



PARTICIPATORY MONITORING AND EVALUATION PRACTICES AND PERFORMANCE OF WATER PROJECTS IN WAJIR COUNTY, KENYA

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ABSTRACT

The main objective of this study was to investigate the influence of participatory monitoring and evaluation practices on performance of water projects in Wajir County, Kenya. Specifically, the study focused on: Stakeholders participation; ICT integration; as components of Participatory Monitoring and Evaluation and their influence on performance of water projects in Wajir County, Kenya. The study adopted a descriptive survey. The target population of this study was County Staff in the Planning section, treasury, budget office, County assembly oversight committee, Contractors and stakeholders/ beneficiary of the projects. The study therefore targeted population of 332 respondents. The sample size was determined using Yamane Formula. The study used stratified random sampling to select 181 respondents from the target population. This research utilized a questionnaire as the primary data collection instrument. Pretesting involved 18 staff (10% of the sample size). The validity results show that all the measures for the study were valid since the AVE values are more than 0.5 and indication that validity was met. In addition, the questionnaire met all the validity and reliability requirements and the respondents had a clear understanding of the data collection instrument hence it is good instrument for data collection. SPSS version 26 was used to analyze the data that was collected from the field. Quantitative data collected was analyzed using descriptive statistics techniques. Pearson R correlation was used to measure strength and the direction of linear relationship between variables. Multiple regression model was fitted to the data in order to determine how the independent variables affect the dependent variable. The findings were presented in tables and figures. The regression findings, with statistically significant coefficients (Stakeholder Participation: $\beta = 0.352$, $p < 0.001$; ICT Integration: $\beta = 0.463$) underscore the positive significant influence of stakeholder participation, and ICT integration. Based on the findings, it is recommended to focus on enhancing stakeholder participation, and effective ICT integration to improve overall project performance and ensure successful outcomes. This can be achieved through implementing participatory approaches in project decision-making processes, adopting advanced ICT tools for efficient project monitoring and communication, providing training programs to enhance M&E skills among staff, and fostering partnerships with relevant stakeholders to leverage their expertise and resources for project success.

Key Words: Participatory monitoring and evaluation practices, Stakeholders participation, ICT integration, Performance of water projects, Wajir County

Background of the Study

Access to clean and safe water is a fundamental human right and a critical factor in achieving sustainable development goals. According to the World Health Organization (WHO) and UNICEF, millions of people worldwide still lack access to safe drinking water, leading to waterborne diseases and compromising overall well-being (WHO/UNICEF, 2019). In response, international organizations and governments have implemented water projects to address this crisis. Participatory approaches involve engaging communities in the planning, implementation, and evaluation of projects. Participation is recognized as a key factor in ensuring the success and sustainability of development initiatives (Cleaver, 2019). In the context of water projects, involving local communities fosters a sense of ownership, enhances project relevance, and promotes long-term success.

Monitoring and evaluation are essential components of project management, providing critical feedback on project progress and outcomes (Guijt & Shah, 2018). This inclusive approach is particularly relevant in water projects, where community engagement is vital for project success. Participatory monitoring and evaluation (PM&E) is a process of self-assessment, collective knowledge generation, and cooperative action in which stakeholders in a program or intervention substantively and collaboratively identify the monitoring and evaluation issues, collect and analyze data, and take action as a result of what they learn through this process. In the development context, PM&E strengthens and deepens the contribution of primary stakeholders by honouring their perspectives, voices, preferences, and decisions. There are five key principles underpinning PM&E which include: participation, negotiation, learning, flexibility, and utilization of a wide variety of methods. PM&E focuses on monitoring, evaluation, and participation (Hilhorst & Guijt, 2017).

Research also shows that project management performance practices include: Managing Communications, Managing Stakeholders, Motivating, and Knowledge Transfer. Planning, testing, and monitoring the progress of the project work are some of the key processes used to manage the project work (Ika, Diallo, & Thuillier, 2012). Performance during monitoring is compared against the original plans created during the first days of a project and measurements must be against revised and relevant baseline plans. Monitoring projects leads to increased performance, increased satisfaction, and increased value for the investments made in the project (Callistus, 2019). Callistus (2019) further noted that the top outcome feature for project monitoring was value for the monetary investment made in the project and the alignment of project deliverables to the objectives and business strategy. According to research carried out by Ika (2020) monitoring is considered a critical success factor for any project and he identified that monitoring was one of the most significant indicators of success in projects when measured against project coordination, project environment, training, and project design.

Despite the emphasis on participatory approaches and M&E practices, challenges persist in the effective implementation and sustained performance of water projects. These challenges may include inadequate community involvement, limited technical capacities, and insufficient mechanisms for ongoing monitoring and evaluation (Mehta et al., 2018).

Statement of the Problem

Water scarcity is a persistent and critical challenge in many regions around the world, with Kenya being no exception. Despite significant efforts to address water issues, the effectiveness of water projects in Wajir County, Kenya, remains a matter of concern. One of the primary issues is the lack of comprehensive and sustained monitoring and evaluation mechanisms. According to a study conducted by the Water Services Regulatory Board (WASREB) in 2020, only 40% of water projects in Wajir County had a functional monitoring and evaluation system in place. This deficiency impedes

the ability to track project progress, identify challenges, and make informed decisions for necessary adjustments.

Additionally, community engagement, a cornerstone of participatory monitoring, has been suboptimal in Wajir County. The 2021 Water and Sanitation Joint Monitoring Programme (JMP) report reveals that only 25% of the communities in Wajir actively participate in monitoring and evaluating water projects. This lack of community involvement not only hinders the collection of valuable local knowledge but also diminishes the sense of ownership and accountability, which are crucial for sustainable project outcomes. Furthermore, the data from the Wajir County Water and Sanitation Company (WAJWASCO) indicates a concerning trend in project sustainability. Approximately 30% of water projects initiated in the past five years have faced functionality issues within the first two years of operation. This emphasizes the urgent need to address the factors contributing to project failures and enhance the overall resilience of water infrastructure.

Several studies agree that monitoring practices is a contributor factor to project performance (Hilhorst & Guijt, 2017; Ika, Diallo, & Thuillier, 2012; Gathege & Yusuf, 2019). However, monitoring practices of projects in water sectors are weak due to poor practices embraced (KNBS, 2018). Muchelule et al (2017) found out that over 60% of substantive projects fail to meet targeted goals due to ineffective monitoring and evaluation systems. This leads to project being delivered over budget, behind schedule and time frame thus affecting quality and projects performance. (Ika, Diallo, & Thuillier, 2012).

Most of water projects in Wajir County fail due to inadequate monitoring and evaluation. Though internal and external experts have been conducting M&E and dictated all aspects of the entire process in policy or management of decisions that emanate from the findings (Nduta, 2016). In light of these, the study aimed to explore the root causes of the deficiencies in participatory monitoring and evaluation practices and their direct correlation with the performance and sustainability of water projects in Wajir County, Kenya. By identifying and addressing these issues, this research seeks to provide actionable insights for policymakers, water authorities, and community stakeholders to enhance the impact and longevity of water projects in the region.

Objectives of the Study

The following specific objective guided the study:

- i. To examine the influence of stakeholders' participation on performance of water projects in Wajir County, Kenya.
- ii. To explore the influence of ICT integration on performance of water projects in Wajir County, Kenya.

LITERATURE REVIEW

Theoretical Review

Stakeholders Participation Theory

Stakeholders Theory was developed by Professor Edward Freeman (Freeman, 1984). Stakeholder theory is a managerial concept of organizational strategy and ethics (Freeman, 1984; Freeman & Reed, 1983). The central idea is that an organization's success in its project initiatives is dependent on how well it manages the relationships with key groups such as customers, employees, suppliers, communities, financiers, and others that can affect the realization of its purpose. Stakeholder participation refers to the act of getting involved in the various aspects and stages of the project or program management cycle through material contributions and consultation (Freeman, Harrison, & Wicks, 2007).

Stakeholder participation involves the process or activity of informing the public and inviting them to have input into the decisions that affect them. Whereas minor choices and emergency situations are generally not appropriate for stakeholder participation, complex circumstances with far-reaching impacts warrant stakeholder involvement and when done proactively, rather than in response to a problem, help to avoid problems in the future. The focus of public participation is usually to share information with and gather input from, members of the public who may have an interest in a project (Donald & Preston, 1995). This theory was useful in explaining how stakeholders' participation influences the performance of water projects in Wajir County, Kenya.

Technology Acceptance Theory

The technology acceptance theory was conceptualized by Davis (1989) to help predict the intention of an individual in using and accepting Information Technology (IT) and systems. The theory is grounded in the Theory of Reasoned Action (TRA) (Ma & Liu, 2004). The determinants of this theory include; Perceived Usefulness (PU) which is the extent to which an individual considers that the use of specific information will eventually improve performance; Perceived Ease of Use (PEOU) which denotes the extent to which use of a system by an individual will require minimal effort. An Information system (IS) will be successful only if both PU and PEOU are achieved in a given system (Al-Mamary, Shamsuddin, & AbdulHamid, 2013)

This theory postulates that PMIS usage is determined by the system's use intention, where the use intention is jointly determined by a person's attitude toward using the system and its perceived usefulness (Nguyen, Nguyen, & Cao, 2016). According to the theory, PMIS gives an opportunity to project managers to increase the performance of the projects they are undertaking and has a direct effect on the success of the project. In this study, this theory focuses on adopting PMIS leading to project success and enhancing the project's quality. A good PMIS quality enhances information quality and subsequently affects project decision-making. This theory was useful in explaining the variable of ICT integration and its influence on the water projects in Wajir County, Kenya.

Conceptual Framework

This study's conceptual framework sought to demonstrate the relationship between participatory M&E and Performance of water projects in Wajir County, Kenya. The conceptual framework is illustrated in figure 2.1 below.

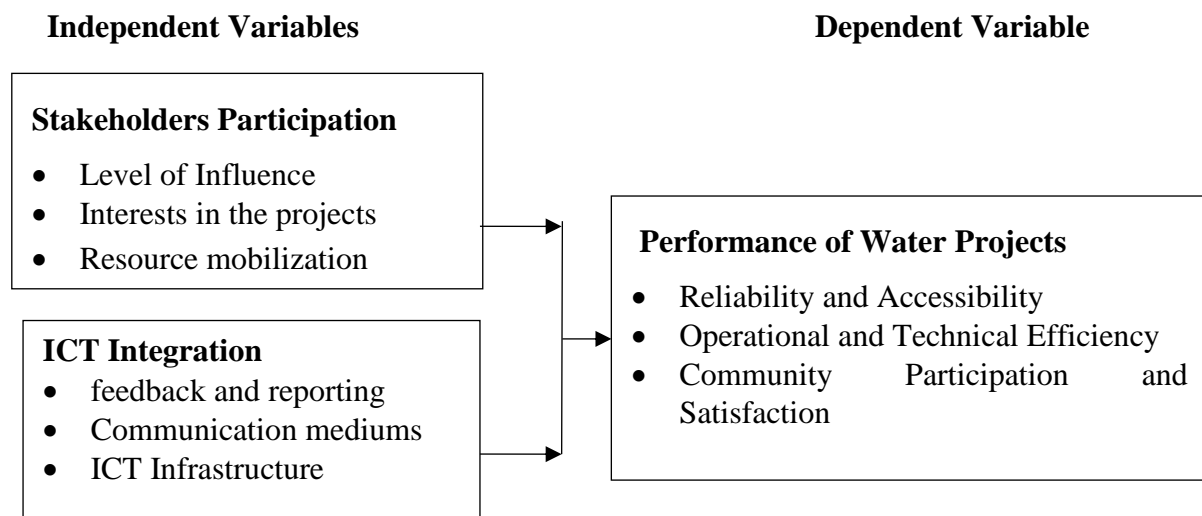


Figure 2.1: Conceptual Framework

Stakeholders Participation

Stakeholders are individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or project completion; they may also exert influence over the project and its results (PMI, 2017). They may also include people who have a strong interest in the effort for academic, philosophical, or political reasons, even though they and their families, friends, and associates are not directly affected by it. Stakeholders can be classified into three categories namely primary, secondary and key stakeholders (Kerzner, 2017).

Primary stakeholders who are the people or groups that stands to be directly affected, either positively or negatively, by an effort or the actions of an agency, institution, or organization. In some cases, there are primary stakeholders on both sides of the equation: a regulation that benefits one group may have a negative effect on another. Secondary stakeholders refer to people or groups that are indirectly affected, either positively or negatively, by an effort or the actions of an agency, institution, or organization (Ananga, Njoh, Anchang, & Akiwumi, 2016). Key stakeholders might belong to either or neither of the first two groups, are those who can have a positive or negative effect on an effort, or who are important within or to an organization, agency, or institution engaged in an effort. The director of an organization might be an obvious key stakeholder, but so might the line staff. Other examples of key stakeholders might be funders, elected or appointed government officials, heads of businesses, or clergy and other community figures who wield a significant amount of influence (Aken, 2017).

Stakeholders participation has been widely used by organizations for various purposes including: controlling risk, accomplish managerial control, accountability and responsibility, and development of the organization image. Stakeholders approaches vary from being passive where they give information to self mobilization where they play an investigative role on the process. Different approaches of participation are appropriate in different stages of the project however, it is important to for the stakeholders to understand how they are involved in the project, the information they provide, and their power in the decision making process. Dealing with institutions, individuals, or even groups may affect the outcome, process, and even the content of the project and this has been viewed a crucial and complex task in project management. There are many challenges associated with stakeholders and this is due to the fact that the expectations of the stakeholders are not adequately met as they define success in using different factors (Silva, Jeronimo, & Viera, 2019)

During project initiation, the needs of the stakeholders are identified and later prioritized and their sources of problems identified too (Aken, 2017). Primary stakeholders group identification is very important for the development of capacity of committees or NGOs though the other stakeholders with specialized responsibilities and capabilities are very important too. Thus identification should be done early in the project to give a proper meaning of the intention development. Stakeholder involvement is important in the project life cycle management especially when interested individual have a key role to play in implementation process and operation (Paton & Andrew, 2019).

Stakeholders can be a considerable asset, contributing knowledge, insights and support in shaping a project brief as well as supporting its execution (Bourne & Walker, 2017). The high failure rate of major projects has been attributed to a lack of attention to stakeholders. Stakeholders' negative attitudes towards a project can cause cost overruns and time schedule delays due to conflicts over project design and implementation (Olander & Landin, 2017). According to Kerzner (2017) considerable project management effort is devoted to managing stakeholders that begins with

stakeholders identification, determining what they want and predicting what they will do, which will be based upon their perception of the project.

Stakeholder participation is critical to the success of every project in every organization. In a project environment, these stakeholders are usually numerous, and can vary significantly in the degree of influence in both directions (Biskupek, 2016). Power, legitimacy and urgency are key stakeholder characteristics. As such, a project manager is required to develop sufficient understanding of such characteristics, which are in fact changing variables within the various stakeholders in a project environment. The number and nature of stakeholders will vary with the life of the project and it would therefore make sense to carry out the review of identification throughout the project (Barasa & Jelagat, 2019).

Participation can take place in different places of the project cycle and at different levels of society, and take many different forms. These can range along a continuum from contribution of inputs to predetermined projects and programmes, to information sharing, consultation, decision making, partnership and empowerment (Barasa & Jelagat, 2019). Participation is both a means and an end. Participation as an end is viewed as an active, dynamic and genuine process which unfolds over time and whose purpose is to develop and strengthen the capabilities of rural people to intervene more directly in development initiatives. As an end, participation is seen as the empowerment of individuals and communities in terms of acquiring skills, knowledge and experience, leading to greater self-reliance (Biskupek, 2016).

ICT Integration

Information Communication Technology is a collective term for a wide range of software, hardware, telecommunications and information management techniques, applications and devices, and are used to create, produce, analyze, process, package, distribute, receive, retrieve, store and transform information within and external to an organization (Selda & Emmett, 2020). A study by Selda and Emmett, (2020) noted ICT helps in determination of supply chain performance by facilitating application of effective communication channel, by ensuring ICT is applied in all organization functions, by ensuring teamwork coordination and by supporting supplier relationship management.

According to Tatham and Houghton (2017) ICT plays a major role in the execution of humanitarian logistics functions and this helps to improve supply chain performance. Tatham and Houghton (2017) notes that in many organizations worldwide, ICT is the key factor that facilitates execution of logistics functions through application of ICT based systems such as Electronic Data Interchange, goods in transits tracking systems and other computer based supply chain management systems. A study by Roh, an Han (2019) noted that many humanitarian organizations' in countries like Japan and India succeed in offering humanitarian assistance during disasters due to implementation of ICT based disaster response systems that helps in rapid disaster response. Findings from another study by Roh (2019) confirmed that In Africa, most disaster stricken remote areas face humanitarian assistance challenges due to poor communication which is as result of poor ICT infrastructure. Emmanuel (2019) made inferences that information sharing is a very critical factor that supports effective execution of humanitarian logistics in African NGOs.

Reichheld (2018) noted that ICT creates an effective communication platform between suppliers and the organization inventory management department, it helps suppliers to effectively monitor inventory movement e and helps in reduction of lead times hence leading to realization of increased organization performance. ICT plays an important role in execution of humanitarian logistics especially in remote areas where there is mobile communication networks and thus humanitarian organizations should embraced modern ICT systems to facilitate quick response to disasters and

this improves their supply chain performance. Schmid and Adams (2016) posited that a project manager should have skills to steer a project team through respective project stages and project life cycles. Support was additionally a strong operational standard, since leaving expected group individuals taking an interest in the venture out of basic leadership expanded the hazard that intercessions would not coordinate individuals' priorities and needs (CARE PMERL, 2018). Participatory strategies gave dynamic association in basic leadership for those with a stake in the project, program, or system and produced a feeling of proprietorship in the M&E results and suggestions (World Bank, 2018).

Performance of Projects

Monitoring is defined as the routine continuous tracking of the key elements of project performance performance that is: inputs (resources, equipment etc) activities and outputs, through recordkeeping and regular reporting (Association for Project Management, 2018). It is also the tracking the planned performance against the actual performance, in order to able to report on how the project is progressing and if there is need for corrective action and to facilitate decision making by the project manager during performance (PMI, 2017) Evaluation on the other hand is the episodic (not continuous as the case with monitoring usually midterm and at end of the project) assessment of an ongoing or completed project to determine its actual impact against the planned impact (strategic goal or objectives for which it was implemented) efficiency, sustainability, effectiveness (Kerzner, 2017).

Evaluations are systematic and independent and they are an assessment of an ongoing or completed project including its design, performance and results. Evaluations also assess the relevance, efficiency of performance, effectiveness, impact and sustainability of the project (Ramadhani & Yusuf, 2019). The purpose of monitoring is to ensure that performance is moving according to plans and if not the project manager takes corrective action, it is the control function of project management. Monitoring enhances project management decision making during the performance hence increasing the chances of good project performance. Monitoring also aids early identification of problems before they get out of hand since it is continuous (Ramadhani & Yusuf, 2019).

According to Muchelule et al (2017), monitoring and evaluation facilitates transparency and accountability of the resources to the stakeholders including donors, project beneficiaries and the wider community in which the project is implemented. Monitoring however tracks and documents resource use throughout the performance of the project. This enhances accountability in that it facilitates the demonstration of the resource use throughout the performance of the project. Monitoring also facilitates evaluation of the project meaning that in a well-designed monitoring and evaluation system, monitoring contributes greatly towards evaluation. Information from monitoring feeds into the evaluation process (Muchelule, Iravo, Odhiambo, & Shalle, 2017).

Shapiro (2017) emphasizes the fact that evaluation compares the project impact with what was set to be achieved in the project plan and further argues that evaluation examines project performance i.e. how the project impacts were achieved and what went wrong or right for the benefit of organization all earning. Shapiro (2017) further states that the emphasis of this approach to evaluation is on impact of the project after performance. It does not recognize the midterm evaluations that tend to look at the continued relevance and sustainability of the project and the impacts that the project has had even before completion. The PMI (2017) also asserts that evaluations occur at the end of the project during the lifecycle, where it assess how the project performed and capture any lessons from it. Monitoring information is very helpful in determining how the project progressed in terms of schedule, cost and any hindering problems encountered during performance.

As highlighted earlier when assessing how the project progressed during evaluation, information from monitoring is very relevant and useful hence there should be safekeeping of monitoring data (Shapiro, 2015). Yang et' al (2017) carried out an analysis that suggested that increases in levels of leadership may enhance relationships among team members. The study also indicated that teamwork had a statistically significant influence on project performance. Yang et'al (2017) analyzed the various 'factors which are critical to the success of a project most which were centered around managing stakeholders, Assessing attributes (power,urgency, and proximity) of stakeholders, Compromising conflicts among stakeholders effectively, Formulating a clear statement of project missions, Predicting stakeholders' reactions for implementing the strategies, Analyzing the change of stakeholders' influence & relationships during the project process and Assessing stakeholders' behavior (Orre, Ramadhani, & Yusuf, 2019).

Research also shows that some of the best project management performance practices include: Managing Communications, Managing Stakeholders, Motivating, and Knowledge Transfer. Planning, testing and monitoring the progress of the project work are some of the key processes used to manage the project work (Dvir, Raz, & Shenhar, 2016). Under normal circumstances the project managers implement any project as guided by government rules and regulations, organizations requirements, stakeholder's preferences and client location. It is important that management confirms the completion of promised deliverables. Performance during monitoring is compared against the original plans created during the first days of a project and measurements must be against revised and relevant baseline plans (Callistus, 2019). It is the role of management to facilitate monitoring and evaluation of the projects. Management's competence, commitment to the project, communication and cooperation with the project teams has a significant contribution towards the success of a construction project. These factors were found to be of significance in as assessed in Malaysian construction industry (Masrom, Rahim, Mohamed, Chen, & Yunus, 2017).

Empirical Review

Stakeholders participation and Performance of Projects

Matu (2020) examine 'stakeholder participation in project life cycle management, risk management practices and completion of urban roads transport infrastructure projects in Kenya.' The study adopted mix correlational and descriptive survey design. The target population Kenya Urban roads authority (KURA) were a sample of 309 respondents was used. The study found that stakeholder participation in in initiation had a significant influence on completion of roads projects. The study also established that stakeholder participation in project planning had a significant influence on completion of road projects. Combined stakeholder participation in the project life cycle management had a significant influence on completion of read projects (Matu, 2020).

Kobusingye et al (2017) examine the 'influence of stakeholder's involvement on project outcomes of Water, Sanitation and hygiene (WASH) projects in Rwanda. The study established that stakeholder involvement in project implementation had the most significant influence of the project outcomes followed by project planning, while project identification had the least influence. The study focused on the influence of community participation in WASH projects (Kobusingye, Mungatu, & Mulyungi, 2017). Biskupek (2018) opine that stakeholders are significant for success implementation of projects and their impact can determine the failure or success of the project. for a successful project to be achieved, stakeholders' expectation and objectives must be met (Biskupek, 2016). Regardless of the degree of participation or their significance, stakeholders are important consideration in project management (Usadolo & Caldwe, 2016)

Musyoki and Gakuu (2018) studied institutional factors affecting the implementation of infrastructure projects in Embu County. Correlation design was adopted. The study targeted 55 employees in the department of infrastructure and transport. One of the study objectives was to examine the influence of stakeholders in implementation of infrastructure projects. The study used applied census technique. The study found that stakeholders influence negatively the implementation of projects (Musyoki & Gakuu, 2018). Ngare and Cheluget (2019) in their study of the role of stakeholder involvement in the sustainability of projects at Nyeri county referral hospital. The study established that stakeholder participation was crucial for sustainability of donor funded projects as they ensured commitment to the objectives of the projects through seamless feedback communication that ascertain the requirements for each stakeholder and how to align the requirements to project implementation (Ngare & Cheluget, 2018).

ICT Integration and Performance of Projects

The study by Koffi-Tessio (2017), on Efficacy and Efficiency of Monitoring-Evaluation Systems (MES) for Projects Financed by the Bank Group that was done in Burkina Faso, Mauritania, Kenya, Rwanda and Mozambique, through desk review and interviews, for projects approved between 1987 and 2000. Monitoring- Evaluation systems are not meeting their obligatory requirements as decision making tool; instead their activities are viewed as controlling by a bureaucratic management. The poor acquisition of the appropriate M & E systems by NGOs is also attributed to the organizations overemphasis on the physical infrastructure (for instance computer equipment's, working capital e. t. c.) rather than methodological and conceptual training.

RESEARCH METHODOLOGY

This research study, used descriptive research design. The population for this study comprised County Staff in the Planning section, County assembly water committee, Contractors and Beneficiaries. The total target population will therefore be 332 whose distribution. Yamane formula (1967) was used to determine the sample size since the population was less than 10,000. Thus, the study sample size was 181 respondents. The study used stratified random sampling to select 181 respondents from the target population. The study then used simple random sampling in selecting a sample from each stratum. The research data was collected by the use of primary data. Primary data was collected through questionnaires. A pilot study is a small-scale version of the study used to establish procedures, materials and parameters to be used in the full study. A pilot test is conducted to detect weakness in design and instrumentation and to provide proxy data for selection of a probability sample (Kothari & Garg, 2014). A 10% of the sample (18) respondents used for the pilot study as recommended by Kothari (2018).

The study generated qualitative and quantitative data due to the nature of the instrument to be adopted which consists of semi-structured questionnaires. The researcher cleaned the data after getting the questionnaires from the field. Data was merged and tabulated on tabulation sheets on SPSS (Statistical Package for Social Sciences). Reporting of data was done through descriptive statistics including simple graphs, charts, tables, means, percentages, and frequency tables. Multiple regression analysis aided the analysis of the variable relationships.

RESEARCH FINDINGS AND DISCUSSION

The study sample size was 181 county staff in the planning section, county assembly water committee, contractors and beneficiaries. All selected respondents were issued with questionnaires for data collection. Out of all the questionnaires issued, 163 were returned having been fully filled. This formed a response rate of 90.1%. The response rate was adequate for further analysis and reporting as supported by Mugenda and Mugenda (2017) who argued that for a sample size to be

representative enough there should be a response rate of at least 50%. Therefore, this was considered an acceptable response rate for the study.

Descriptive Analysis

Descriptive analysis was used to describe the basic features of the data under study as they provide summaries about the sample and its measures. In this study descriptive analysis including means, and standard deviation, were used to describe the likert scale questions associated with each of the study variable. The study requested respondents to rate their responses in a scale of 1-5 where 1= Strongly Disagree, 2=Disagree, 3= Not Sure, 4=Agree and 5=Strongly Agree. The means and standard deviations were used to interpret the findings where a mean value of 1-1.4 was strongly disagree, 1.5-2.4 disagree, 2.5-3.4 Not Sure, 3.5-4.4 agree and 4.5-5 strongly agree. Standard deviation greater than 2 was considered large meaning responses were widely spread out and not tightly clustered around the mean.

Stakeholder Participation

The first objective of the study was to examine the influence of stakeholders' participation on performance of water projects in Wajir County, Kenya. Respondents were therefore asked to indicate the extent to which they agree or disagree with various statements on stakeholders' participation. Table 1 presents summary of the finding obtained.

Table 1: Descriptive Statistics on Stakeholder Participation

Statements	Mean	Std. Dev.
Stakeholders understand the mission, vision and objectives of the project	3.906	1.047
Stakeholders are involved in monitoring and evaluation of the project activities	3.834	0.239
The organization has baselines for monitoring its stakeholders activities	3.803	0.115
Stakeholders are involved in strategy planning process	3.77	1.135
The stakeholders influences contributes a lot in projects performance	3.763	0.956
Stakeholders participate in making budget plans and resource allocations	3.742	1.133
Stakeholder interests are well assessed in organization projects	3.681	0.366
Aggregate Score	3.786	0.713

From the findings, the respondents agreed on average that stakeholders understand the mission, vision and objectives of the project (M= 3.906, SD= 1.047); that stakeholders are involved in monitoring and evaluation of the project activities (M= 3.834, SD= 0.239); and that the organization has baselines for monitoring its stakeholders activities (M= 3.803, SD= 0.115). They also agreed that stakeholders are involved in strategy planning process (M= 3.77, SD= 1.135); that the stakeholders influences contributes a lot in projects performance (M= 3.763, SD= 0.956); that stakeholders participate in making budget plans and resource allocations (M= 3.742, SD= 1.133); and that stakeholder interests are well assessed in organization projects (M= 3.681, SD= 0.366).

The findings above supported by an aggregate mean of 3.786 (SD= 0.713) show that the respondents agreed that stakeholders' participation influences performance of water projects in Wajir County, Kenya. The finding that stakeholders' participation significantly influences the performance of water projects in Wajir County, Kenya, aligns with existing literature on stakeholder engagement and project performance. Matu (2020) emphasizes the crucial role of stakeholder participation throughout the project lifecycle in enhancing project outcomes, particularly in infrastructure projects like water projects. This finding is further corroborated by the study conducted by Kobusingye et al. (2017) on water, sanitation, and hygiene (WASH) projects in Rwanda, which highlights the substantial impact of stakeholder involvement, especially in project implementation, on project outcomes. These studies collectively underscore the

importance of stakeholders' active engagement in project planning, execution, and monitoring, emphasizing its positive influence on project performance, a notion validated by the respondents' agreement in the study conducted in Wajir County, Kenya.

ICT integration

The second objective of the study was to explore the influence of ICT integration on performance of water projects in Wajir County, Kenya. The respondents were asked to indicate their level of agreement with statements on ICT integration. Table 2 presents summary of the findings obtained.

Table 2: Descriptive Statistics on ICT integration

ICT integration	Mean	Std. Dev.
There is clear communication channels within organization through integration of ICT	3.856	0.861
The organization gives regular progress to all stakeholders through ICT application on different levels of its staffs	3.84	0.124
There is vast ICT infrastructure to run organization activities	3.84	0.178
The organization has put in place mechanisms that ensure there is regular monitoring of ICT infrastructures	3.834	0.463
The organization uses ICT to remove its reports and analyse them	3.787	0.645
Application of technology has improved organization decision making process on project performance	3.787	0.817
Organization has a clear ICT policy in its M&E functions	3.746	0.412
Aggregate Score	3.813	0.500

The findings show that the respondents agreed on average that there is clear communication channels within organization through integration of ICT (M= 3.856, SD= 0.861); that the organization gives regular progress to all stakeholders through ICT application on different levels of its staffs (M= 3.84, SD= 0.124); and that there is vast ICT infrastructure to run organization activities (M= 3.84, SD= 0.178). Respondents also agreed that the organization has put in place mechanisms that ensure there is regular monitoring of ICT infrastructures (M= 3.834, SD= 0.463); that the organization uses ICT to remove its reports and analyse them (M= 3.787, SD= 0.645). They were also in agreement that application of technology has improved organization decision making process on project performance (M= 3.787, SD= 0.817); and that organization has a clear ICT policy in its M&E functions (M= 3.746, SD= 0.412).

The findings above supported by an aggregate mean of 3.813 (SD= 0.500) show that the respondents agreed that ICT integration influences performance of water projects in Wajir County, Kenya. The findings indicating that ICT integration influences the performance of water projects in Wajir County, Kenya, are consistent with Koffi-Tessio (2017) discusses the efficacy and efficiency of monitoring-evaluation systems (MES) for projects financed by development institutions, highlighting the importance of ICT in improving decision-making processes and project performance. Additionally, Wekesa and Maurice (2021) explore the relationship between participatory planning and project sustainability in youth-funded projects, underscoring the positive influence of ICT integration on project sustainability. These studies collectively emphasize the significance of leveraging ICT tools and systems to enhance project monitoring, evaluation, and overall performance, findings that align with the respondents' agreement in the study conducted in Wajir County, Kenya.

Water Project Performance

The main focus of the study was to investigate the influence of participatory monitoring and evaluation practices on performance of water projects in Wajir County, Kenya. Respondents were

therefore asked to indicate their level of agreement with statements on performance of water projects in Wajir County, Kenya. Table 3 presents summary of the findings obtained.

Table 3: Descriptive Statistics on Water Project Performance

Statements	Mean	Std. Dev.
The projects meet its intended goals and objectives	3.855	0.226
There is proper utilization of project resources on its performance	3.844	0.521
Projects are implemented and completed within expected timeframe and budget.	3.833	0.989
Monitoring and evaluation facilitate transparency and accountability of the of project resources.	3.823	0.458
Concluded projects normally meet the required scope and quality standards.	3.794	1.103
Monitoring and evaluation facilitate transparency and accountability of the of project resources.	3.793	0.374
Seeking project feedbacks from stakeholders improves its performance	3.736	0.956
Aggregate Score	3.811	0.661

The findings agree on average that the projects meet its intended goals and objectives (M= 3.855, SD= 0.226); that there is proper utilization of project resources on its performance (M= 3.844, SD= 0.521); and that projects are implemented and completed within expected timeframe and budget (M= 3.833, SD= 0.989). Respondents also agreed that monitoring and evaluation facilitate transparency and accountability of the of project resources (M= 3.823, SD= 0.458); that concluded projects normally meet the required scope and quality standards (M= 3.794, SD= 1.103). They further agreed that monitoring and evaluation facilitate transparency and accountability of the of project resources (M= 3.793, SD= 0.374); and that seeking project feedbacks from stakeholders improves its performance (M= 3.736, SD= 0.956).

The findings indicating that projects generally meet their intended goals and objectives, exhibit proper utilization of resources, and adhere to expected timelines and budgets align with existing literature on project management and performance evaluation. Matu (2020) discusses the importance of stakeholder participation and effective project planning in achieving project goals, which resonates with the respondents' agreement on project success. Additionally, Sambasivan and Soon (2017) emphasize the critical role of proper planning and resource management in ensuring project success and timely completion, findings that correspond with the respondents' perceptions regarding resource utilization and adherence to timelines and budgets. Moreover, Gathege and Yusuf (2019) highlight the role of monitoring and evaluation in enhancing transparency, accountability, and project quality, reinforcing the respondents' agreement on the facilitative role of M&E processes. These studies collectively underscore the importance of effective project management practices, stakeholder engagement, and robust monitoring and evaluation mechanisms in ensuring project success and accountability, findings that align with the respondents' perceptions in the study conducted.

Inferential Statistics

Correlation Analysis

The study computed correlation analysis to test the strength and the direction of the relationship that exists between the dependent and the independent variables. The correlation values range from 0 to 1; if the correlation values are $r = \pm 0.1$ to ± 0.29 then the relationship between the two variables is small, if it is $r = \pm 0.3$ to ± 0.49 the relationship is medium, and when $r = \pm 0.5$ and above there is a strong relationship between the two variables under consideration. Table 4 presents correlation analysis findings for this study.

Table 4: Correlations

		Water Project Performance	Stakeholder Participation	ICT integration
Water Project Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	163		
Stakeholder Participation	Pearson Correlation	.603**	1	
	Sig. (2-tailed)	.000		
	N	163	163	
ICT integration	Pearson Correlation	.799**	.332	1
	Sig. (2-tailed)	.000	.211	
	N	163	163	163

The correlation analysis reveals a significant positive relationship between stakeholder participation and water project performance in Wajir County, Kenya ($r = 0.603$, $p < 0.001$). This finding aligns with existing literature emphasizing the crucial role of stakeholder engagement in project success. Matu (2020) underscores the importance of stakeholder participation in project life cycle management, highlighting its influence on project completion. Similarly, Ngare and Cheluget (2019) emphasize stakeholder involvement in ensuring project sustainability, a factor vital for long-term success. These findings collectively suggest that active involvement of stakeholders enhances project performance by ensuring alignment with community needs and fostering ownership and support throughout the project lifecycle.

Furthermore, the correlation analysis reveals a significant positive relationship between ICT integration and water project performance in Wajir County ($r = 0.799$, $p < 0.001$). This finding resonates with literature highlighting the transformative role of ICT in project management and monitoring. Koffi-Tessio (2017) discusses the efficacy of monitoring-evaluation systems in enhancing project performance, emphasizing the importance of ICT adoption. Similarly, Reichheld (2018) underscores the value of ICT in facilitating effective communication and resource management, crucial factors for project success. These findings collectively suggest that leveraging ICT tools and systems enhances project efficiency, transparency, and accountability, thereby contributing to improved water project performance.

Multiple Regression Analysis

The study computed multiple regression analysis to test the influence of participatory monitoring and evaluation practices on performance of water projects in Wajir County, Kenya. Using model summary, the study tested the amount of variation in performance of water projects in Wajir County, Kenya as a result of changes in the independent variables.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.830 ^a	.690	.682	.35270

a. Predictors: (Constant), Stakeholder Participation, ICT integration

The statistical model used to predict water project performance in Wajir County, Kenya demonstrates a strong relationship, as indicated by an R value of .830. This value signifies that approximately 69% of the variance in water project performance can be explained by the predictors included in the model, namely Stakeholder Participation, and ICT Integration. The adjusted R square value, which considers the number of predictors and sample size, stands at .682, indicating that these predictors collectively provide a good fit for the model. These findings imply that the included predictors—Stakeholder Participation, and ICT Integration—have a significant influence

on water project performance in Wajir County, Kenya, and collectively contribute to explaining a substantial proportion of its variance.

The study tested significance of the fitted model using analysis of variance. The significance of the model was tested at 95% confidence interval.

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.665	4	10.916	87.751	.000 ^b
	Residual	19.655	158	.124		
	Total	63.320	162			

a. Dependent Variable: Water Project Performance

b. Predictors: (Constant), Stakeholder Participation, ICT integration

The regression model demonstrates a significant overall fit, as indicated by a large F-statistic of 87.751 with a corresponding p-value (Sig.) of .000. This p-value suggests that the probability of observing such a large F-statistic under the null hypothesis (i.e., no relationship between predictors and the dependent variable) is extremely low. It implies that at least one of the predictors (Stakeholder Participation, and ICT Integration) has a significant effect on water project performance. Additionally, the proportion of variance in water project performance explained by the predictors, represented by the R-squared value, is substantial. This suggests that the included predictors collectively contribute to explaining a large portion of the variability in water project performance in Wajir County, Kenya.

The coefficients values were used to fit the regression model.

Table 7: Beta Coefficients of Study Variables

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.336	.094		3.574	.005
1 Stakeholder Participation	.352	.065	.257	5.415	.000
ICT integration	.463	.076	.506	6.101	.000

a. Dependent Variable: Water Project Performance

From the findings, the following regression equation was fitted;

$$Y = 0.336 + 0.352 X_1 + 0.463 X_2$$

Firstly, stakeholder participation demonstrated a statistically significant positive relationship with water project performance ($B = 0.352$, $p = 0.000$), echoing previous studies emphasizing the crucial role of stakeholder engagement in project success (Matu, 2020; Kobusingye et al., 2017). This finding suggests that actively involving stakeholders in the planning and execution of water projects can lead to better outcomes and increased project success rates. Stakeholder participation ensures that the perspectives and needs of all relevant parties are considered, ultimately enhancing project relevance, ownership, and sustainability.

ICT integration also demonstrated a strong positive relationship with water project performance ($b = 0.463$, $p = 0.000$), consistent with prior research highlighting the enhancing role of technology in project outcomes (Koffi-Tessio, 2017; Reichheld, 2018). This finding underscores the importance of leveraging information and communication technologies to improve the efficiency, effectiveness, and overall performance of water projects. ICT integration can streamline data collection, enhance communication among project stakeholders, facilitate real-time monitoring, and enable evidence-based decision-making, ultimately contributing to better project outcomes.

Conclusions

The study findings underscore the crucial role of stakeholder participation in enhancing the performance of water projects in Wajir County, Kenya. Active involvement of stakeholders throughout the project lifecycle, from strategic planning to monitoring and evaluation, was associated with improved project outcomes. The positive correlation between stakeholder participation and water project performance highlights the significance of engaging diverse stakeholders in project decision-making processes. Therefore, the study concludes that stakeholder participation significantly influences the performance of water projects in Wajir County, Kenya.

The integration of Information and Communication Technology (ICT) was found to positively impact the performance of water projects in Wajir County, Kenya. The study revealed that leveraging ICT tools and infrastructure enhances communication, monitoring, and decision-making processes, leading to improved project outcomes. The significant correlation between ICT integration and water project performance highlights the transformative role of technology in project management. Therefore, the study concludes that ICT integration significantly influences the performance of water projects in Wajir County, Kenya, emphasizing the need for organizations to embrace digital solutions for project monitoring and evaluation.

Recommendations

Based on the findings highlighting the significant influence of stakeholder participation on water project performance in Wajir County, Kenya, it is recommended that project managers and decision-makers prioritize and facilitate active involvement of stakeholders throughout the project lifecycle. This can be achieved through regular engagement sessions, transparent communication channels, and mechanisms for soliciting stakeholder feedback. Additionally, fostering a culture of collaboration and inclusivity among stakeholders can lead to better project outcomes and increased community support. Furthermore, stakeholders should be adequately informed about project goals, objectives, and progress to ensure their continued commitment and contribution to project success.

Given the significant impact of ICT integration on water project performance, organizations involved in water projects in Wajir County should prioritize the adoption and utilization of appropriate ICT tools and systems. This includes investing in technology infrastructure, such as communication networks and data management systems, to facilitate efficient information sharing, collaboration, and decision-making. Training and capacity building initiatives should also be implemented to enhance stakeholders' ICT literacy and skills. Furthermore, organizations should develop clear ICT policies and guidelines to govern the use and management of technology in project monitoring, evaluation, and reporting. By embracing ICT integration, organizations can streamline project processes, improve data accuracy, and enhance overall project performance.

Suggestions for Further Studies

Further research could focus on assessing the scalability and sustainability of monitoring and evaluation practices in water project management, considering factors such as long-term resource availability, and community engagement. Finally, comparative studies across different counties or regions could provide valuable insights into the contextual factors influencing water project management outcomes and contribute to the development of more tailored and effective strategies for improving water access and quality in arid and semi-arid regions of Kenya.

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