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PROJECT MONITORING AND EVALUATION PRACTICES AND PERFROMANCE OF WATER PROJECTS IN WESTERN REGION, KENYA

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ABSTRACT

According to the Kenya National Water Services Strategy (2018 - 2022), sustainable water access levels in Kenya were estimated to be at 60%, while sanitation was estimated at 68%. However, many water projects in Kenya experience project time overrun, budget overrun and as well do not meet product specifications, customer needs and management objectives. The purpose of this study is to examine the influence of Project Monitoring and Evaluation practices on the performance of water projects in western region, Kenya. Specifically, the study sought to assess the influence of monitoring and evaluation planning on the performance of water projects in western region, Kenya and to determine the influence of monitoring and evaluation technical capacity on the performance of water projects in western region, Kenya. This study used descriptive research design. In this study the unit of analysis was the 218 water projects while the unit of observation was 654 respondents comprising of project managers, project supervisors and project Surveyors. The study's sample size was reached at using Krejcie and Morgan sample size determination formula. Therefore, using the formula, the sample size for the study was 242 respondents. The study used primary data which was collected through use of a semi structured questionnaire. Quantitative data collected was analyzed using descriptive statistical techniques which are frequencies, mean, standard deviation. Inferential statistics which include Pearson correlation and the Regression Analysis Model will be used to test the relationship between study variables. The significance of the model was tested at 5% level of significance. Data was analysed using Statistical Package for Social Sciences (SPSS) software. The study results were presented through use of tables and figures. The study found that monitoring and evaluation planning has a positive and significant effect on performance of water projects in western region, Kenya. Moreover, the study found out that monitoring and evaluation technical capacity has a positive and significant effect on performance of water projects in western region, Kenya. The study therefore recommends that the management of water projects in western region, Kenya ensure that there are clear roles and responsibilities, schedule of activities and resource planning to facilitate effective project planning. Further, the study recommends that the staff working for water projects in western region, Kenya are trained in M&E possess experience in M&E and also have academic qualification in M&E.

Key Words: Project Monitoring and Evaluation practices, M&E planning, M&E Technical Capacity, Performance of Water Projects

Background of the Study

Monitoring and evaluation of projects is not only important to projects but it is part and parcel of project design (PMBOK, 2016). Resources are scarce and they need to be properly and efficiently utilized. Monitoring and evaluation has been used globally over the last several years as an integral part of the project cycle and of good management practice (Olive, 2018). Olive observes that monitoring and evaluation is fundamental if the project goals, objectives and success are to be realized. Monitoring and evaluation provides answers to questions regarding the output, effects and impact of the project or program in the life of the target population. It establishes the necessary linkage among a set of activities undertaken in project planning and management: identification of problems, feasibility study, and design of the project/program, approval process, organization, implementation and supervision processes, completion, evaluation and follow-up. Information secured through monitoring and evaluation must be relevant, that is, geared to specific needs of program and project administrators; timely, that is, available and accessible at the time decisions are taken; and accurate, that is, reliable and empirically verifiable (Ndegwa, 2019).

According to Javier and Alonso (2017), more than 884 million people worldwide lack access to safe drinking water and an estimated 2.5 billion lack access to basic sanitation services. They further state that the World Health Organization estimates that 6.3% of all deaths worldwide are caused by limited access to safe drinking water and limited access to improved sanitation facilities and hygiene practices. Therefore, achieving universal access to the two still remains a crucial goal of the global development agenda. Hutton *et al.* (2017) states that water and sanitation interventions have demonstrated economic benefits ranging from $5 to $46 per $1 invested.

Afroze and Khan (2018) noted that projects frequently fail to achieve the desired objectives as a result of a problems that could be categorized as managerial, precisely poor stakeholders' management organizational imperfect project design, interruptions in project identification as well as start-up, postponements in the course of project implementation, budget overruns and organization failure. As amongst leading countries, Australia uses monitoring systems (UNDP, 2015). Canadian government records attainment of project sustainability due to implementation of monitoring practices that makes it possible to monitor and track project progress towards goals. In the USA, implementation guidelines for infrastructural development projects underscore tracking and appraisal activities that allow for successful correction of project details and promote consistency in project progress assessment. The United States of America became particularly engaged in results-based analysis and assessment of project success management of policy and implementation programmes (Suskie, 2018).

According to United Nations (2014), 42% of people lack a basic water supply in Sub-Saharan Africa, and 72% lack basic sanitation. In addition, Africa is urbanizing rapidly and its urban population is expected to increase from 345 million in 2014 to 1.3 billion people by 2050. Urbanization in Africa is not accompanied by a sufficient rate of economic growth and therefore there is a large and growing infrastructure and financing gap. "Investments will have to be increased by a multiple of existing amounts to meet the Sustainable Development Goals for poverty reduction and water and sanitation in Sub-Saharan Africa" (OECD, 2018).

According to the Kenya National Water Services Strategy (2018 - 2022), sustainable water access levels in Kenya were estimated to be at 60%, while sanitation was estimated at 68%. According to Minyiri and Muchelule (2018), a closer look at Kenya's water projects leaves no doubt that performance is a challenge. This is evident in most of the water projects that have been undertaken over time with little impact despite the resources used. People lack proper services because systems fail, often because not enough resources are invested to appropriately build and maintain them, and also because of the stress that the fast growing population places on the existing infrastructure.

Statement of the Problem

The performance of water projects in Kenya has been a major concern, especially because of the huge benefits to be accrued by the beneficiaries and as well because of the huge investments made on these projects. Project managers always target project success. This involves finishing the project on time, within budget, meeting end product specifications, meeting customer needs and meeting management objectives (Minyiri, & Muchelule, 2018). According to the Kenya National Water Services Strategy (2018 - 2022), sustainable water access levels in Kenya were estimated to be at 60%, while sanitation was estimated at 68%. However, many water projects in Kenya experience project time overrun, budget overrun and as well do not meet product specifications, customer needs and management objectives (Ndegwa, 2019). Malala (2019) found out that, 88% of projects were behind schedule. Shiundu (2010) in his study in Kasarani Constituency reported that, 60 % of projects were behind schedule.

When projects are unsuccessful or delayed, this implies that targeted project benefits are only realized in part or never at all (Mutoro *et.al*., 2017). Delayed project completion has both high costs to society and incapacitating effects on the contracting parties (Ondari & Gekara, 2016). In particular, delayed completion of water and sanitation projects makes it difficult to achieve the required access to affordable, safe and adequate water supply services. Investments in water and sanitation projects in Kenya are colossal. For instance, the total development expenditure on water supplies (includes sewerage and waste management) and related services increased from KShs 20.5 billion in 2012/13 to KShs 65.2 billion in 2020/21 financial year (KNBS, 2022).

Project Monitoring and Evaluation is one of the key aspects of Project management. It is an extremely important management tool used to track progress and performance of a project and facilitate decision making (Sera & Beaudry, 2017). While some empirical studies have been undertaken in relation to the performance of water projects in Kenya, none has specifically looked at the influence of Project Monitoring and Evaluation practices on the performance of water projects and in particular those in Western Region. There is also none that has linked the four independent variables under this study (planning, stakeholder involvement, funding and technical capacity) with the performance of water projects. Further, none of these studies have showed the moderating effect of legal framework on the relationship between project monitoring and evaluation practices and the performance of water projects in western region, Kenya. There is therefore inadequate empirical insight to inform interventions so as to enhance the performance of such projects. To fill the highlighted gaps, the current study seeks to establish the influence of Project Monitoring and Evaluation practices on the performance of water projects in Western Region, Kenya.

General Objective

The purpose of this study is to examine the influence of Project Monitoring and Evaluation practices on the performance of water projects in western region, Kenya.

Specific Objectives

i. To assess the influence of monitoring and evaluation planning on the performance of water projects in western region, Kenya.
ii. To assess the influence of monitoring and evaluation technical capacity on the performance of water projects in western region, Kenya.

Theoretical Review

Theory of Constraints

The Theory of Constraints (TOC) developed by Goldratt (1990) is a “process aimed at identifying and removing constraints in organizational processes that are standing in the way of organizational goals”. TOC judgment outlines major segments of the organizations’ philosophy of continuous

improvement. “It is applied to identify what factors limit an organization from achieving its goals, developing a solution to the problem and getting individuals in the process to invent the requisite changes”. According to Blackstone (2010), TOC has been applied to “production planning, production control and project management practices” and it helps to identify the most critical bottlenecks in the process and systems, so that performance can be improved.

The underlying premise of the theory of constraints is that organizations can be measured and controlled by variations on three measures: throughput, operational expense, and inventory. Inventory is all the money that the system has invested in purchasing things which it intends to sell. Operational expense is all the money the system spends in order to turn inventory into throughput. Throughput is the rate at which the system generates money through sales. Before the goal itself can be reached, necessary conditions must first be met. These typically include safety, quality, legal obligations, etc. For most businesses, the goal itself is to make profit. However, for many organizations and non-profit businesses, making money is a necessary condition for pursuing the goal. Whether it is the goal or a necessary condition, understanding how to make sound financial decisions based on throughput, inventory, and operating expense is a critical requirement

Typically, all projects are administered by highlighting on the tasks delivery that structure the project and apparently sensible beliefs that if these activities are completed in expected timelines, the projects would be delivered on set timeline too. But often, project management practices become a hectic exercise, ensuing in excessive pressures to meet tasks due dates and frequent re-planning of the projects. This theory provides insights on project performance; how it is influenced by various project management practices. This study will therefore use The Theory of Constraints to assess the influence of Project Monitoring and Evaluation planning on the performance of water projects in western Region, Kenya.

Human Capital Theory

The human capital theory was developed by Schutz (1961) and extended by Becker (1964). The theory holds that the knowledge and skills possessed by the employees can be improved through training and education. In addition, the theory argues that organization employees are not an expense to the organization but are assets having the capability of adding value to the organization and also giving essential contribution to the organization hence ensuring its survival in a very competitive environment (Pope, 2016).

The components of human capital entail the intellectual capacity (the unique knowledge as well as skills possessed by the employees), the social capital (which comprises of the flexible networks of the employees which allows the company to link with others hence facilitating diverse knowledge), the organizational capital (which comprises of the knowledge which the company owns and has stored in its manuals and database). Hogarh (2016) holds that emotional capital is concerned with the ability to change the potential in the intellectual capital into real action. Wachira, Gakure and Orwa (2016) indicate that organization employees possess a significant organizational value. However, when the employees leave the organization, they take with them the organizational value they possess. Therefore, organizational value is created by the knowledge, the skills as well as the individual abilities to create value. As a result, organizations should focus on how to attract, retain, develop and maintain human capital (Ebenezer & Tamatey, 2017). For the National Government water and sanitation projects to function effectively, the human resource (project team) should possess good monitoring and evaluation skills, better training and adequate experience in their area of expertise. This study will therefore use human capital theory to establish the influence of Project Monitoring and Evaluation technical capacity on the performance of water projects in western region, Kenya.

Conceptual Framework

Conceptual framework is defined as a visual presentation of key variables, factors or concepts and their relationship among each other which have been or have to be studied in the research either graphically or in some other narrative form (Miles, Huberman, & Saldana, 2013). The model depicted below shows the relationship between the dependent and independent variables; which shows how the performance of water projects in western region is influenced by planning and technical capacity. The framework also shows how legal framework moderates the relationship between the independent variables and the dependent variable.

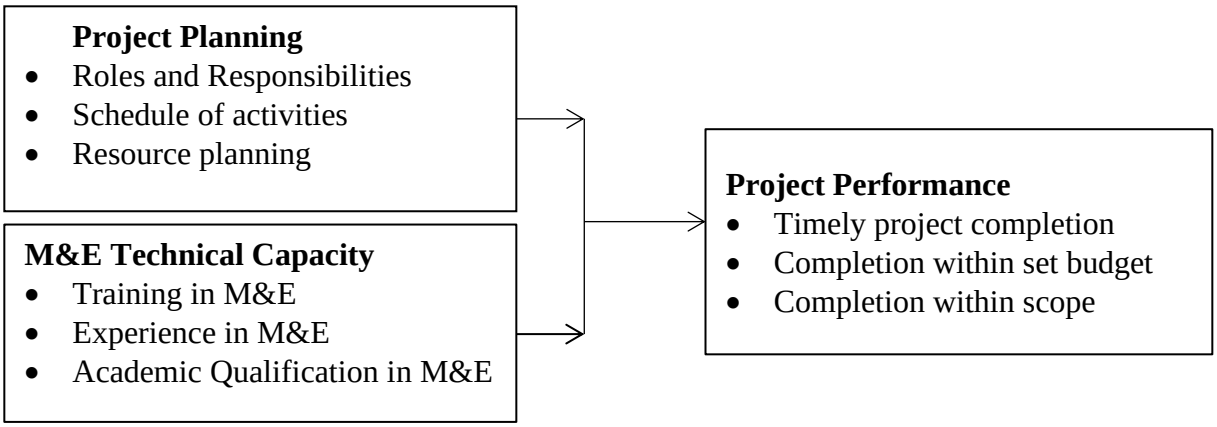

Figure 1: Conceptual Framework

Monitoring and Evaluation Planning

Monitoring and Evaluation (M&E) Planning is a systematic and structured process of establishing a framework to track and assess the progress, performance, and impact of a project, program, or policy. It involves the development of a detailed plan that outlines how data will be collected, analyzed, and used to measure the achievement of objectives and outcomes (Mutsune & Ngugi, 2018). M&E Planning aims to provide a structured approach to understanding the effectiveness of interventions, learning from experiences, and making informed decisions for continuous improvement. Components of Monitoring and Evaluation (M&E) Planning include; Roles and Responsibilities, Schedule of activities and Resource planning. In project planning, defining clear roles and responsibilities is a critical step. This involves assigning specific tasks and duties to each team member or stakeholder involved in the project. The objective is to provide clarity on who is responsible for what during the project lifecycle. This not only helps in preventing confusion but also ensures that work is carried out efficiently. Clear roles and responsibilities align team members with the project objectives, reducing the likelihood of duplicated efforts or gaps in responsibilities. It also enhances communication by establishing clear reporting lines and facilitating effective collaboration among team members (Niwagaba & Mulyungi, 2018).

A schedule of activities is a crucial component of project planning, often represented as a Gantt chart or project timeline. This schedule outlines the planned start and end dates for each task or activity in the project. The importance of a schedule lies in its ability to manage and allocate time resources efficiently. It helps in identifying dependencies between tasks, ensuring that activities are sequenced appropriately. Additionally, a well-structured schedule facilitates resource allocation based on the timing of activities. It serves as a roadmap for the project, allowing teams to track progress and adhere to timelines, ultimately contributing to the successful and timely completion of the project (Eboo, 2019). Resource planning involves identifying and allocating the necessary resources, including human, financial, and material resources, required for the successful execution of project activities. Efficient resource planning is crucial for project success as it ensures that resources are utilized optimally to meet project goals. This includes estimating and managing the project budget effectively, identifying potential resource constraints early, and allowing for

proactive resolution. Skill assessment is a key consideration in resource planning, ensuring that the team possesses the required skills and competencies. Additionally, considering the availability of equipment, technology, and facilities is essential to avoid bottlenecks in project execution (Chege & Bowa, 2020)

Monitoring and Evaluation Technical Capacity

Monitoring and Evaluation (M&E) Technical Capacity refers to the competency, expertise, and skills possessed by individuals, teams, or organizations involved in the design, implementation, and management of monitoring and evaluation activities within a project or program. This capacity encompasses a range of technical skills and knowledge needed to effectively plan, conduct, and utilize monitoring and evaluation processes (Ngaira & Malenya, 2019). Monitoring and Evaluation Technical Capacity entails; training in M&E, experience in M&E and academic Qualification in M&E. Training in M&E involves acquiring specific knowledge and skills related to the principles, methodologies, and tools used in monitoring and evaluation. This can be achieved through workshops, courses, or on-the-job training. The importance of training lies in enhancing individuals' capabilities in designing, implementing, and managing M&E processes. It ensures a common understanding of M&E concepts and practices within the team or organization and enables individuals to stay updated with evolving methodologies and technologies (Lei, *et al*, 2017).

Experience in M&E refers to practical exposure and hands-on involvement in planning, executing, and managing monitoring and evaluation activities within real-world projects or programs. Practical application of knowledge gained through experience enhances problem-solving skills, builds an understanding of different contexts, and equips professionals to anticipate and address challenges in M&E processes. Academic qualifications in M&E involve formal education and training, often leading to degrees, diplomas, or certifications in the field. Academic qualifications deepen theoretical understanding of M&E principles, frameworks, and methodologies, adding credibility to an individual's expertise, especially in complex and specialized areas of evaluation. Moreover, academic qualifications can open doors to higher-level positions and career advancement in the field of M&E (Adhan & Mutuku, 2023).

Empirical Review

Monitoring and evaluation planning and project performance

Niwagaba and Mulyungi (2018) studied the influence of monitoring and evaluation (M&E) planning on project performance in Rwanda: a case of selected non-governmental organizations in Gasabo district. The purpose of this study was to establish the influence of monitoring and evaluation planning on project performance in Rwanda a Case of selected NGOs in Gasabo District. the targeted population of the study was 72 NGOs based in Gasabo district, Kigali. From each NGO two respondents (M&E Specialist & Finance Manager) was picked purposively hence the total target population was 144 respondents. The study used both primary and secondary sources of data. Findings indicated that M&E planning has a highly significant relationship with project performance.

Chege and Bowa (2020) conducted research on monitoring and evaluation and project performance in Kenya: the case of nongovernmental organizations implementing education projects in Nairobi County. This study was carried out to assess the extent to which the use of skills and experience of the M&E team influences performance of development projects, to examine how suitability of approaches to monitoring and evaluation adopted influences performance of development projects. Data collection was done by questionnaires and key informant interviews. The researcher concluded that monitoring and evaluation has a relationship with performance of development projects.

Eboo (2019) conducted research on the influence of project monitoring and evaluation on performance of district development fund. (a case study of Wassa East District Assembly Daboase). The aim of the study was to examine the effect project monitoring and evaluation on performance of District Development Fund. With this aim, three (3) objectives were set, which were to identify effective monitoring and evaluation practices. To determine the challenges of effective monitoring and evaluation practices implementation and to assess the effect of monitoring and evaluation practices on the performance. The study adopted a quantitative research technique and a structured questionnaire and administered to 110 respondents. The data was analyzed using mean score ranking. on the effect of effective monitoring and evaluation on project performance. The findings of the study established that effective monitoring and evaluation has a positive and significant effect on project performance.

Mutsune and Ngugi (2018) studied the influence of monitoring and evaluation planning on project implementation by national lands commission in Nairobi city county, Kenya. The study investigated the influence of monitoring and evaluation planning on project implementation by National Lands Commission in Nairobi City County, Kenya. Structured questionnaires were used to gather data for the study. The study concluded that M&E planning helps in making decisions with clear objectives in mind and helps you concentrate on results that matter, while M&E allows you to learn from past successes and failures as well as lessons learned during project execution.

Monitoring and evaluation technical capacity and project performance

Lei, *et al* (2017) studied the impact of technical standards on international project performance: Chinese contractors' experience. This study explores the reason for the difficulties by using a mixed method research with survey data collected from construction companies involving 170 experienced managers who were involved in 115 international projects. It also involved interviews with an additional 76 managers. The findings confirm that Chinese contractors perceived significant difficulties implementing international projects due to the lack of knowledge of the foreign standards. It is concluded that an enhanced understanding of foreign standards, particularly in Middle Eastern countries, will improve cost and time performances in international projects. Strategies of active learning, inter-organizational cooperation and adjustment of talent training mode are suggested for the international contractors to cope with the issue of standards implementation.

Ngaira and Malenya (2019) carried out a study on the influence of technical capacity on county road construction projects performance in Busia County, Kenya. This study investigated the influence of technical capacity on road construction projects performance in Busia County, Kenya. The study adopted descriptive survey design and targeted 123 officers consisting of prequalified contractors in Busia County, local community leaders (ward administrators, youth leaders), area MCAs, employees from County Transport and Infrastructure department, Contractors technical staff, Government road engineers, KeRRA officers, KURA officers, technical staff from surveying department, Civic education leaders from civic education department and engineers from National Construction authority (NCA). The study concluded that technical capacity significantly influences performance of road construction projects, thus, any improvement in the road contractors' technical capacity would yield a significant progress in performance of road construction projects in Busia County and thus it should be closely monitored.

Adhan and Mutuku (2023) studied the influence of monitoring and evaluation staff competency on performance of community water projects in Mandera County, Kenya. This study sought to investigate the influence of monitoring and evaluation staff competency on performance of community water projects in Mandera County, Kenya. A descriptive design was adopted for data collection and analysis. Primary data collection was done using a structured questionnaire. s. The study found a significant influence between M& E staff competency and project performance. The

study concluded that one of the most common tasks of a Project M&E Officer is to develop the monitoring and evaluation skills of project personnel and partners. The study recommended that the project managers should develop M&E competency profile for the project positions by categorizing the project staff into managers, specialists and implementers.

Mushori, Rambo and Wafula (2020) investigated the moderating influence of process monitoring on the relationship between contractors' capacity evaluation in tender award and performance of road construction infrastructural projects. The study aimed to assess the moderating influence of process monitoring on the relationship between contractors' capacity evaluation in tender award and performance of road construction infrastructural project in the context of Nairobi County, Kenya. A sample size of 210 was obtained from a target population of 460 comprising of 106 contractors and 104 Public Service Vehicles (PSVs) drivers. The study concludes that process monitoring indeed moderates contractors' capacity to carry out construction work and hence road performance.

RESEARCH METHODOLOGY

This study used descriptive research design. Mugenda and Mugenda (2003) explained the descriptive design as a process of collecting data in order to test a hypothesis or to answer the questions of the current status of the subject under study. This study targeted all the water projects in western region which comprises of Kakamega, Bungoma, Vihiga, and Busia counties. Statistics from Kenya National Water Services Strategy (2022) indicate that there is a total of 218 projects in western region. In each project, the study targeted a project manager, a project supervisor and a project Surveyor. This implies that the unit of observation was 654 respondents comprising of project managers, project supervisors and project Surveyors while the unit of analysis was the 218 water projects. The study's sample size was reached at using Krejcie and Morgan sample size determination formula (Russell, 2013). Therefore, using the formula, the sample size for the study was 242 respondents. The respondents were chosen with the help of simple random sampling technique.

In this study, primary data was used. It was collected using a semi structured questionnaire because they are cost effective and convenient to collect and summarise responses (Zikmond, 2017). A pilot study was done in four water projects and shall target 24 respondents. This shall enable the researcher to test the unwavering quality and legitimacy of the poll. The standard that up to 10% of the example ought to comprise a pilot test (Creswell, 2017). Accordingly, the proposed pilot test is inside the prescribed size. Pilot contemplate is, subsequently, directed to recognize the shortcoming in plan and instrumentation and to give precise information to test choice, (Cooper & Schindler, 2017).

Data from questionnaires was coded and analyzed using the latest Statistical Package for Social Sciences (SPSS) computer software. SPSS software was used because of its ability to appropriately create graphical presentations of questions, data for reporting and presentation. The analyzed data was presented in the form of frequency distribution tables, pie charts and bar graphs where appropriate. The study employ mixed methods data analysis applying the use of descriptive and inferential statistics. Quantitative data collected was analyzed using descriptive statistics techniques. Through descriptive analyses, correlational as well as experimental studies emerge; and also, they provide clues on the issues that require more attention which leads to further research (Mugenda & Mugenda, 2018). Qualitative data was analyzed using content analysis which was performed in SPSS. Before the data is analyzed, it was first coded, cleaned, and grouped as per their variables. Pearson R correlation was used to measure strength and the direction of linear relationship between variables. Multiple regression models were fitted to the data in order to determine how the predictor/independent variables affect the response/dependent variable.

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics

Monitoring and Evaluation Project Planning and Project Performance

The first specific objective of the study was to assess the influence of monitoring and evaluation planning on the performance of water projects in western region, Kenya. The respondents were requested to indicate their level of agreement on various statements monitoring and evaluation planning on the performance of water projects in western region, Kenya. A 5-point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 1

From the results, the respondents agreed that formulating work plan puts into consideration all available alternatives and therefore facilitates timely completion of the project (M= 4.026, SD= 0.865). In addition, the respondents agreed that effective work plans are critical in ensuring that projects are completed within the set project budget (M= 4.018, SD= 0.945). The respondents further agreed that assigning roles and responsibilities play a critical role in the timely completion of projects (M= 4.008, SD= 0.617)

From the results, the respondents agreed that project schedule facilitates achievement of the project within scope (M= 4.001, SD= 0.918). Furthermore, the respondents agreed that resource planning plays a significant role in achievement of a project within budget (M= 3.996, SD= 0.976). Moreover, the respondents agreed that project planning facilitates project performance and achievement of project deliverables (M= 3.990, SD= 0.897)

Table 1: Monitoring and Evaluation Project Planning and Project Performance

Statement	Mean	Std. Deviation
Formulating work plan puts into consideration all available alternatives and therefore facilitates timely completion of the project	4.026	0.865
Effective work plans are critical in ensuring that projects are completed within the set project budget	4.018	0.945
Assigning roles and responsibilities play a critical role in the timely completion of projects	4.008	0.617
Project schedule facilitates achievement of the project within scope	4.001	0.918
Resource planning plays a significant role in achievement of a project within budget	3.996	0.976
Project planning facilitates project performance and achievement of project deliverables	3.990	0.897
Aggregate Score	**4.007**	**0.870**

Monitoring and Evaluation Technical Capacity and Project Performance

The second specific objective of the study was to assess the influence of monitoring and evaluation technical capacity on the performance of water projects in western region, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to the influence of monitoring and evaluation technical capacity on the performance of water projects in western region, Kenya. A 5-point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 2

From the results, the respondents agreed that staff training in project M&E enhances proper implementation of projects hence achieving timely completion of the projects (M= 4.039, SD= 0.895). Furthermore, the respondents agreed that adequate skilled personnel for project implementation and M&E enhance the achievement of expected deliverables (M= 4.020, SD= 0.705). In addition, the respondents agreed that staff training in project M&E enhances proper implementation of projects hence achieving completion of projects within set budget (M= 4.013, SD= 0.881).

From the results, the respondents agreed that good experience of the project teams in M&E enhances the completion of projects within the agreed upon scope, thus increasing the level of customer satisfaction (M= 4.007, SD= 0.973). In addition the respondents agreed that academic qualification of the project teams in M&E enhance the achievement of expected project deliverables (M= 3.987, SD= 0.686). Furthermore, the respondents agreed that skilled human resource in project M&E enhances project performance (M= 3.985, SD= 0.797).

Table 2: Monitoring and Evaluation Technical Capacity

Statement	Mean	Std. Deviation
Staff training in project M&E enhances proper implementation of projects hence achieving timely completion of the projects	4.039	0.895
Adequate skilled personnel for project implementation and M&E enhance the achievement of expected deliverables	4.020	0.705
Staff training in project M&E enhances proper implementation of projects hence achieving completion of projects within set budget	4.013	0.881
Good experience of the project teams in M&E enhances the completion of projects within the agreed upon scope, thus increasing the level of customer satisfaction	4.007	0.973
Academic qualification of the project teams in M&E enhance the achievement of expected project deliverables	3.987	0.686
Skilled human resource in project M&E enhances project performance	3.985	0.797
Aggregate Score	**4.009**	**0.823**

Inferential Statistics

Inferential statistics in the current study focused on correlation and regression analysis. Correlation analysis was used to determine the strength of the relationship while regression analysis was used to determine the relationship between dependent variable (performance of water projects in western region, Kenya) and independent variables (monitoring and evaluation planning and monitoring and evaluation technical capacity).

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (monitoring and evaluation planning, and monitoring and evaluation technical capacity) and the dependent variable (performance of water projects in western region, Kenya). Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients. The current study employed Taylor (2018) correlation coefficient ratings where by 0.80 to 1.00 depicts a very strong relationship, 0.60 to 0.79 depicts strong, 0.40 to 0.59 depicts moderate, 0.20 to 0.39 depicts weak.

Table 3: Correlation Coefficients

		Project Performance	Contract Cost Management	Contract Closure
Project Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	237		
Monitoring and Evaluation Planning	Pearson Correlation	.836**	1	
	Sig. (2-tailed)	.002		
	N	237	237	
Monitoring and Evaluation Technical capacity	Pearson Correlation	.856**	.185	1
	Sig. (2-tailed)	.000	.078	
	N	237	237	237

From the results, there was a very strong relationship between monitoring and evaluation planning and performance of water projects in western region, Kenya (r = 0.836, p value =0.002). The relationship was significant since the p value 0.002 was less than 0.05 (significant level). The findings are in line with the findings of Chege and Bowa (2020) who indicated that there is a very strong relationship between monitoring and evaluation planning and project performance.

The results also revealed that there was a very strong relationship between monitoring and evaluation technical capacity and performance of water projects in western region, Kenya (r = 0.856, p value =0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the results of Lei, *et al* (2017) who revealed that there is a very strong relationship between monitoring and evaluation technical capacity and project performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (monitoring and evaluation planning and monitoring and evaluation technical capacity) and the dependent variable (performance of water projects in western region, Kenya)

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.940	.884	.885	.582

a. Predictors: (monitoring and evaluation planning and monitoring and evaluation technical capacity)

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.884. This implied that 88.4% of the variation in the dependent variable (performance of water projects in western region, Kenya) could be explained by independent variables (monitoring and evaluation planning and monitoring and evaluation technical capacity).

Table 5: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.027	2	6.0135	214.0	.000[b]
	Residual	6.568	234	.0281		
	Total	18.595	236			

a. Dependent Variable: Performance of water projects in western region, Kenya
b. Predictors: (Constant), monitoring and evaluation planning and monitoring and evaluation technical capacity

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 214.0 while the F critical was 2.411. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of monitoring and evaluation planning and monitoring and evaluation technical capacity on performance of water projects in western region, Kenya.

Table 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.311	0.082		3.793	0.003
	Monitoring and Evaluation Planning	0.387	0.091	0.388	3.593	0.003
	Monitoring and Evaluation Technical Capacity	0.392	0.102	0.393	3.843	0.001

a Dependent Variable: Performance of water projects in western region, Kenya

The regression model was as follows:

$Y = 0.311 + 0.387X_1 + 0.392X_2 + \varepsilon$

According to the results, monitoring and evaluation planning has a significant effect on performance of water projects in western region, Kenya β_1=0.387, p value= 0.003). The relationship was considered significant since the p value 0.003 was less than the significant level of 0.05. The findings are in line with the findings of Niwagaba and Mulyungi (2018) who indicated that there is a very strong relationship between monitoring and evaluation planning and project performance.

In addition, the results revealed that monitoring and evaluation technical capacity and performance of water projects in western region, Kenya β1=0.392, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings are in line with those of Ngaira and Malenya (2019) who revealed that there is a very strong relationship between monitoring and evaluation technical capacity and project performance

Conclusion

The study found that monitoring and evaluation planning has a positive and significant effect on performance of water projects in western region, Kenya. The findings revealed that roles and responsibilities, schedule of activities and resource planning influence performance of water projects in western region, Kenya.

Moreover, the study found out that monitoring and evaluation technical capacity has a positive and significant effect on performance of water projects in western region, Kenya. Findings revealed that training in M&E, experience in M&E and academic qualification M& impacts positively on performance of water projects in western region, Kenya.

Recommendations

The study found that monitoring and evaluation planning has a positive and significant effect on performance of water projects in western region, Kenya. The study therefore recommends that the management of water projects in western region, Kenya ensure that there are clear roles and responsibilities, schedule of activities and resource planning to facilitate effective project planning.

The study also found that monitoring and evaluation technical capacity has a positive and significant effect on performance of water projects in western region, Kenya. The study therefore recommends that the staff working for water projects in western region, Kenya are trained in M&E possess experience in M&E and also have academic qualification in M&E

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