environments, complex and subsequently require complex but flexible governance. Well implemented skills management help to identify the employees' competencies required for effective task accomplishment and overall project sustainability. The chances of achieving project sustainability will be high when the management can strike an optimal balance between resource availability and deployment. To achieve this goal, managerial skills need to be enhanced to cap wastage and pilferage of resources (FAO, 2010).

Conceptual framework

A conceptual framework is basically a diagrammed representation of how independent variables directly relates with the dependent variable (Mugenda & Mugenda, 2013). Further, Saunders et al.,2019) asserts that a conceptual framework highlights key factors or variables that guide the researcher in identifying theories that inform the study on how to solve the purported problem (dependent variable) under study. Thus, a conceptual framework lays down a diagram to visually show how conceptualized independent variables relate with the dependent variable. In this study a conceptual framework guides the researcher in reviewing literature related to the study on how conceptualized independent variables (resource mobilization, monitoring and evaluation, community mobilization and project governance) relate with the dependent variable (sustainability)

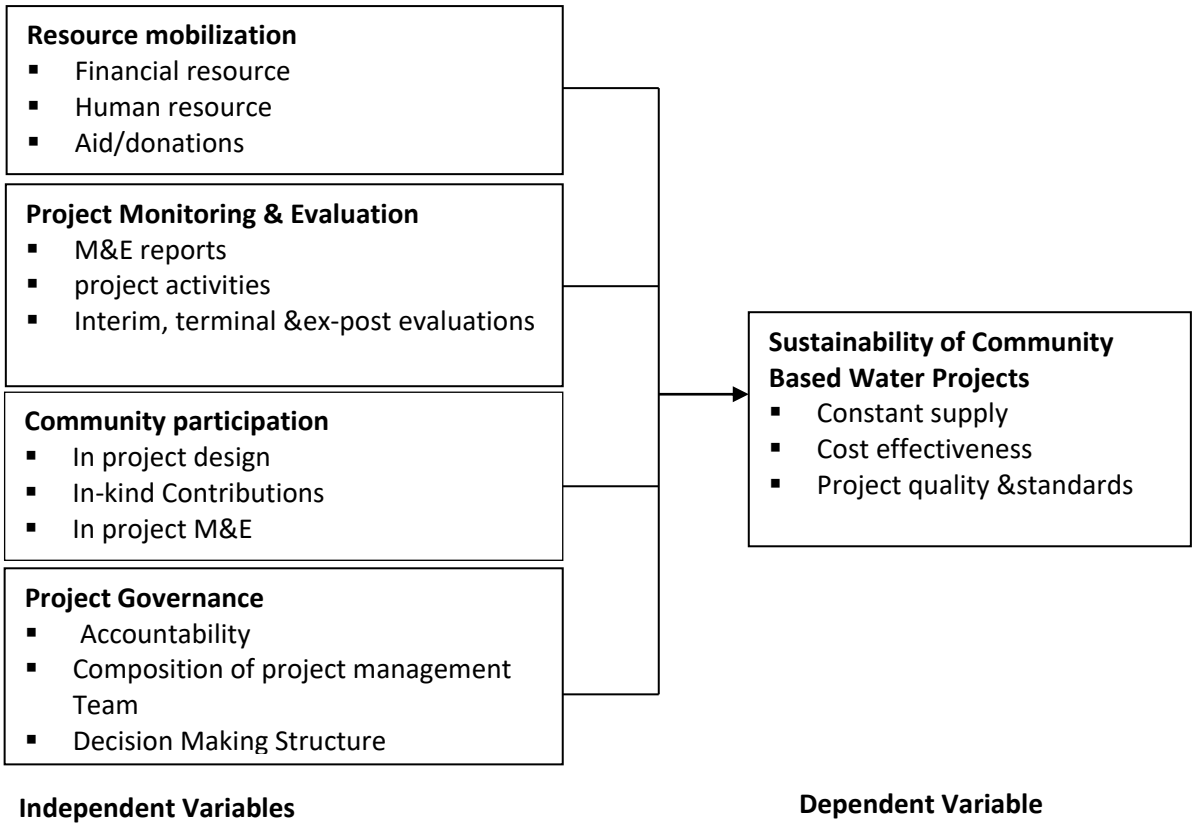

Figure 1: Conceptual Framework

Empirical review of related literature

First and foremost, according to Mala (2019) in Switzerland for instance, the first major strategic decision that NGOs make in soliciting for resources is to focus on human resources, material resources or financial resources. Since NGOs are usually dependent on external funding, the mobilization of financial resources tends to dominate but mobilizing volunteer and community resources is also a strategy that keeps an NGO close to its community-based roots. In mobilizing financial resources, an organization faces two immediate decisions namely: the organization to generate its own financial resources which leaves it in greater control and the threat to autonomy is reduced. Having autonomy also means less vulnerability to outsiders, less sensitivity, and the ability to replace critical resources because the organization can decide where to put the surplus it produces. Sources of resources for CBOs include members' contributions, loans from financial institutions, selling assets, volunteering of individual skills, expertise, gifts and talents; members' donation of natural resources such as land, water and minerals among others (Edwar and Hulm, 2007).

But according to Cole (2018) the other relatively unexplored area of source of resource mobilization is for Non-Governmental Organizations to actively pursue non-financial resources. Non-monetary contributions such as volunteer work from Community Based Organizations and linkages with other organizations should be explored and fully utilized. Often these options receive little attention in resource mobilization because they do not increase the organization's income.

Kasiaka (2018) asserts that, participation is in project measuring and evaluation is an approach through which beneficiaries and other stakeholders are able to influence project planning, decision-making, implementation and monitoring phases. On the other hand, participation is considered to be a

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prerequisite for project ownership, successful implementation and sustainability of the projects in question. Participation does not mean acceptance of all ideas from diverse groups but there is a need to combine indigenous and intellectual knowledge, thus care must be taken so that intellectual knowledge does not influence that of the indigenous community being served by the project.

Baiya (2020) asserts that monitoring is being aware of the state of the system and this requires measurement of results. It is a process of collecting, processing and sharing data to assist project participants in decision making and learning. Monitoring should be extended to all individuals and institutions which have an interest in the project. To efficiently implement a project, the people planning and implementing it should plan for all the interrelated stages from the beginning. He also asserts that properly informed participatory project monitoring helps donors, governments and implementing agencies to identify project constraints and beneficiary needs, to monitor progress towards project objectives and evaluate results. It is not only what is being assessed but also who is doing the assessment and for whom the assessment is intended that is important in the project monitoring and evaluation and local people need integration in the process because they take the whole risk and thus the should be in a position to realize the milestones (Baiya, 2020).

NGO Management School Switzerland (2018) asserts that Participatory development is the most important approach towards enabling communities to help themselves and sustain efforts in development work. Communities are no longer seen as recipients of development programs but rather they have become critical stakeholders who have an important role to play in the management of programs and projects in their areas. Community stakeholders are community-based mechanisms that can help support and sustain a program or project. For example, in implementing education projects, the mechanism can be the school governing council or the parents, teachers and community association.

In most rural communities, water is scarce and therefore not all people live next to water sources creating a need to bring the water closer to their places of habitation. This leads to formation of community water projects since individuals cannot afford. Successful sustainability is so much dependent on involvement of communities from initiation, through implementation to project closure. Engaging them will ensure that the project responds to local needs utilizing local resources. This will also help understand the community context which will help determine the characteristics of the community and work out where organizers interests intersect with the needs of the local community (Diy, 2019).

According to a study done by Irfan & Hassan, (2019) to examine influence of project governance & sustainability on project success of the public sector organizations in Pakistan revealed reported that project governance and sustainability depicted positive impact on project success of the public sector organizations explaining roughly 64% of variance in project success. In the absence of effective governance, malpractices, budget overruns and poor sustainability of community water projects will abound thus dealing a blow to the project (Kakabadse, et al, 2005).

Abed, (2017) focused on analyzing the impact of project governance on the success of projects implemented by 13 of the United Nations Organizations operating in the Gaza strip. This study follows the quantitative analytical approach and adopting the questionnaire technique as a data collection tool. Data were collected from a random cluster sample of 200 employees who works in project-related positions in the targeted organizations. The study results revealed the followings: First, there is a positive impact of project governance on project success. Second, the contractual governance is the most important type

of governance where this criterion got the highest weight among the other criteria with a weight of 71.42. Third, the governance of project orientation is a highly positive criterion, which affects the success of any project with a weight of 69.25. Fourth, the other types of governance; governance of project management and relational governance, have a medium effect on projects governance where their effect is relatively lower than the previous kinds of governance with a weight of 66.79 and 67.07, respectively.

Kitur (2019) studied on sustainability of water resource projects by women in Sotik Sub-County, Bomet County, Kenya and noted that good leadership through project governance influence sustainability of water projects. That is, majority of the respondents were found to be illiterate and this affects the sustainability of water projects. The study recommended that in order to achieve sustainable water women should be involved during conception, design, implementation, operation and maintenance of the projects. Also the study found out that funds are not adequate and the mode of disbursement is not reliable, transparent and fast and this hinder management of the water projects. The study implies that project governance is a mandatory exercise to enable sustainability of community water projects.

METHODOLOGY

This study deployed descriptive research design which Sekaran and Bougie (2018) defined as consolidation of information and data to respond to questions on why, what, when and how. According to Creswell (2008), the descriptive method of study is used to obtain data about the already existing condition. The study targeted 124 respondents comprising of mainly the chairpersons of the projects and project implementation officers of 62 registered community water projects in Trans-Nzoia county, Kenya**.** The study employed stratified random sampling technique which guided how sampled officials of 62 registered community water projects are to be selected. The sample size OF 94 was calculated as per Taro Yamane's proportional sampling technique formula .

Primary data was collected by means of self-administered structured questionnaires. All collected data were coded, cleaned, tabulated and analyzed using descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences, version 28 Descriptive analysis such as frequencies, means and standard deviation were utilized whereas analyzed data presented in tables and graphs. Further, inferential statistics assessed the nature and the strength of the relationships. SPSS version 28 is the analysis computer software that was used to compute statistical data. Study statistical model was;

$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

y = Sustainability of community water projects in Trans-Nzoia County.

β_0 = Constant

X_1 = Resource mobilization

X_2 = Monitoring and evaluation

X_3= Community participation

X_4 = Project governance

$\{\beta_0\text{-}\beta_4\}$ = Beta coefficients

ε = the error term

FINDINGS AND DISCUSSION

Descriptive Statistics of Resource mobilization and Sustainability of community water projects

The study sought to establish minimum, maximum, mean and standard deviation of resource mobilization in a scale of 1 to 5. The results are as shown in Table 1.

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Table 1: Descriptive Statistics of Resource mobilization

Resource mobilization	N	Min	Max	Mean	Std Dev.
There are finance mobilization activities to raise finances of community water projects	75	1.0	5.0	3.960	1.1082
The management team sources for technical personnel to maintain community water projects	75	1.0	5.0	3.693	1.0651
The management mobilizes for material resources from the community to support community water projects	75	1.0	5.0	3.733	1.1429
The management and local leadership mobilizes for both material and financial aid and donations from well-wishers, donors to aid community water projects	75	1.0	5.0	3.360	1.0860
Resources are mobilized and realized through different channels to enhance sustainability of community water projects	75	1.0	5.0	3.387	1.3345

The descriptive statistics reveal the perceptions of respondents regarding resource mobilization activities within community water projects, alongside the standard deviation, which measures the dispersion of responses around the mean. The data indicates that respondents generally agree with the presence of finance mobilization activities aimed at raising finances for such projects, as evidenced by a relatively high mean score of 3.960 and a standard deviation of 1.1082. This suggests that there is active engagement in financial fundraising initiatives to support the sustainability of community water projects, with responses clustering closely around the mean.

Similarly, respondents acknowledge the efforts of management teams in sourcing technical personnel to maintain these projects, with a mean score of 3.693 and a standard deviation of 1.0651. This highlights the importance placed on ensuring adequate human resources with the necessary expertise to oversee and manage the technical aspects of water projects effectively, with responses showing relatively low variability.

Moreover, the data reflects a positive perception regarding the mobilization of material resources from the community to support water projects, with a mean score of 3.733 and a standard deviation of 1.1429. This indicates that there are concerted efforts to engage community members in contributing materials or resources towards the development and maintenance of water infrastructure, albeit with slightly higher variability in responses.

However, respondents express slightly lower agreement regarding the mobilization of financial aid and donations from well-wishers and donors, as evidenced by a mean score of 3.360 and a standard deviation of 1.0860. This suggests that there may be some challenges or limitations in securing external financial support for community water projects, with responses exhibiting moderate variability.

Furthermore, the data suggests moderate agreement among respondents that resources are mobilized through various channels to enhance the sustainability of community water projects, as indicated by a mean score of 3.387 and a standard deviation of 1.3345. This highlights the recognition of the importance of diversifying resource mobilization strategies to ensure the long-term viability and success of such projects, with responses showing relatively higher variability.

Descriptive Statistics of monitoring and evaluation on Sustainability of community water projects

Five easily measurable factors were utilized to assess the latent (unmeasurable) variable of monitoring and evaluation. Descriptive data (including ranges, medians, and modes) are shown in Table 2.

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Table 2: Descriptive Statistics of monitoring and evaluation on Sustainability of community water projects

monitoring and evaluation	N	Min	Max	Mean	Std. Dev.
Use of water project reports improve sustainability of community water projects	75	1.0	5.0	3.960	1.2130
Progress of water project activities assist in sustainability of community water projects	75	1.0	5.0	3.533	1.3689
Use of field visits & corrective actions assist in sustaining of community water projects	75	1.0	5.0	3.853	1.3920
Availing of real project data/information aid in the sustainability of community water projects	75	1.0	5.0	3.320	1.2099
The monitoring and evaluation promotes communication advocacy amongst all the stakeholders	75	1.0	5.0	3.653	1.0966

The data regarding the use of water project reports in promoting the sustainability of community water projects reveals a high level of agreement among respondents. With a mean score of 3.960 and a standard deviation of 1.2130, it suggests that respondents generally perceive the utilization of project reports as crucial for monitoring progress and making informed decisions. The relatively low standard deviation indicates that responses are clustered closely around the mean, indicating a strong consensus among respondents on the effectiveness of this monitoring and evaluation practice.

In contrast, while respondents also view the practice of conducting field visits and implementing corrective actions as important for sustaining community water projects, there is slightly more variability in perceptions. The mean score of 3.853 suggests general agreement, but the higher standard deviation of 1.3920 indicates a broader range of opinions among respondents. Despite this variability, the overall consensus implies that most respondents recognize the value of proactive monitoring and intervention to address challenges and ensure project sustainability.

Regarding the availability of real project data/information, the data indicates a slightly lower level of agreement among respondents. With a mean score of 3.320 and a standard deviation of 1.2099, it suggests that opinions are more dispersed compared to other monitoring and evaluation practices. While there is still a recognition of the importance of accessing accurate project information, the higher standard deviation implies a wider range of perspectives among respondents, with some variability in the perceived effectiveness of this practice.

Moving forward, the analysis delves into the monitoring and evaluation practices related to the promotion of communication advocacy among stakeholders involved in community water projects. The data suggests a generally positive perception of this aspect, with a mean score of 3.653 and a standard deviation of 1.0966. This indicates a moderate level of agreement among respondents regarding the effectiveness of communication advocacy in sustaining community water projects. The relatively low standard deviation implies that responses are closely clustered around the mean, indicating a consistent perception among respondents.

Lastly, the descriptive statistics provide insights into the use of progress reports to assess the sustainability of community water projects. With a mean score of 3.533 and a standard deviation of 1.3689, the data indicates a moderate level of agreement among respondents. While there is recognition of the value of progress reports in monitoring project activities, the higher standard deviation suggests some variability in perceptions. This variability may stem from differences in the perceived effectiveness of progress reporting methods or the extent to which progress reports inform decision-making processes.

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Descriptive Statistics of Monitoring and evaluation on Sustainability of community water projects

Descriptive results entailed minimum, maximum, mean and standard deviation of five observable variables that ultimately measured Monitoring and evaluation.

Table 3: Descriptive Statistics of Monitoring and evaluation on Sustainability of community water projects

Monitoring and evaluation	N	Min	Max	Mean	Std. Dev.
Use of water project reports improve sustainability of community water projects	75	1.0	5.0	3.867	1.4174
Progress of water project activities assist in sustainability of community water projects	75	1.0	5.0	3.413	1.0539
Use of field visits & corrective actions assist in sustaining of community water projects	75	1.0	5.0	3.800	1.0000
Availing of real project data/information aid in the sustainability of community water projects	75	1.0	5.0	3.653	1.0966
The monitoring and evaluation promotes communication advocacy amongst all the stakeholders	75	1.0	5.0	3.733	1.1429

Source: Field data, 2023

Firstly, the use of water project reports to improve sustainability garnered a mean score of 3.867, indicating a relatively high level of agreement among respondents. This suggests that most participants perceive the utilization of project reports as beneficial for enhancing the sustainability of community water projects. However, the standard deviation of 1.4174 implies some degree of variability in opinions, with some respondents possibly holding divergent views on the effectiveness of this practice.

Secondly, the progress of water project activities assisting in sustainability received a mean score of 3.413, suggesting a moderate level of agreement among respondents. This indicates that while there is recognition of the importance of monitoring project activities for sustainability, opinions are not as uniformly aligned as with the use of water project reports. The lower standard deviation of 1.0539 signifies less variability in opinions compared to other practices, implying a more consistent perception of this aspect.

Moving on, the use of field visits and corrective actions to sustain community water projects garnered a mean score of 3.800, indicating a relatively high level of agreement. This suggests a widespread acknowledgment of the effectiveness of field visits and corrective actions in ensuring the sustainability of such projects. The standard deviation of 1.0000 underscores the consistency of opinions among respondents, with minimal variability observed.

Additionally, availing real project data/information to aid sustainability attained a mean score of 3.653, indicating a moderate level of agreement. This implies that while respondents generally recognize the importance of accessing project data for sustainability, there may be differing perspectives on the extent of its effectiveness. The standard deviation of 1.0966 suggests some variability in opinions, indicating diverse views on this aspect.

Lastly, the monitoring and evaluation promoting communication advocacy among stakeholders received a mean score of 3.733, reflecting a relatively high level of agreement. This indicates a widespread acknowledgment of the role of monitoring and evaluation in fostering communication advocacy among stakeholders. However, the standard deviation of 1.1429 suggests some variability in opinions, with differing perspectives on the effectiveness of this practice across respondents.

Descriptive Statistics of Project governance

Descriptive results entailed minimum, maximum, mean and standard deviation of six observable variables that ultimately measured Project governance. The results are as shown in Table 4.

Table 4: Descriptive Statistics of Project governance

Project governance	N	Min	Max	Mean	Std. Dev.
The projects adopts mixed leadership style including the authoritative and horizontal leadership styles	75	1.0	5.0	4.240	1.2394
The local project committees are balanced based on gender	75	1.0	5.0	3.733	1.2875
Democratic and transparent selection of project officials aid in sustaining of community water projects	75	1.0	5.0	3.587	1.1161
The project has established shared accountabilities and responsibilities among all the project stakeholders.	75	1.0	5.0	3.893	1.3108
The project has provided a clear administrative framework of project management	75	1.0	5.0	2.640	1.3620

The projects adopt a mixed leadership style, including authoritative and horizontal leadership styles, with a mean score of 4.240. This indicates a strong consensus among respondents regarding the adoption of diverse leadership approaches within the projects. The relatively low standard deviation of 1.2394 suggests a consistent perception among participants regarding this aspect of project governance.

Respondents provided a mean score of 3.733 for the statement "The local project committees are balanced based on gender." This suggests a moderate level of agreement among participants regarding the gender balance within local project committees. However, the standard deviation of 1.2875 indicates some variability in opinions, implying differing perspectives on the extent of gender representation within these committees.

The statement "Democratic and transparent selection of project officials aids in sustaining community water projects" received a mean score of 3.587. This indicates a moderate level of agreement among respondents regarding the importance of democratic and transparent selection processes for project officials. However, the standard deviation of 1.1161 suggests some variation in perceptions among participants.

Participants provided a mean score of 3.893 for the statement "The project has established shared accountabilities and responsibilities among all project stakeholders." This suggests a relatively high level of agreement regarding the establishment of shared accountabilities and responsibilities within the projects. Nonetheless, the standard deviation of 1.3108 indicates some degree of variability in opinions among respondents.

The statement "The project has provided a clear administrative framework of project management" garnered a mean score of 2.640. This suggests a moderate level of agreement among participants regarding the provision of a clear administrative framework. However, the standard deviation of 1.3620 indicates varying perceptions among respondents regarding the clarity of administrative processes within the projects.

Correlation between all project management approaches and Sustainability of community water projects

A correlation analysis has been carried out to determine the connection between project management approaches and sustainability of community water projects. Table 5 summarizes the results.

Table 5: Correlation Matrix

		Resource mobilization	monitoring and evaluation	Monitoring and evaluation	Project governance
Resource mobilization	Pearson Correlation	1			
	Sig. t(2-tailed)				
	N	75			
Monitoring and evaluation	Pearson Correlation	.179	1		
	Sig. t(2-tailed)	.125			
	N	75	75		
Monitoring and evaluation	Pearson Correlation	.196	.433**	1	
	Sig. t(2-tailed)	.092	.000		
	N	75	75	75	
Project governance	Pearson Correlation	.297**	.671**	.431**	1
	Sig. t(2-tailed)	.010	.000	.000	
	N	75	75	75	75
Sustainability	Pearson Correlation	.315**	.610**	.527**	.487**
	Sig. t(2-tailed)	.006	.000	.000	.000
	N	75	75	75	75

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

The analysis revealed a moderate positive correlation between resource mobilization and sustainability ($r = 0.315$, $p < 0.01$). This suggests that as efforts to mobilize resources increase, there is a corresponding improvement in the sustainability of community-based water projects in the county. Adequate financial and material resources are essential for the effective operation and maintenance of water projects, ensuring their long-term viability and benefit to the community.

A strong positive correlation was observed between monitoring and evaluation practices and sustainability ($r = 0.610$, $p < 0.001$). This indicates that robust monitoring and evaluation mechanisms are associated with higher levels of sustainability in water projects. Regular monitoring allows project managers to track progress, identify challenges, and make timely adjustments, contributing to improved project performance and longevity.

The analysis demonstrated a moderate positive correlation between monitoring and evaluation and resource mobilization ($r = 0.527$, $p < 0.001$). Effective monitoring and evaluation practices may enhance resource mobilization efforts by providing valuable insights into the impact of existing resources and the need for additional support. Data-driven decision-making based on monitoring results can help attract funding and support from stakeholders.

A strong positive correlation was found between project governance and sustainability ($r = 0.487$, $p < 0.001$). This underscores the importance of sound governance practices in ensuring the long-term success of community-based water projects. Clear roles and responsibilities, transparent decision-making processes, and accountable leadership contribute to project stability and sustainability over time.

Multiple Regression for Project management approaches on Sustainability of community water projects

Multiple Linear Regression analysis was conducted to find the effects of the project management approaches dimension on the sustainability of community-based water projects in Trans-Nzoia County together for project management approaches dimensions. This led to the identification of the study model coefficients and the study R square. As shown in Table 6, the results are current.

Table 6: Regression Analysis of Independent Variables and Sustainability of community water projects

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.793[a]	.628	.623	.49250	.487	22.502	3	71	.000	

a. Predictors: t(Constant), resource mobilization, community participation, project monitoring and evaluation, project governance

The model summary provides valuable insights into the relationship between various predictors—resource mobilization, community participation, project monitoring and evaluation, and project governance—and the sustainability of community-based water projects. The correlation coefficient (R) measures the strength and direction of the linear relationship between the predictors and the dependent variable, sustainability of community-based water projects. In this model, R is 0.793, indicating a strong positive correlation. The coefficient of determination (R Square) represents the proportion of variance in the dependent variable explained by the independent variables. In this model, R Square is 0.628, meaning that approximately 62.8% of the variance in sustainability can be accounted for by the predictors. Adjusted R Square adjusts for the number of predictors in the model, providing a more accurate estimate of the variance explained. Here, it is 0.623, suggesting that the model is reliable and not overfitting the data.

Table 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.219	4	7.740	22.502	.000[b]
	Residual	24.420	71	.344		
	Total	47.639	74			

a. Dependent Variable: sustainability of community-based water projects

b. Predictors: t(Constant), resource mobilization, community participation, project monitoring and evaluation, project governance

The F-statistic tests the overall significance of the regression model. A high F-value indicates that at least one predictor significantly contributes to the model's explanatory power. The F(4,71)=22.502, with a corresponding p-value of 0.000, indicating that the regression model is significant. The model summary and ANOVA results suggest that the combination of resource mobilization, community participation, project monitoring and evaluation, and project governance significantly influences the sustainability of community-based water projects. The regression model is robust and provides valuable insights into the factors contributing to project sustainability.

Table 8: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.307	.441		.696	.489
	Resource Mobilization	.153	.075	.177	2.028	.046
	Community Participation	.435	.092	.450	4.743	.000
	Monitoring and Evaluation	.333	.106	.298	3.135	.002
	Project Governance	.074	.021	.453	3.618	.000

a. Dependent Variable: sustainability of community-based water projects

a. Predictors: (Constant), Monitoring and evaluation, Monitoring and evaluation, Resource mobilization, Project governance

Sustainability of community water projects = $0.307+0.153X_{1+}0.435X_2+ 0.333X_3+ 0.074X_4$

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Influence of Resource Mobilization on Sustainability of Community Water Projects in Trans-Nzoia County

The coefficient (B = 0.153) suggests that for every one-unit increase in resource mobilization, there is a corresponding increase of 0.153 units in the sustainability of community-based water projects. The standardized coefficient (Beta = 0.177) indicates a moderate positive relationship between resource mobilization and project sustainability. The t-value (t = 2.028) is significant at $p < 0.05$, suggesting that resource mobilization has a statistically significant impact on project sustainability. The standardized coefficient (Beta = 0.177) further supports this relationship, indicating a moderate positive association between resource mobilization and project sustainability. This finding is consistent with previous research highlighting the importance of financial and material resources in supporting the long-term viability of development projects (Grimm et al., 2009). Communities with access to sufficient resources are better equipped to address challenges such as infrastructure maintenance, capacity building, and technology upgrades, which are critical for sustaining water projects over time.

The statistically significant t-value (t = 2.028) at $p < 0.05$ provides further evidence of the impact of resource mobilization on project sustainability. This implies that the relationship between these variables is unlikely to have occurred by chance and suggests a meaningful association between resource availability and project outcomes. This finding corroborates the results of studies emphasizing the importance of financial investment and resource allocation in achieving sustainable development goals, particularly in the context of water and sanitation projects (Bocoum et al., 2020). Moreover, the significance of resource mobilization highlights the need for effective fundraising strategies, donor engagement, and financial management practices within community-based water projects. Communities must prioritize efforts to secure funding from various sources, including government grants, international aid agencies, philanthropic organizations, and community contributions, to sustainably finance project activities (Wang & Bocoum, 2021). Additionally, transparent and accountable financial practices are essential for building trust among stakeholders and ensuring the efficient utilization of resources for project implementation.

These results are supported by Gray and Larson (2018) who found that the purpose project funds control is to define fund outputs, outcomes and impacts of the project, as well as performance indicators and targets. The project fund control framework need to be applied by stakeholder in ensuring that the intended outcomes and output of the projects over the short, medium and long terms are achieved and project success guaranteed. Therefore, participatory projects fund control seeks to respect the perspectives, voices, preferences and decisions of the least powerful and most affected stakeholders and local beneficiaries. Nthenge (2014) found the funding level influence performance of donor funded projects in Nyeri County. The researcher also concludes that inadequate projects income management undermines sustainability of water supplies. Proper financial records, pricing flexibility, revenue collection and its incentives as well as cost recovery skills ensures improvement in generation and use of projects income.

Influence of Community Participation on Sustainability of Community Water Projects in Trans-Nzoia County

The coefficient (B = 0.435) indicates that community participation has a stronger positive impact on project sustainability compared to resource mobilization. The standardized coefficient (Beta = 0.450) reinforces this relationship, suggesting a substantial positive influence of community participation on project sustainability. The t-value (t = 4.743) is highly significant ($p < 0.001$), indicating a robust relationship between community participation and project sustainability. This indicates that the observed association between

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these variables is unlikely to have occurred by chance and suggests a strong and meaningful connection between community involvement and project outcomes. This finding aligns with existing literature emphasizing the pivotal role of community participation in achieving sustainable development goals, particularly in the context of water resource management (Arnstein, 2018; Pretty, 2015).

Community participation fosters ownership, accountability, and social cohesion within communities, which are essential for the successful implementation and long-term maintenance of water projects (Biswas & Tortajada, 2016). By involving community members in project decision-making processes, stakeholders can leverage local knowledge, resources, and social networks to address challenges, promote behavioral change, and ensure the sustainability of water infrastructure. However, it is essential to recognize that effective community participation requires deliberate efforts to build trust, foster inclusivity, and address power dynamics within communities (Oakley, 2021). Meaningful engagement goes beyond tokenism and involves genuine collaboration, dialogue, and capacity-building initiatives that empower communities to actively contribute to project planning, implementation, and monitoring processes.

The study's results are supported by Kamau (2019) who also did a study on the role of beneficiary involvement in successful implementation of projects and found that their involvement goes a long way in making sure that the project objectives are achieved and recommended that the community should be involved in project identification to enhance ownership. Kiara and Luketero (2018) concluded that stakeholder involvement to a significant extent impacts on the performance of donor funded project the study noted that good and clear stakeholders involvement programme is of great importance in ensuring smooth implementation of donor funded projects

Influence of Project Monitoring and Evaluation on Sustainability of Community Water Projects in Trans-Nzoia County

The coefficient (B = 0.333) indicates a positive impact of monitoring and evaluation on project sustainability. The standardized coefficient (Beta = 0.298) suggests a moderate positive relationship. The t-value (t = 3.135) is significant at $p < 0.01$, indicating that monitoring and evaluation significantly contribute to project sustainability. The significant t-value (t = 3.135) at $p < 0.01$ further strengthens the association between monitoring and evaluation and project sustainability. This indicates that the observed relationship between these variables is unlikely to have occurred by chance and provides empirical evidence of the significant contribution of monitoring and evaluation practices to project sustainability. These findings are consistent with existing literature highlighting the importance of systematic monitoring and evaluation in enhancing project effectiveness and sustainability (Bamberger & White, 2010; Fetterman et al., 2019).

Effective monitoring and evaluation enable project stakeholders to track progress, identify challenges, and make informed decisions to improve project outcomes and ensure long-term sustainability. By systematically collecting and analyzing data on project performance, stakeholders can identify areas for improvement, allocate resources efficiently, and adapt strategies to changing circumstances. This iterative process of learning and adaptation is essential for addressing emerging challenges, maximizing project impact, and optimizing resource utilization. However, it is crucial to recognize that monitoring and evaluation efforts must be conducted in a participatory and context-sensitive manner to be effective. Meaningful stakeholder engagement, including the involvement of local communities, project beneficiaries, and other key stakeholders, is essential for ensuring the relevance, credibility, and sustainability of monitoring and evaluation processes (UNDP, 2019). Moreover, M&E systems should be tailored to the

specific needs and priorities of the project context, taking into account local knowledge, cultural norms, and resource constraints.

The results are supported by various previous studies. Kibebe and Mwirigi (2014) indicated that the implementation of donor funded project depends on monitoring and evaluation. They found that there was inadequate monitoring and evaluation of the projects initiated at community level, decision making concerning the project is inefficient and lack of commitment. Mwangi et al (2015) sought to establish the factors affecting projects performance of donor funded projects with reference to monitoring and evaluation of water projects. The study revealed that monitoring has significant influence on monitoring and evaluation of devolved projects. The results are consistent with Madeeha and Imran (2014) who found that involvement in monitoring of the Baku-Tblisi-Ceyhan Pipeline project by national NGOs was a recommendation that arose during the construction phase of the project. The company took up this recommendation, with support from relevant stakeholders, with the view that constructive and well-informed NGO monitoring was useful to the company as it improved the performance of the project

Influence of Project Governance on Sustainability of Community-Based Water Projects in Trans-Nzoia County in Kenya

The coefficient (B = 0.074) suggests a positive impact of project governance on project sustainability. The standardized coefficient (Beta = 0.453) indicates a strong positive relationship between project governance and project sustainability. The t-value (t = 3.618) is highly significant ($p < 0.001$), highlighting the importance of effective project governance in ensuring project sustainability. The highly significant t-value (t = 3.618) at $p < 0.001$ further emphasizes the importance of effective project governance in ensuring project sustainability. This indicates that the observed relationship between project governance and project sustainability is unlikely to have occurred by chance and provides strong empirical evidence of the significant contribution of governance mechanisms to project sustainability. Effective project governance encompasses various aspects, including leadership structures, decision-making processes, accountability mechanisms, and stakeholder engagement practices. Strong governance ensures that project resources are managed efficiently, risks are identified and mitigated, and project activities are aligned with stakeholders' interests and objectives.

Moreover, transparent and participatory governance processes foster trust and collaboration among project stakeholders, creating an enabling environment for effective project implementation and long-term sustainability. By promoting transparency, accountability, and inclusivity, project governance mechanisms enhance stakeholder buy-in, reduce conflicts, and facilitate collective action towards achieving project goals. However, it is essential to recognize that project governance is a multifaceted concept influenced by contextual factors such as political dynamics, institutional capacities, and cultural norms. Therefore, governance structures and practices must be tailored to the specific needs and challenges of each project context to ensure their effectiveness and relevance.

The results are supported by Mary (2018) sought to identify four aspects of leadership and investigated their effect on performance of projects. From the findings, there was a positive relationship between leadership and project performance. Leadership skills, leadership experience, leadership control and leadership styles all had a positive correlation with project performance. Omonyo (2019) indicated that project leadership had significant positive influence on project success in such a way that success rate increased as leadership style tended towards complexity leadership. In effect, the findings underscored the significance and application of complexity leadership theory, structural contingency theory and complex adaptive systems theory, in the delivery of public infrastructural

megaprojects. Consequently, in order to navigate the complexity inherent in these projects, this study recommends adoption of a leadership style anchored on both complexity science and context. Such leadership is expected to be long on both generative and adaptive behaviors.

SUMMARY

The first objective was to investigate influence of resource mobilization on sustainability of community-based water projects in Trans-Nzoia County. Pearson correlation results showed that the relationship between resource mobilization and sustainability of community-based water projects in Trans-Nzoia County was found to be linear, positive and significant. These implied that resource mobilization had a significant, positive and strong relationship with the sustainability of community-based water projects in Trans-Nzoia County.

Regression coefficient from simple regression analysis revealed that a unit increase in resource mobilization would results to a significant increase in sustainability of community-based water projects in Trans-Nzoia County. On the other hand, Regression coefficient from multiple regression analysis revealed that a unit increase in resource mobilization would results to a significant increase in sustainability of community-based water projects in Trans-Nzoia County. At 5% level of significance and 95% level of confidence, resource mobilization is significant in predicating the degree of sustainability of community-based water projects in Trans-Nzoia County.

The second objective was to determine the sustainability of community-based water projects in Trans-Nzoia County through the impact of the community participation. There was a linear, optimistic and important relationship between community participation and sustainability of community water projects variables. Correlation coefficient meant that a community participation was closely linked to sustainability of community-based water projects. Moreover, regression coefficient from multiple regression analysis revealed that a unit increase in community participation would results to a significant increase in sustainability of community-based water projects in Trans-Nzoia County. Community participation was significant in predicating the degree of sustainability of community-based water projects in Trans-Nzoia County.

The third objective sought to examine the influence of Project governance on sustainability of community-based water projects in Trans-Nzoia County. Results established that the relationship between Project governance and sustainability of community-based water projects in Trans-Nzoia County variables was found to be linear, positive, strong and significant. Regression coefficient from multiple regression analysis revealed that a unit increase in Project governance would results to a significant increase in sustainability of community-based water projects in Trans-Nzoia County. At 5% level of significance and 95% level of confidence, Project governance was significant in predicating the degree of sustainability of community-based water projects in Trans-Nzoia County.

The fourth objective was to establish the influence of Monitoring and evaluation on sustainability of community-based water projects in Trans-Nzoia County. Results established that the relationship between Monitoring and evaluation and sustainability of community-based water projects in Trans-Nzoia County variables was found to be linear, positive, strong and significant. Regression coefficient from multiple regression analysis revealed that a unit increase in monitoring and evaluation would results to a significant increase in sustainability of community-based water projects in Trans-Nzoia County. At 5% level of significance and 95% level of confidence, monitoring and evaluation was significant in predicating the degree of sustainability of community-based water projects in Trans-Nzoia County.

CONCLUSIONS

Based on the findings of the study, the following conclusions were arrived at:

The study concluded that resource mobilization significantly influenced sustainability of community-based water projects in Trans-Nzoia County. This implies that increase in resource mobilization would result to improvement of sustainability of community-based water projects in Trans-Nzoia County.

The study concluded that there exists a positive and significant effect of community participation on sustainability of community-based water projects in Trans-Nzoia County. Community participation is an important factor in sustainability of community-based water projects in Trans-Nzoia County.

The study also concluded that there exists a positive and significant effect of monitoring and evaluation on sustainability of community-based water projects in Trans-Nzoia County. This implies that increase in monitoring and evaluation would result to increase in sustainability of community-based water projects in Trans-Nzoia County.

Lastly, the study concluded that there exists a positive and significant effect of project governance on sustainability of community-based water projects in Trans-Nzoia County. This is an indication that project governance which involve accountability, composition of project management team and decision-making structure ensure project sustainability. The project governance ensured accountability and adequate resources are accessible for project success.

RECOMMENDATIONS

On the basis of the outcomes, the investigation proposed the following;

Given the significant influence of resource mobilization on project sustainability, stakeholders should focus on increasing efforts to mobilize financial and material resources for water projects. This may involve exploring various funding sources, engaging with potential donors and partners, and implementing effective fundraising strategies to ensure adequate resources are available for project implementation and maintenance.

Community participation emerged as a key factor in project sustainability. Therefore, efforts should be made to actively involve local communities in all stages of the project lifecycle, from planning and decision-making to implementation and monitoring. This could include establishing community water user groups, conducting regular community meetings and consultations, and fostering partnerships between communities and project stakeholders to ensure shared ownership and commitment to project goals.

Given the positive impact of monitoring and evaluation on project sustainability, it is essential to strengthen these practices within water project management frameworks. This may involve implementing robust monitoring systems to track project progress and performance indicators, conducting regular evaluations to assess the effectiveness of project interventions, and using data-driven insights to inform decision-making and adaptive management strategies.

Effective project governance plays a crucial role in ensuring project sustainability. Therefore, efforts should be made to enhance governance structures and practices, including accountability mechanisms, composition of project management teams, and decision-making processes. This could involve establishing clear roles and responsibilities, promoting transparency and accountability in project management, and fostering collaboration and communication among project stakeholders to ensure efficient and effective project governance.

Suggestions for Further Research

The context of the current study was among community water projects in Trans-Nzoia County, the study recommended that further studies should be conducted in other community-based project especially green energy initiative such as solar energy.

Secondly, the study focused on four project management approaches which did not fully determined sustainability of community-based water projects. This implies there may be other

independent, moderating, mediating or intervening variables which may influence sustainability of community-based water projectssuch as risk management, organizational structure/culture, and resource management. Therefore, further studies should focus on the said variables.

The study used primary data; however, further studies should use qualitative data for the purpose of triangulation results from qualitative and quantitative sources.

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