

**PROJECT MANAGEMENT PRACTICES AND PERFORMANCE OF
WATER PROJECTS IN NAIROBI COUNTY**


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DECLARATION


This thesis is wholly original with no previous versions submitted to another university for review. Without my permission or the University of Nairobi's, no part of this work may be replicated.

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This thesis has been submitted for examination with my approval as university supervisor.

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DEDICATION

This thesis is dedicated to my late father (Mr. Daniel Mitei) for his inspiration and ongoing emphasis on the importance of obtaining a college degree. As a thank you for their emotional support during my academic career, I also dedicate it to my mother (Mrs. Rose Mitei), my wife (Grace Siele) and my kids.

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ABSTRACT

The study investigated the relationship between project management practices and performance of water projects in Nairobi County. The study's objectives were: to establish the extent to which financial resources in project management practices influence water project implementation in Nairobi County, to determine how water policies in project management practices influence water and sanitation project implementation in Nairobi County, to determine how stakeholder participation in project management practices influences the implementation of water and sanitation projects in Nairobi County and to determine how monitoring and evaluation of project management practices influence the implementation of water and sanitation projects in Nairobi County. The study's theoretical foundation was built on the stakeholder theory, systems theory and contingency theory. The study adopted a mixed method research design and collected data from all the eight active water projects in Nairobi. The data was collected using a questionnaire and analysed using SPSS version 25. The study found out that financial resources such as monitoring material costs, involving procurement teams, adhering to project timelines, and recognizing the significance of technical staff qualifications and labor costs played an important role in the performance of water projects. The study also found that there is positive perception of the Kenyan government's project management policies among respondents, indicating their effectiveness and impact on water project management practices, while also emphasizing the importance of alignment and synergy between government and institutional policies. The study further found out that it is important to involve the right stakeholders, aligning project objectives with beneficiary needs, and actively engaging stakeholders to enhance water project implementation in Nairobi County. The study also found out that there was a commitment to robust project management practices in Nairobi County's water projects, with a focus on effective tools for risk identification, cost control, monitoring, evaluation, and dedicated risk management departments, aligning with established project management principles and emphasizing proactive risk management and efficient cost control. The study concluded that there is clear agreement on the importance of implementing robust systems for monitoring material costs and considering them during project initiation. The study also concluded that Kenyan governments policies related to project management are well established and effective. The study also concluded that stakeholder participation plays a crucial role in influencing the implementation of water and sanitation projects in Nairobi County. Lastly. The study concluded that project management practices have an influence on the performance of water projects in Nairobi. The study recommends that project managers prioritize the identification and active involvement of the right stakeholders throughout the project's lifecycle. The study also recommends the importance of effective project management practices, such as robust systems for monitoring material costs, cost control mechanisms, and adherence to project timelines. The study also recommends that policymakers and institutions should prioritize the review and updating of these policies to align with best practices in project management.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

One crucial natural resource is water. It is the essence of life on earth (Sarkar, 2019). The availability of safe Water is essential for the advancement of social, economic, and health (OHCHR, 2023). One billion people presently lack access to reliable and safe drinking water due to inadequate water sources. The absence of accessible availability of safe drinking water for drinking, bathing, and cleaning is a substantial contributor to the social issues connected to rising poverty levels (WHO, 2021). According to many criteria, a severe water shortage is a severe type of deprivation. Threatening gender correlations and essential population dependencies, it jeopardizes physical and mental health (UNESCO, 2021). Future economic hardships will have a significant impact on household livelihoods, typical family dynamics, and health issues, which are possibly the most evident of all, for example, cholera and diarrhoea. (OHCHR, 2023).

Theoretically, the stakeholder theory, systems theory, and contingency theory can be used to summarize the practice and management of water projects. This research will focus on Nairobi County, the geographic centre of which is Kenya's capital city. Thus, it is an important part of the urban centres of East Africa, which implies that there is an influx of population from the rural areas in search of better economic activities (Zarate, 2021). Nairobi is characterized by slums and permanent houses, which also differentiates the water system availability in each region. Nairobi, is a well-established city with public and private resources expected to serve the population with clean Water (Sarkar, 2019). One of the major problems is that the water supplied within Nairobi County is not equivalent to

the County population resulting into limited access to safe and reliable water supply (Sarkar, 2019). Nairobi is estimated to receive a supply of 525 (million litres) of Water from its supplies including Ndakaini Dam, Sasumua Dam and others (Koech, 2022). However, the supply is not sufficient. of an estimated 850 (million litres) in Nairobi demands every day. Nairobi hence faces a daily shortage of 325 million litres of water. It is estimated that over 1.5 million people in Nairobi have no safe water access (Koech, 2022).

1.1.1 Project Management Practices

Project management practices refer to the set of principles, methods, techniques, and tools used to plan, execute, control, and close projects effectively and efficiently. These practices are employed to ensure that projects are completed successfully, meeting their objectives, timelines, budgets, and quality standards (Wambui, & Bett, 2020). Project management practices varies based on the nature of the project, the industry, and the specific needs of the organization. By adhering to project management practices, organizations can optimize the value delivered to stakeholders while meeting project specifications and requirements. The ten major goals guiding the project management practices includes: First, define objectives by establishing the goals and outcomes of the project, ensuring they align with the overall strategic objectives of the organization. Second is to plan and organize comprehensive project plan that outlines the scope, tasks, timelines, resource requirements, and potential risks involved. Third is to execute and implement the project plan, assigning tasks to team members, coordinating activities, and managing resources effectively. Fourth is to monitor and control involving regularly tracking the project's progress, compare it against the plan, identify deviations, and take corrective actions when necessary to keep

the project on track. Fifth is to maintain effective communication channels among team members, stakeholders, and relevant parties throughout the project's lifecycle. Sixth is to identify potential risks, assess their impact on the project, and develop strategies to mitigate or handle them if they occur. Seventh is to implement processes to ensure that the project deliverables meet the required quality standards and expectations. Eighth is to engage with project stakeholders, understand their needs, and manage their expectations to gain their support and involvement in the project. Ninth is to be prepared to accommodate changes that may arise during the project while minimizing their impact on the project's objectives. Lastly, is to properly conclude the project by evaluating its success, documenting lessons learned, and transferring knowledge gained to the organization (Pace, 2019).

1.1.2 Performance of Water Projects

Evaluation of the effectiveness of water projects refers to how well a water project being carried out meets its objectives and goals to the stakeholders (Njora, & Yilmaz, 2021). The performance of water projects in a region depends on the management team and how efficiently the management team is well-planned and organized (Njora, & Yilmaz, 2021). That is: often, it is usually necessary that during a project, a monitoring and evaluation process is done during the ongoing of the project, which allows an assessment of the project (Ogata, 2022). Some of the projects that the study will focus on, include: Thika Dam project, Northern Collector Tunnel project, Kabete Treatment Plant, Sasumua Treatment Works, Ruiru Dam project, Kikuyu Spring water project, Mihang'o Underground Tank water project and Kiambui Pre-Paid Dispenser Project. If the management team fails to have such as assessment, it may be challenging to identify if the project is still on track. However, carrying out the assessment allows the team to make any necessary amendments

and take measures to ensure a better outcome for the project (Njora, & Yilmaz, 2021). The performance of water projects can be assessed in light of achievements they will accomplish and the number of people who can access Water supplied by a particular project compared to the number of people who intend to receive the Water supplied (Njora, & Yilmaz, 2021).

Managers have also used some of the performance measures to identify the progress of the projects (Mulwa, & Fangninou, 2021). Some of the metrics include Cost performance index, which is used to measure the project's performance based on the project's budget and divide the earned value by the actual cost (Padilla et al., 2020). The project is under budget if the CPI is larger than one and over budget if it is less. The second metric is the earned value which evaluates the worth of the work that has been finished on a project at a specific moment (Padilla et al., 2020). It is computed by dividing the budgeted cost by the percent completion of each task, adding the results for all tasks that have been finished. The third metric is the customer satisfaction index which evaluates client satisfaction with the project. In most cases, questionnaires and feedback forms are used to measure it (Padilla et al., 2020).

1.1.3 Nairobi County

Nairobi County, the capital city of Kenya, has an estimated population of 4,397,073 people based on the 2019 census, which ranked it as the most populated county in Kenya (KNBS, 2019). Nairobi has 11 sub-counties, 17 electoral constituencies and 85 wards. The sub-counties include Lang'ata, Makadara, Embakasi, Starehe, Kasarani Njiru, Kibra, Mathare, Kamukunji, Dagoretti, and Westlands. Additionally, it is crucial to note that the population in all the eleven sub-counties depend on Water from the three main dams (Sasumua, Thika,

and Chania-B) that have been constructed to create reservoirs, that supply Water to the city through the Nairobi City Water and Sewerage Company (NCWSC) (Koech, 2022). Some of the water projects that supply water to Nairobi residents include: Thika Dam project, Northern Collector Tunnel project, Kabete Treatment Plant, Sasumua Treatment Works, Ruiru Dam project, Kikuyu Spring water project, Mihang'o Underground Tank water project and Kiambui Pre-Paid Dispenser Project. However, despite the amount of Water supplied by Nairobi Water, there is still a water shortage in many areas within the Nairobi region (World Bank, 2020). Some of the problems that contribute to the water shortages include leaked piping systems, poor infrastructure and natural conditions like drought, water contamination and illegal connections, which makes the company unable to account for a quantity supplied to unknown persons (Koech, 2022). The problems facing the Nairobi water force the company to regulate and ration the Water to Nairobi residents in different sub-counties, ensuring a proficient amount of Water is supplied to more individuals, and they get to access clean and safe drinking water, which creates a water shortage problem in Nairobi city (Koech, 2022).

1.2 Problem Statement

Knowing the best practices has a significant impact on the success, outcome, or performance of a water project (Ahsan and Gunawan, 2021). Poor project management techniques frequently lead to mismanaged stakeholders, inadequate communication channels, failed coordination, delayed project implementation, poor project design, uncoordinated implementation, delays between project identification and start-up, and cost overruns (Dvir, Song, and Nedovic Budic, 2020; Ahsan and Gunawan, 2021). Three important pillars—cost, time, specifications/scope, and satisfaction—are used to measure

the performance of water projects (Hutton & Bartram, 2020). Kenya faces numerous project management difficulties, both technical and non-technical, as a developing nation (Kwak, 2022).

Nairobi is estimated to receive a supply of 525 million litres of Water from its supplies including Ndakaini Dam, Sasumua Dam and others (Koech, 2022). However, the supply falls short of an estimated 850 million litres Nairobi demand per day. Nairobi hence faces a daily shortage of 325 million litres of water (Koech, 2022). It is estimated that over 1.5 million people in Nairobi have no safe water access (Koech, 2022). One of the major reasons behind the failure of Nairobi to meet water demand is population influx not commensurate to water supply (Njora & Yilmaz, 2021). Additionally, the illegal connections and poor project management practices have also been attributed to water shortage in Nairobi County (World Bank, 2020). Nevertheless, various organizations like United Nations (UN) water.org are facilitating the development of more projects in relation to Nairobi water and the Athi Water Services Board (World Bank, 2020). Despite some accomplishments, the city has not yet been able to supply enough litres to serve all the residents (Mulwa and Fangninou, 2021).

Although there is a clear evidence that demonstrates the challenges on the performance of water projects attributed to poor project management practices, previous scholarly work doesn't demonstrate how inefficient project management practices results in poor performance of water projects or failed water projects. For instance, Chea (2021) studied the project management practices by Tokyo Municipal Water Inter-connectivity projects. Findings from the study demonstrates that there were clearly defined project management practices that led to successfully and efficient functionality of Tokyo Municipal Water

Inter-connectivity projects. Sanchez (2019) conducted a study on the project management practices and contributing factors to water scarcity and contaminated tap water of New York and New Jersey metropolitan areas. Findings indicated that lapse in project management practices resulted into inefficient water projects within the two municipalities.

Regionally, Tafinyerika (2019) studied the external factors affecting management of water projects in Accra City. The findings demonstrate that government interference on NGO funded water projects and corruption were the key issues that contributed to failure of water projects in Accra City. On the other hand, Mulwa and Fangninou (2021) studied the relationship between population growth and water issues in East Africa. The findings demonstrate that rapid population and failure by different East African Countries to design an all-accommodating water infrastructure is the main cause of failed water projects. In Kenya, Njora and Yilmaz (2021) studied the effectiveness of the project management processes on water projects with Lake Victoria South Water Service Project and Northern Water Collector Tunnel Project as case studies. The findings demonstrate that, corruption, lack of good will and inability to apply the best project practices led to the delay in the completion of both Lake Victoria South Water Service and Northern Water Collector Tunnel Projects. The projects also failed to deliver to their designed objectives.

All previous scholars including: Chea (2021), Sanchez (2019), Tafinyerika (2019), Mulwa and Fangninou (2021) and Njora and Yilmaz (2021) revolved around project management practices and management of water projects as independent and dependent variables. However, they do not demonstrate the concept of performance or the tools for measuring performance of water projects as part of the project management practices. Methodologically, all were inclined to only one form of data collection, either quantitative

or qualitative. This is clearly demonstrated from Chea (2021), Tafinyerika (2019) and Njora and Yilmaz (2021) who only used the qualitative methods, Sanchez (2019) who only used the quantitative methods while Mulwa and Fangninou (2021) who only restricted themselves to secondary data. Restricting to a single research approach might have limited their analysis and findings. In addition, there has not been any research that has considered to analyse the project management practices in Nairobi County, and their influence in the performance. The research carried out by the scholars did not consider to analyse the effects on performance, from the management practices, creating a gap in the area of performance. The study attempted to answer the following research question: How does the concept of performance measure performance tools?

1.3 Objectives of the Study

1.3.1 General Objective

This study was aimed at assessing the project governance practices and fulfilment of water projects in Nairobi County.

1.3.2 Specific Objectives of the Study

The objectives guiding this examination include:

- i. To establish the extent to which financial resources in project management practices influence water project implementation in Nairobi County.
- ii. To determine how water policies in project management practices influence water and sanitation project implementation in Nairobi County.

- iii. To determine how stakeholder participation in project management practices influences the implementation of water and sanitation projects in Nairobi County.
- iv. To determine how monitoring and evaluation of project management practices influence the implementation of water and sanitation projects in Nairobi County.

1.4 Value of the Study

This investigation will be helpful to professionals in the water supply and distribution industry and project managers as it will offer them insights into successful water project management. In addition to this, we anticipate that it will make a contribution to the already acquisition of understanding regarding the practices of project supervision and the performance of water projects. Thus, the information and conclusions will aid in policymaking and identifying areas for improvement in Nairobi's water projects to address the county's water shortage. Thus, stakeholders and politicians may find areas for improvement and build solutions to Nairobi County's water problems by studying existing water projects' successes and failures. Further, the examination's findings will add to the published work on project management and water project efficiency. The research will also help create theoretical frameworks and project management. Finally, it will give researchers reference material.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter focuses on literature that helps in examining materials on project management practices. This enhances the development of a comprehensive understanding of water project management practices. In addition, this chapter helps in analysing and identifying the research gaps in project management practices, providing a purpose for a research focus. The chapter will entail the following components: Theoretical framework, empirical literature review, conceptual framework and research hypothesis.

2.1 Theoretical Framework

This sector examines some of the theories developed in relation to the concept of project management practices. The theoretical framework in this project will examine the following theories and how they enhance knowledge and understanding concerning project management practices: Stakeholder theory, System theory and contingency theory.

2.1.1 Stakeholder Theory

R. Edward Freeman created the stakeholder theory in 1984 and talked about the advantages of involving stakeholders in project management techniques (Freeman et al., 2020). In most projects associated with society, the community members are considered the project's main stakeholders (Freeman et al., 2020). The theory pays credits to both the external and internal members, where the employees of the organizations are the internal members and the community are external members. Further, stakeholder theory suggests that organizations managing projects have the responsibility of ensuring that they get to consider the interests of their stakeholders in the decision-making process. According to

Barney and Harrison (2020), the stakeholder theory gives a perspective that the intersection between the stakeholders and businesses in society enhances better decision-making. Hence, more reviewed decisions are made on the projects, which increases the effectiveness of the projects in the community and helps create partnerships between community members and projects management organizations. Critics of Stakeholder theory among them is Charles M. Elson (2019). The theory is criticized for its inability to establish a border that can define the level of involvement of external stakeholders (Philips et al., 2019). Despite the fact that the Stakeholder theory gives an understanding of both internal and external stakeholders, the theory is criticized for its inability to provide such a boundary. The academics believe that the engagement of the stakeholders ought to be defined in an appropriate manner within a framework that will assist in the identification of possible stakeholders in connection to the project. The stakeholder understanding is essential to this research as it assists to understand the best practices for project management because it offers a framework for comprehending how vital it is to involve the project's various stakeholders in its planning and execution. According to Ndaguba and Hanyane (2019), the theory explains the necessity of the managers understanding the interests and expectations of the project's stakeholders to successfully engage them and achieve a profitable outcome of the project practices. The theory enhances that involvement of the stakeholders, helps in understanding the water supply demands of the community members and the social impact expectations of the community members.

2.1.2 System Theory

The system theory was created by biologist Ludwig von Bertalanffy in the 1940s. Ludwig used his idea of systems to explain and analyse the interconnections and interdependence

of the components that make up a system to transform it through its organizational and controlling phenomenon (Hofkirchner, 2019). According to the system theory, every organization consists of outputs and inputs, with external and internal systems that work together to give a functional overview of the system (Hofkirchner, 2019). The system theory emphasizes the importance of focusing on different levels of the system to ensure that each level in the system has more attention to maximize the output based on the initial input in the process (Hofkirchner, 2019). This will help the managers of the project to understand the dynamics of the project, which will help identify some of the potential risks and opportunities involved in ensuring improvement in the performance of the project. Adam Smith (2018) argues that system theory can overemphasized the structure of the organizations, including its processes and procedures involved. In various ways fails to account for the decisions made in shaping the behaviour of the system to ensure better performance of the structures in connection to the project management (Hartmann & Lussier, 2020).

The system theory is relevant to this study as it helps the project managers to analyse and assess the interaction and the relationship between the different components and parties involved in the inputs of water project management practices and how the interaction of the different components on project management practices influences the performance of the water projects (Denicol et al., 2020). Furthermore, system theory identifies the importance and need of essential governance to ensure that the management system is well-controlled to give a successful outcome and performance in the water projects in Nairobi County (Denicol et al., 2020). In light of the fact that water projects typically need substantial financial investment and that any delays in their implementation result in

significant losses, this study will assess the role of governance in these projects and the impacts on the outcome and performance of the water projects based on the governance (Denicol et al., 2020).

2.1.3 Contingency Theory

The contingency theory was developed in 1964 by Fred Fiedler, proposing there is no one approach for handling projects in particular, but rather the best way to manage projects depends on the contingencies of the project being implemented. Furthermore, the theory suggests that the most effective management practices rely on specific scenario or context (Butler et al., 2020). The concept of contingency theory indicates that an organization's efficiency depends on how well its structure complies with the requirements of the external environment. Joan Woodward was the first to explore this idea prior to 1958. The effectiveness of project management methods is said to be dependent on a variety of elements, including the characteristics of the project, the skills and talents of the project team, and the organizational context in which the project is being carried out, in accordance with the contingency theory (Butler et al., 2020). According to this idea, a variety of management procedures could be more successful in various contexts (Butler et al., 2020). As a result, project managers need to be able to modify their management strategy per the particular demands and specifications of each project (Bueno & Salapa, 2021).

The contingency theory in relation to this study, provides a dynamic of tactics that enhances the managers to deal with and manage each situation in the process and strategy of the project governance practices to ensure the best approach (Bueno & Salapa, 2021). Furthermore, the knowledge of contingency theory is relevant to Project managers since they can create efficient management techniques that are suited to each project's particular

requirements by recognizing the specific circumstances that impact project success (Bueno & Salapa, 2021). This could improve project performance, raise stakeholder satisfaction, and assist the project in reaching its objectives. However, Magaji Abba and Naziru (2018) have criticized the contingency theory for failing to achieve some goals, including practical application and the ability to make better decisions over time. This paradigm of other managerial theories emphasizes management skill development, making it hard to use in practice (Bueno & Salapa, 2021). The theory allows managers to adopt successful management techniques in many circumstances by combining elements from prior management theories (Bueno & Salapa, 2021). Thus, the notion can challenge managers who may not know how to handle a problem.

2.2 Empirical Literature Review

The empirical review aims to provide an overview of the existing empirical evidence that are related to this study. The empirical review will focus on relevant studies, that will evaluate their quality and relevance which will imply summarizing the key findings and trends across multiple studies on a similar topic based on the objectives of this study.

2.2.1 Project Management Practices and Influence on Performance

Project management practices play a crucial role in shaping the performance of projects across various domains. This empirical review aims to explore the influence of project management practices on project performance, with a specific focus on the components of financial resources, water policies, stakeholder participation, and monitoring and evaluation (Kerzner, 2022). Financial resources are vital for project success as they determine the availability of funds for project implementation, procurement of necessary resources, and management of project costs. Water policies provide the regulatory

framework within which water projects operate, influencing decision-making processes, compliance requirements, and sustainability considerations. Stakeholder participation is crucial for garnering support, managing conflicts, and ensuring the alignment of project objectives with stakeholders' interests and expectations. Lastly, monitoring and evaluation processes enable project managers to assess progress, identify potential issues, and make informed decisions for timely adjustments (Barbalho, 2022). By examining these components, this empirical review aims to shed light on the interplay between project management practices and project performance, ultimately contributing to the advancement of effective project management in the context of water projects.

2.2.1.1 Financial Resources in Project Management Practices and Influence on Performance

The finances and assets that finance an organization's operations and investments are referred to as financial resources in project management procedures. Financial resources, put simply, are the funds that enable a company to continue running. The link between financial resources and project management techniques has been the subject of numerous research. For instance, Karlsson (2019) explored how project success is impacted by financial preparation. The study's descriptive survey design concentrated on all of Stockholm, Sweden's water projects. The study found that education, culture, and financial situation are background factors that affect project management methodologies and approaches. Many middle-level managers, however, lack any formal power. This is because managers must make decisions about particular activities, which is problematic because it was not considered in this study.

Gashuga (2016) looked at how managing project funds affected the success of water projects in Rwanda. Designs that were descriptive and correlative were used. 91 workers from various water projects in Kigali attended. Questionnaires served as the study's data collection tools. The study found that there was a favourable correlation between project performance, fundraising, money allocation, and funds control. The study underscored the need for improved financial planning, resource allocation, and sustainable financing mechanisms to enhance water project implementation in African countries.

Muute and James (2019) did a study on project planning practices and performance of water construction projects in Nairobi City. Within Nairobi City County, the targeted population consisted of 125 water construction enterprises. Targeted responders included the project managers and personnel for the water building projects, totalling 125. Census was used in the study since the population was manageable. The study used a semi-structured questionnaire to collect its primary data. Descriptive research design and explanatory research design were adopted in this study. The study revealed that inadequate funding was a significant barrier to successful project implementation. Insufficient budget allocations, delays in disbursement, and limited access to financial resources negatively affected project performance.

2.2.1.2 Water Policies in project management practices and Influence on Performance

Development of any water policy involves changing existing policies or practices in favor of new goals and objectives. This has also been reflected in the project management practices as reflected by different scholars. Muflikh et al., (2021) conducted a comprehensive literature review to explore the impact of water policies on project

implementation. The review analysed various case studies and research articles to assess the relationship between water policies and project outcomes. The findings highlighted the importance of supportive policy frameworks in promoting successful water and sanitation projects. Clear guidelines, regulatory mechanisms, and policy integration were identified as key factors influencing project implementation. The review emphasized the need for effective policy formulation, enforcement, and coordination to enhance water project implementation globally.

According to Dangui and Jia (2022), there is a direct correlation between water infrastructure and development results. A panel regression-based exploratory empirical analysis was used as the study's research design. According to the report, SSA area water infrastructure performance and water security might be greatly improved by focusing policies on sustainable economic development. The study's concluded that policies should be developed to maximise the economic benefits of the significant water investment.

A study by Peter M. and Lucy N. (2020) investigated how project management techniques affected the success of public projects in the Kenyan region of Mombasa. According to the research, the public sector should appoint competent project managers to ensure proper project planning and administration. Effective management techniques are crucial to ensuring the success of initiatives. Poor strategy and incorrect costing or planning estimates might easily turn anticipated gains into losses. The study identified gaps in policy implementation and enforcement, leading to challenges in project planning and execution. Inconsistencies in policy interpretation and limited coordination among relevant agencies were found to hinder effective project management. The study recommended the need for

better policy coordination, stakeholder engagement, and stronger regulatory frameworks at the local level to improve water project implementation in Mombasa County.

2.2.1.3 Stakeholder participation in project management practices and Influence on Performance

Stakeholder engagement involves building and maintaining relationship (Dmytriyev et al., 2021). It also involves preserving the active support and commitment of the people to the implementation of change, through programme or project delivery. A meta-analysis study by Sandbank et al. (2020) synthesized findings from multiple global studies on stakeholder participation in water projects. The meta-analysis incorporated qualitative and quantitative data from diverse regions to assess the impact of stakeholder involvement on project success. The findings demonstrated that meaningful stakeholder engagement positively influenced project planning, implementation, and sustainability. Inclusive decision-making, community engagement, and participatory approaches were identified as key factors for achieving successful water project outcomes globally.

Atiibo (2012) looked at the difficulties in stakeholder management and how they affected project management in the context of advocacy and empowerment in Ghana's upper east. The study's approach was survey-style, integrating the use of primary data gathered from the field with secondary data sources. 35 people were chosen as the sample size for the investigation. This group had 20 project and program managers, 10 project workers on the front lines, and 5 key resource people, including a CEO, a head of programs, and two project coordinators. The Krejcie and Morgan Sample Table (1970) was used to calculate the sample size. The analysis found that the major stakeholders' interests and roles were crucial to the success of the project. However, it was shown that stakeholder management

is primarily characterized by sporadic and transient actions. Unfair competition, conflicts of interest, a lack of dedication, poor management skills, a lack of awareness of and appreciation for leadership issues, and insufficient managerial competence were shown to have a significant negative impact on the operation of the companies.

Adan (2022) conducted a local study specifically examining stakeholder influence of constituencies development fund projects in Isiolo North. The researchers employed across due to the time constraint and the factors of the study using a case study approach, sectional survey. It entailed employing questionnaires to get data from a greater variety of instances. A sample size of 140 respondents from the projects was employed for the investigation. The study used a census approach to select every respondent. The findings indicated that inadequate stakeholder engagement and limited community participation were associated with project delays, conflicts, and suboptimal outcomes. The study recommended strategies for enhancing stakeholder collaboration, participation, and community involvement to improve water project implementation in Nairobi County.

2.2.1.4 Monitoring and Evaluation of project management practices and Influence on Performance

Monitoring and Evaluation (M&E) is a continuous management function that identifies implementation bottlenecks, tracks implementation progress, and assesses whether an investment plan, program, or project has any unexpected consequences (good or bad). The monitoring and evaluation of project management procedures has been related in numerous research. Muhammad (2018) looked at the impact of mega engineers' abilities on Pakistani project performance. In this study, a descriptive research design was used. 100 project engineers were sampled for the study. Questionnaires were used to gather the data. The

results demonstrated a positive correlation between project performance and the project managers' competence. These abilities comprised communication, managerial, and ethical abilities. The findings indicated that the performance of building projects was influenced by the project team leaders' dynamic, interactive leadership, quality management, and report writing abilities. Project performance was significantly correlated with the technical expertise of the project team leader.

Martinez and Olander (2015) agree that participation can have a variety of meanings and that taking part in a project has several advantages. Participation is a democratic method of working that enhances decision-making and restores the legitimacy of the entire procedure. Through interviews and document analysis, the researchers explored the effectiveness of monitoring and evaluation systems. The study revealed gaps in monitoring and evaluation processes, leading to limited accountability and learning. The research emphasized the need for incorporating evaluation mechanisms throughout the project lifecycle to enhance project performance and ensure sustainability.

Roba and Odollo (2022) In their study, the effectiveness of water projects in Marsabit County was evaluated in relation to monitoring and evaluation practices. The research design used in the study was descriptive. From 14 water projects in Marsabit County, the project manager, project committee chairman, and M&E officer were the targets. 14 project managers, 14 M&E officers, and 127 members of the Project Committee were sampled using the census. Questionnaires were used to gather data. With the aid of (SPSS) version 28, data were analyzed using descriptive and inferential statistics. According to the findings, ineffective monitoring and assessment procedures led to a lack of project oversight, delays, and difficulties in reaching the intended project outcomes. In order to

ensure that M&E operations are carried out properly in companies, the study recommended that management play a proactive role in the design of M&E systems and give timely support and guidance.

2.3 Conceptual Framework

This research embraces the fact that there is a favourable relation between a successful performance of a project and the practices of project management. In this case, the practices of project management are the independent variables, which include the influence of financial resources, policy influences, stakeholders' participation and monitoring and evaluation. On the other hand, the performance of the water projects in Nairobi County is the dependent variable, which is the determinant of the satisfaction of the project to the residents of Nairobi.

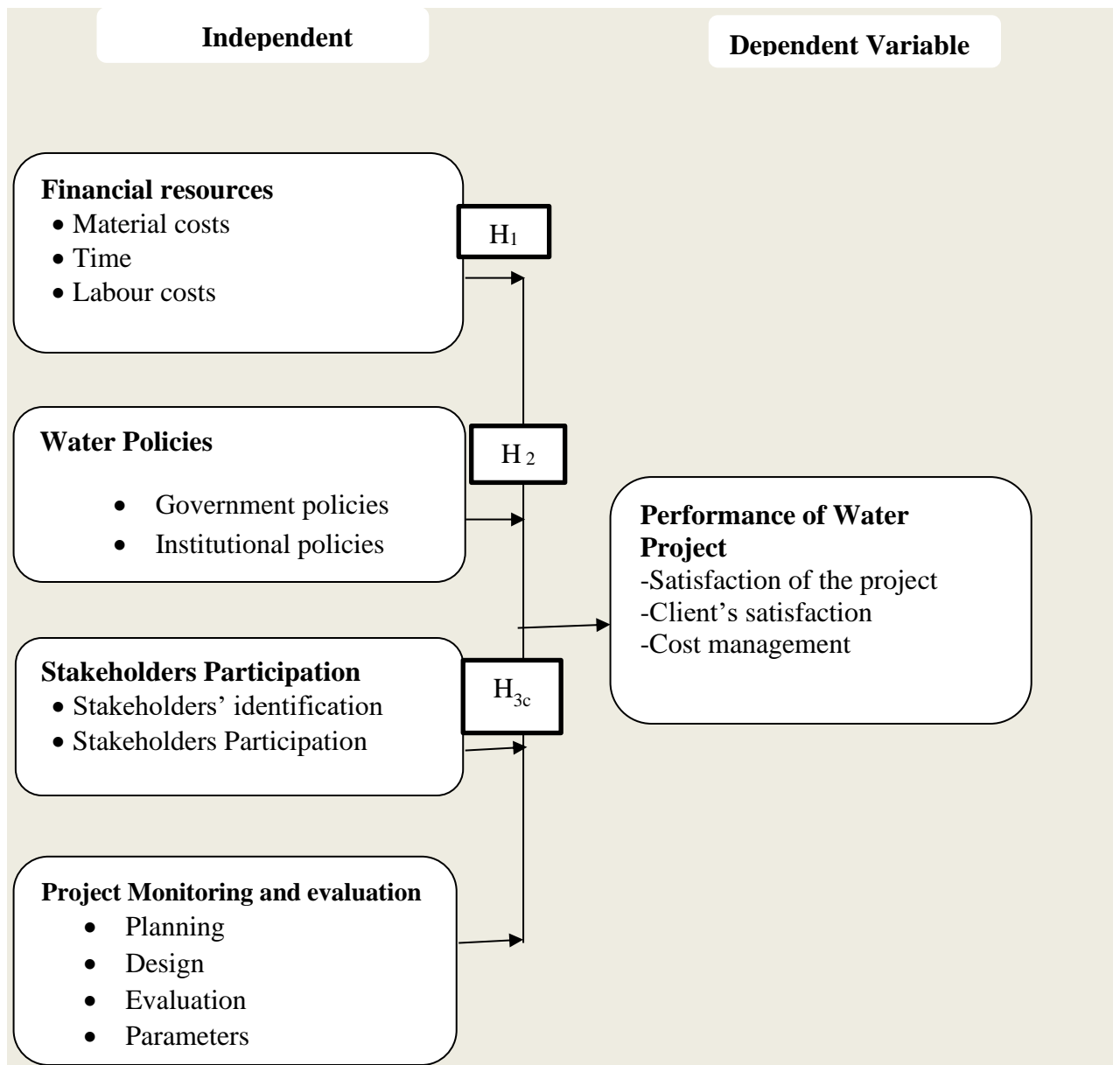


Figure 2.1: Conceptual Framework

Source: Author, 2023

2.4 Research Hypotheses

The study aimed to test some null hypotheses:

1. H₁: There is no significant relationship between financial resources on project management practices and the implementation of water projects in Nairobi County.
2. H₂: There is no significant relationship between water policies on project management practices and the implementation of water projects in Nairobi County.
3. H₃: There is no significant relationship between stakeholder participation in project management practices and the implementation of water projects in Nairobi County.
4. H₄: There is no significant relationship between monitoring and evaluation of project management practices and the implementation of water projects in Nairobi County.

CHAPTER THREE: METHODOLOGY OF THE RESEARCH

3.0 Introduction

Strategies used to operationalize research and accomplish research goals are outlined in this and subsequent chapters. In the following paragraphs, we will go over everything from the study design to the target population, sample size, and the technique of sampling. Along with data collecting procedures, instrument examination of the data, as well as validity and dependability methodologies, ethical considerations, and operational definitions of variables are all covered in this chapter.

3.2 Research Design

A mixed method strategy combining quantitative and qualitative research methodologies were used in the study. The combination of specialized, comprehensive insights from qualitative research (which in this case will be the in-depth interviews) and the generalizable, easily replicable data from quantitative research is what led to the selection of these two study approaches (such as surveys). According to Asenahabi (2019), quantitative approaches are appropriate because the researcher will determine the facts in their current state and gather data from a variety of sources, including project management techniques related to water project performance in Nairobi County. Qualitative methods clarify quantitative data, according to Creswell (2019). Explaining each case in detail makes the research findings highly accessible. Since it is desirable in this study that predictor variables have both causative effects and moderated combined influences on the dependent variable, then both the quantitative and qualitative approach have been found to be more suitable.

3.3 Population and sampling

This study did census where focused on all the eight active water projects in Nairobi County. The unit of analysis was the project managers and site engineers assigned on to the specific projects. Project managers participated in interviews(qualitative) while Engineers did the questionnaires (Quantitative). The qualitative interviews were conducted using an open-ended In-depth interview guide while the questionnaire were structured with closed ended questions. Table 3.1 below indicates the target population for the study

Table 3.1: Target Population

Water projects in Nairobi County	Project managers	Site engineers
Thika Dam project	1	5
Northern Collector Tunnel project	1	10
Kabete Treatment Plant	1	4
Sasumua Treatment Works	1	3
Ruiru Dam project	1	4
Kikuyu Spring water project	1	4
Mihang'o Underground Tank water project	1	3
Kiambui Pre-Paid Dispenser Project	1	4
Total	8	37

Source: <https://www.nairobiwater.co.ke-water> projects and dams

3.4 Data collection

With the use of an in-depth interview guide, primary data was gathered via in-person interviews and the questionnaire. The questionnaire was used for the quantitative data while the In-depth interview guide were used for qualitative data collection. The questionnaires were administered to site engineers while the In-depth interview guide was

used on project managers for the eight active water projects within Nairobi County. Only willing project managers and site engineers were interviewed. The questionnaire had five sections. Section 1 discussed respondents' demographics. Section two covered the financial resources, section three covered water policies, section four covered stakeholders' participation, and section five covered project monitoring and evaluation. Audio recorders were used in the in-depth interviews. This aided qualitative data analysis. The researcher obtained a NACOSTI authorization and an introduction letter of recommendation on University of Nairobi letterhead to collect field data. Three research assistants helped the researcher during data collection. Research assistants were trained on research equipment, ethics, and goals.

3.5 Pilot study

The instrument was tested in two unrelated water projects in the neighbouring Kiambu County, which shares many characteristics with the research area, in order to determine its level of dependability. Before distributing the instructions and questions to the selected sample, piloting helped to test both of them. Respondents with similar traits to those in the sample were used. Selection of the pilot respondents was done through simple random sampling. The pilot test provided an initial notion of the pattern of replies that are probable, as well as an estimate of the time it would have taken to complete the survey. Pilot testing was conducted on 4 respondents across all the categories. This represented 10% of the actual sample size which according to Creswell (2019) is considered ideal for the validity processes. The time needed to complete the surveys was also estimated with the aid of the pilot exercise. After examining the questions and clarifying them for the respondents, this provided the researcher the confidence to use the research tools.

3.5.1 Validity of the Research Instruments

The ability of a data collection tool to measure what it is intended to measure is known as validity. Validity refers to whether results from the test can be used to make inferences that are relevant and helpful (Asenahabi, 2019). The purpose of the pilot study is to evaluate the questionnaire's face and content validity. Validity, according to Asenahabi (2019), provides a gauge for the measurement items' correctness. A panel of specialists reviewed the study research instruments to determine if they accurately captured all the variables they were meant to measure and to include their professional judgment to ensure face validity.

Both concept and content validity was used in this investigation. The questionnaire was divided into sections that addressed particular objectives and provided the same close linkages with the sub constructs provided in the conceptual framework for the study in order to achieve construct validity. The instrument was given to a conveniently chosen focus group of five specialists in the project management and water projects that the variables come under in order to determine its content validity. Reviewing the questionnaire with the supervisor also served as the initial validation test. His opinion was assessed and taken into account to improve the questionnaire's content validity. According to the suggestion made by Meyers, Gamst, and Guarino (2019), face, content, concept, and concurrent validity should all be considered when doing research.

3.5.2 Reliability of Research Instruments

According to Bhardwaj (2019), reliability can be defined as a measurement of how reliably a research tool generates the same outcomes or data even after it has been used multiple

times. A model with a dependability composite co-efficient of Cronbach alpha of 0.6 or higher for each of the constructs was considered as adequate for the purposes of this study. 0.6 and above is the acceptable dependability coefficient (Stratton, 2021). The dependability of the research tool was evaluated using the Cronbach Alpha coefficient. Bhardwaj (2019) notes that When study tools with Similarity type scales that have various answers are used for gathering information, the Cronbach Coefficient measures the reliability of the information collected, is utilized to examine the interior consistencies of samples taken from the selected group. The dependability of the instrument was determined by calculating its Cronbach's Alpha Coefficient, which is a measure of the instrument's internal consistency. The results of reliability are as shown in Table 3.1

Table 3.2 Reliability Results

Variables	Cronbach's Alpha	N
Cost management practices and implementation of water projects	0.83	77

A Cronbach's Alpha coefficient of 0.83 suggests that the set of 77 items demonstrates a relatively high level of internal consistency. It indicates that the items in the questionnaire are positively correlated with each other, meaning they are measuring the same underlying construct or concept.

3.6 Data Analysis

The Statistical Package for Social Science (SPSS, Version 26.0) program was used to clean, code, and perform descriptive analysis on the statistical information collected from the many questionnaires that were sent. to site managers. Because SPSS is quick, adaptable, and offers more accurate descriptive data that is suitable for the analysis, it was employed.

Qualitative data, audios from the in-depth interviews with the project managers was transcribed and analysed through content analysis. Quantitative findings were displayed descriptively using frequency distribution tables and figures while qualitative findings were displayed in narrative formats.

3.7 Diagnostic Test for Regression Analysis

Linearity Test

It's essential to check the linearity assumption, which assumes that the relationship between the dependent variable (Performance of Water Projects) and each independent variables (financial resources, water policies, stakeholders' participation and project monitoring and evaluation) is linear. In this case the linearity test has been achieved through the ANOVA regression model.

Homoscedasticity Test

This test checks whether the variance of the residuals is constant across all levels of the independent variables. Plotting the residuals against the predicted values can help identify patterns. The presence of a funnel-shaped pattern suggests heteroscedasticity, which can be problematic. In this case the study used the Breusch-Pagan test to formally check for homoscedasticity.

Multicollinearity

Multicollinearity occurs when independent variables are highly correlated with each other, making it challenging to isolate their individual effects. To diagnose multicollinearity, this study calculated the Variance Inflation Factor (VIF) for each independent variable. High

VIF values (usually above 5 or 10) indicate multicollinearity. The following models were adopted for each independent variable in relation to dependent variables.

Model 1: Financial resources and Performance of Water Projects

The relationship between financial resources and performance of water projects in Nairobi County was tested using regression analysis(Baron 1986) indicated below:

$$PWP = \beta_0 + \beta_1FR + \beta_2FRPWP + \varepsilon \dots\dots\dots (1)$$

Where:

PWP=performance of water projects

FR = Financial resources

FRPWP = Composite of financial resources and performance of water projects

β_0 = Constant

$\beta_1 \dots \beta_2$ = Beta coefficients

ε = Error term

Model 2: Water policies and Performance of Water Projects

The effectiveness of water policies implemented by Nairobi County in ensuring better performance of water projects was tested using a regression analysis(Baron, 1986) model as follows:

$$PWP = \beta_0 + \beta_1WP + \beta_2PWP + \beta_3WPPWP + \varepsilon \dots\dots\dots (2)$$

Where:

WP = water policies

PWP=performance of water projects

WPPWP = Composite of water policy and performance of water projects

Model 3: Stakeholders Participation and the performance of water projects in Nairobi County.

The effect of stakeholders’ participation on the performance of water projects in Nairobi County implemented by Nairobi County was tested using a regression analysis model(Baron 1986) as follows:

$$PWP = \beta_0 + \beta_1SP + \beta_2PWP + \beta_3SPPWP + \varepsilon \dots\dots\dots (3)$$

Where:

SP = Stakeholders participation

PWP=performance of water projects

SPPWP = Composite of Stakeholders Participation and performance of water project

Model 4: project monitoring and evaluation of water projects in Nairobi County.

The effect of project monitoring and evaluation on the performance of water projects in Nairobi County implemented by Nairobi County was tested using a regression analysis model (Baron 1986) as follows:

$$PWP = \beta_0 + \beta_1PME + \beta_2PWP + \beta_3PMEPWP + \varepsilon \dots\dots\dots (4)$$

Where:

PME = Project monitoring and evaluation

PWP=performance of water projects

PMEPWP = Composite of project monitoring and evaluation and performance of water projects

3.8 Ethical Considerations

The researcher made sure that research ethics have been followed while carrying out the study. It was optional to take part in the study. Additionally, confidentiality and privacy were respected. The aims of the study was explained to the participants, and they were reassured that the data they provide will be kept strictly confidential and utilized for scholarly research only.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses the results of the questionnaire that the researcher collected from all the eight active water projects in Nairobi County. The research objectives were; to establish the extent to which financial resources in project management practices influence water project implementation in Nairobi County, to determine how water policies in project management practices influence water and sanitation project implementation in Nairobi County, to determine how stakeholder participation in project management practices influences the implementation of water and sanitation projects in Nairobi County and to determine how monitoring and evaluation of project management practices influence the implementation of water and sanitation projects in Nairobi County. The questionnaire used to collect data comprised of both open and closed ended questions. After data collection, the returned questionnaires were cleaned and coded for data analysis.

4.2 Demographic Information

4.2.1 Response rate

The researcher prepared 98 questionnaires and administered them to the site engineers and site supervisors. The researcher collected the questionnaires after one week. 79 questionnaires had been filled properly and handed to the researcher out of 98 questionnaires. The questionnaires were cleaned, coded and analyzed using SPSS version 25. The study received a 79% feedback as displayed in Table 4.1, which is suitable to draw meaningful conclusion. According to Mugenda and Mugenda (2013) a response rate of

50% and above is sufficient for data analysis. The respondents were interested a lot on the research as no one had done a research on the project, hence they participated fully.

Table 4.1: Response rate

	Frequency	Percentage	Cumulative percentage
Returned	77	79	79
Unreturned	21	12	100
Total	98	100	

4.2.2: Gender

The findings of the study indicated that 68% of the respondents were male while 32% were female. The findings are showed in table 4.2.

Table 4.2: Gender

Gender	Frequency	Percentage	Cumulative percentage
Male	52	68	68
Female	25	32	100
Total	77	100	

4.2.3 Age group distribution

The study aimed to identify the age distribution of the respondents. Table 4.3 shows the age distribution of the respondents. Majority of the respondents who were 24 were aged between 36 to 40 years, the second highest age of respondents was between 31 to 35 years old which represented 19 response rates. The third highest response rate was between 41 to 45 years old which represented 16 respondents. The age group of 26 to 30 there was only one respondent and above 51 years old there were only four respondents.

Table 4.3: Age group distribution

	Frequency	Percentage	Cumulative percentage
26-30 years	1	1.3	1.3
31-35 years	19	24.7	26
36-40 Years	24	31.2	57.2
41-45 Years	16	20.8	78
46-50 Years	13	16.9	94.9
51-55 Years	4	5.2	100
Total	77		

4.2.4 Level of education

The findings showed that majority of the respondents had a postgraduate degree as their highest level of education, who represented 46.8% of the respondents while those with degree represented 32.5% of the participants. Respondent with a diploma represented 14.3% of the respondents while those with a certificate or high school certificate represented 1% of the respondents respectively. The findings are displayed in Table 4.4.

Table 4.4: Level of Education

	Frequency	Percentage	Cumulative percentage
Postgraduate degree	36	46.8	46.8
Bachelor's degree	25	32.5	79.3
Certificate	1	1.3	80.6
Diploma	11	14.3	94.9
High School	1	1.3	96.2
Others	4	3.8	100
Total	77	100	

4.2.5 Water Project Assigned

The provided data on Table 4.5 offers insights into the distribution of respondents among different water projects. The data revealed that the Northern collector tunnel project had the highest number of assigned respondents, representing 18.2% of the total respondents, followed closely by the Thika dam project with 16.9%. On the other hand, projects like the Mihang'o underground tank water project and the Kiambui pre-paid dispenser project had lower percentages of respondents to the questionnaire.

Table 4.5: Project Assigned

	Frequency	Percentage	Cumulative percentage
Kabete Treatment Plant	10	13	13
Kiambui Pre-Paid Dispenser Project	8	10.4	23.4
Kikuyu Spring water project	8	10.4	33.8
Mihang'o Underground Tank water project	6	7.8	41.6
Northern Collector Tunnel project	14	18.2	59.8
Ruiru Dam project	8	10.4	70.2
Sasumua Treatment Works	10	13	83.2
Thika Dam project	13	16.9	100
Total	77	100	

4.2.6 Work Duration

The study found out that the respondents had worked for the water projects in Nairobi for different durations as indicated in the table 4.6. 31 respondents had worked at the water projects between 2 to 5 years, 30 respondents had worked for the water projects between 5 to 10 years, 10 respondents had worked for less than 2 years while 6 respondents had worked for the water projects more than 10 years.

Table 4.6: Work duration

	Frequency	Percentage	Cumulative percentage
2-5 years	31	40.3	40.3
5-10 years	30	39	79.3
Less than 2 years	10	13	92.3
More than 10 years	6	7.7	100
Total	77	100	

4.3 Financial resources

The study sought to establish the extent to which financial resources in project management practices influence water project implementation in Nairobi County.

Table 4.7 presents the findings.

Table 4.7: Financial resources

	N	Mean	Std. Deviation
Water projects should have elaborate systems that monitor the material costs	77	4.12	.467
Cost of materials is essential when during the initialization of Water projects	77	4.17	.523
Most water projects including ours has an elaborate procurement team that advises on the cost of materials involved in the project management.	77	3.92	.774
Water projects are supposed to be implemented within the agreed timelines	77	3.75	1.002
Our site has adhered to the set project timelines	77	4.08	.943
Water projects that do not adhere to the timelines are considered as failed projects	77	3.29	1.003
Our technical staff are well trained and possess necessary qualifications	77	4.00	.669
The cost of labour is a key component of project management practices affecting water projects in Nairobi	77	3.96	.895
Skilled labour force is less expensive on water projects compared to unskilled labour	77	4.14	1.211
Training costs should be factored into water project components	77	4.03	.688
Overall		3.95	.818

The results of Table 4.7 indicate that respondents strongly agreed that water projects should incorporate elaborate systems to monitor material costs (mean = 4.12) and consider material costs during project initialization (mean = 4.17). There is a slightly lower but generally positive consensus that most water projects, including theirs, have procurement teams advising on material costs (mean = 3.92). Respondents also emphasize the importance of adhering to project timelines (mean = 3.75), although opinions vary (standard deviation = 1.002), and their sites have relatively lower adherence (mean = 3.08). A moderate level of agreement exists regarding the classification of projects not meeting timelines as failures (mean = 3.29, standard deviation = 1.003). Technical staff qualifications are well-regarded (mean = 4.00, standard deviation = 0.669), as is the significance of labor costs (mean = 3.96). However, opinions diverge regarding skilled labor costs (mean = 3.14, standard deviation = 1.211). Finally, respondents generally concur that training costs should be factored into project components (mean = 4.03). Overall, respondents exhibit a moderate consensus across these aspects of water project management, with an average rating of 3.95 (standard deviation = 0.818). The study findings are in line with a study on financial management practices and performance of water supply projects in developing countries by Adeyeye and Olomola (2022). The study found that financial management practices have a significant impact on the performance of water supply projects in developing countries. The study also found that projects with adequate financial resources are more likely to be successful.

4.4 Water Policies

The study sought to determine how water policies in project management practices influence water and sanitation project implementation in Nairobi County. Table 4.8 presents the findings.

Table 4.8: Water policies

	N	Mean	Std. Deviation
The Kenyan government has established policies on the best practices for project management in relation to the implementation of water projects.	77	3.62	.904
Government policies on the implementation of water projects have led to better water project management practices.	77	3.42	.951
We are guided by government policies that guides our daily operations at our water site.	77	3.48	.868
The institution I work for has elaborate water policies	77	3.58	.879
This water project is guided by water policies from our institution.	77	3.68	.865
Institutional policies compliment the government policies.	77	3.35	.900
Overall		3.52	.894

The study findings indicate that respondents, numbering 77 in the study, generally hold a positive view of the Kenyan government's policies on project management, with an average rating of 3.62, indicating a consensus that these policies are well-established and effective. Moreover, they believe that government policies have led to improved water project management practices, scoring an average of 3.42. This suggests a perception that the government's influence is beneficial for project success. Respondents also report being guided by government policies in their daily operations at water sites (mean = 3.48), indicating a practical impact of these policies. On whether the institutional I work for has an elaborate water policy, respondents rate their institutions positively in terms of having

elaborate water policies (mean = 3.58) and as being guided by these policies (mean = 3.68). This suggests that institutional policies are seen as influential in shaping water project management practices. However, respondents perceive that there is room for improvement in terms of the complementarity of government and institutional policies, with a mean rating of 3.35.

The overall mean of 3.52 across these six statements reflects a moderate agreement that water policies in project management practices influence water and sanitation project implementation in Nairobi County. While there is some variability in opinions, particularly regarding policy complementarity, the relatively low standard deviations suggest a moderate level of agreement among respondents. A study by Adeyeye and Olomola (2022) on the role of water policy in the implementation of water and sanitation projects in developing countries found that water policies can have a significant impact on the success of water and sanitation projects in developing countries. The study found that water policies that are clear, comprehensive, and supportive of community participation are more likely to lead to successful project implementation.

4.5 Stakeholders Participation

The study sought to determine how stakeholder participation in project management practices influences the implementation of water and sanitation projects in Nairobi County. Table 4.9 presents the findings.

Table 4.9: Stakeholder’s participation

	N	Mean	Std. Deviation
Identification of the right stakeholders leads to effective implementation of water projects	77	3.97	.725
Water projects should be keen on the needs of beneficiary stakeholders	77	4.01	.672
Stakeholders should be actively involved in the implementation of the water projects by shoring their views related to project management practices.	77	4.13	.656
All our site staff and project teams are treated as project stakeholders	77	3.48	.868
Overall		3.98	.730

The first statement highlights the importance of identifying the right stakeholders for water projects, with an average rating of 3.97. This indicates that respondents generally agree that involving the correct stakeholders is essential for project success. The second statement reinforces the idea that water projects should prioritize the needs of beneficiary stakeholders. With an average rating of 4.01, respondents strongly agree that aligning project goals with stakeholder needs is essential. The third statement underlines the significance of active stakeholder participation in the project. Respondents strongly agree, with a mean score of 4.13, that stakeholders should have an active role in the implementation of water projects and should be able to contribute their views regarding project management practices. The fourth statement suggests that respondents perceive site staff and project teams as stakeholders, although the mean score of 3.48 indicates some variability in this perception.

The overall mean score of 3.98 indicates a general consensus that effective stakeholder identification and engagement are paramount for the successful implementation of water projects. This aligns well with established project management principles, where

stakeholder management is recognized as a cornerstone of project success. A study by world bank (2021) on the role of stakeholder engagement in the successful implementation of water projects in developing countries found that stakeholder engagement is essential for ensuring that water projects meet the needs of communities and are sustainable in the long term. Another study by Otienno and Muya (2020) on a review of the key factors influencing the success of water projects in Africa (2020) found that stakeholder engagement is one of the most important factors for the success of water projects in Africa.

4.6 Project Monitoring and Evaluation

The study sought to determine how monitoring and evaluation of project management practices influence the implementation of water and sanitation projects in Nairobi

County. Table 4.10 presents the findings

Table 4.10: Project monitoring and evaluation

	N	Mean	Std. Deviation
We have elaborate tools and processes for risk identification on our water project.	77	3.68	.751
We have elaborate cost control mechanisms that enables efficient and timely delivery of our projects.	77	3.75	.814
We have a monitoring and evaluation department on this project.	77	3.77	.826
Our monitoring and evaluation department has elaborate structures that provides feedback on the outcome of each component of this project	77	3.81	.828
We have an established risk management department in our firm.	77	3.86	.756
Our project designs are well evaluated by the monitoring and evaluation experts	77	3.70	.779
We have highlighted different parameters for this project implementation.	77	3.78	.821
Overall		3.76	.697

The study found that respondents highlighted the presence of elaborate tools and processes for risk identification, emphasizing the recognition of the importance of managing and mitigating potential project risks (Mean = 3.68). This aligns with established project management principles that emphasize the need for proactive risk identification and management to ensure project success. Furthermore, the existence of elaborate cost control mechanisms that enable efficient and timely project delivery is noted (Mean = 3.75). This indicates a focus on managing project costs effectively, a fundamental component of project management. The presence of cost control mechanisms is vital to ensure projects stay on budget and are delivered in a timely manner.

The study also revealed the presence of a monitoring and evaluation department on the projects (Mean = 3.77). Such departments play a critical role in assessing project progress and outcomes, aligning with the broader project management principle of continuous monitoring and evaluation to ensure project success. Moreover, respondents perceive that the monitoring and evaluation department has elaborate structures for providing feedback on the outcome of each project component (Mean = 3.81). This highlights a commitment to learning from project experiences and making necessary adjustments to enhance future project components, further underscoring the focus on project quality and performance.

The findings also point to the existence of an established risk management department within the firms involved in the projects (Mean = 3.86). This reflects a recognition of the importance of a dedicated department to handle risk-related issues, reinforcing the commitment to proactive risk management, which is a key principle in project management. In addition, the respondents believe that their project designs are well

evaluated by monitoring and evaluation experts (Mean = 3.70), indicating a commitment to ensuring that project designs meet quality and performance standards. This aligns with the principle of rigorously assessing project designs to guarantee that they align with project objectives and stakeholder needs.

Lastly, the study revealed that different parameters for project implementation have been highlighted (Mean = 3.78). This signifies a structured approach to managing project components and processes. Such an approach ensures that all project activities are well-defined and aligned with project objectives, contributing to project success. A study by World Bank (2018) on the impact of project management practices on the sustainability of water and sanitation projects in developing countries found that water and sanitation projects with a structured approach to project management were more likely to be sustainable in the long term. A study also by Otieno and Muya (2020) a review of the critical factors influencing the success of water projects found that sound project management practices, including a structured approach to managing project components and processes, are essential for the success of water projects.

4.7 Regression Analysis

The study aimed to assess the effect of between project management practices and the performance of water projects. The findings are presented Table 4.10 model summary, Table 4.11 NOVA and Table 4.12 Regression coefficients.

4.7.1 Model Summary

A model summary was done to establish the strength of the relationship between project management practices and the performance of water projects. The findings are presented in Table 4.10.

Table 4.10 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.872 ^a	0.761	0.724	0.9741

As shown in Table 4.10, R is 0.872, which indicates a relatively strong positive linear relationship between project management practices and the performance of water projects. R-squared value of 0.761, indicating that 76.1% of the variance in the performance of water projects can be explained by project management practices included in the model. 23.9% variation is explained by other factors not part of this study. This implies a relatively strong relationship between project management practices and the performance of water projects. The findings of the study are supported by Gakenia *et al.* (2018) who found a strong relationship between project management practices and the performance of water projects.

4.7.2 ANOVA

The Analysis of Variance was carried out in this study to determine the goodness of fit of the model used to predict the relationship between project management practices and the performance of water projects. The findings are presented in Table 4.11.

Table 4.11 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.968	3	.194	20.395	.000 ^b
	Residual	.304	84	0.009		
	Total	1.271	87			

As shown in Table 4.11, A higher F-value suggests a stronger overall relationship between project management practices and the performance of water projects. In this case, the F-value is 20.395, indicating the goodness of fit of the model was used to predict the relationship between project management practices and the performance of water projects. The Sig. column represents the significance level or p-value associated with the F-statistic. In this case, the p-value is 0.000 indicating that the regression model's effect is statistically significant at a conventional significance level (e.g., $\alpha = 0.05$). The results of the model imply that the regression model has a significant overall effect in predicting the relationship between project management practices and the performance of water projects, as evidenced by the significant F-statistic.

4.7.3 Regression Coefficients

A regression analysis was carried out to establish a quantitative relationship between project management practices and the performance of water project outcomes helping the researcher identify which variables between project management practices and the performance of water projects have a significant impact, and to what extent they influenced performance. The findings are presented in Table 4.12.

Table 4.12 Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.10	.490		0.21	.983
Financial resources	.417	.103	.311	3.083	.004
Water policies	.323	.084	.161	2.703	.038
Stakeholders Participation	.427	.087	.227	2.855	.023
Project Monitoring and evaluation	.429	.092	.257	2.452	.003

As shown in Table 4.12, a unit increase in financial resources is associated with an estimated increase of 0.417 in firm performance. The standardized coefficient (Beta) of 0.311 suggests that financial resources have a positive effect on the performance of water projects. The standardized coefficient (Beta) of 0.161 suggests that water policies have a moderately positive effect on the performance of water projects compared to financial resources. The standardized coefficient (Beta) of 0.227 suggests that stakeholder's participation has a positive effect on the performance of water projects. The standardized coefficient (Beta) of 0.257 suggests that project monitoring and evaluation have a moderately positive effect on the performance of water projects.

T-values greater than 1.96 (5% significance level) indicate statistical significance. In this model, financial resources, water policies, stakeholder participation and project monitoring and evaluation are statistically significant predictors, as their t-values (3.083, 2.703, 2.855, and 2.452 respectively) exceed 1.96. In this model, financial resources and project

monitoring and evaluation have p-values of 0.004 and 0.003 respectively, below the conventional threshold of 0.05, indicating statistical significance. However, water policies and stakeholder participation have p-values (0.38 and 0.23, respectively) above 0.05, suggesting they are not statistically significant predictors in this model. The findings of the study are supported by Gakenia et al. (2018) who found a strong relationship between project management practices and the performance of water projects.

4.8 Discussion of Findings

The study found that respondents strongly agreed on the importance of incorporating comprehensive systems to monitor material costs (mean = 4.12) and considering material costs during project initialization (mean = 4.17). There was a slightly lower but generally positive consensus that procurement teams play a crucial role in advising on material costs for water projects (mean = 3.92). Respondents also emphasized the significance of adhering to project timelines (mean = 3.75), although opinions varied, as indicated by a standard deviation of 1.002. Additionally, the study revealed that their sites had relatively lower adherence to project timelines (mean = 3.08). There was a moderate level of agreement regarding the classification of projects that do not meet timelines as failures (mean = 3.29, standard deviation = 1.003). The study's findings align with a research study conducted by Adeyeye and Olomola in 2022, which investigated financial management practices and the performance of water supply projects in developing countries

The study found that respondents generally hold a positive view of the Kenyan government's project management policies, perceiving them as well-established and effective, with an average rating of 3.62. They also believe that these policies have contributed to the improvement of water project management practices, with a mean score

of 3.42, suggesting a beneficial influence on project success. Additionally, respondents report practical adherence to government policies in their daily operations at water sites (mean = 3.48). Institutional policies are also seen favorably, with respondents perceiving their institutions as having well-established water policies (mean = 3.58) and as being guided by these policies (mean = 3.68). However, there is room for improvement in terms of the complementarity of government and institutional policies, as indicated by a mean rating of 3.35. The overall mean of 3.52 reflects a moderate agreement that water policies play a significant role in water and sanitation project implementation in Nairobi County, with a moderate level of consensus among respondents. These findings align with a study by Adeyeye and Olomola (2022), which highlighted the significant impact of clear and community-supportive water policies on the success of water and sanitation projects in developing countries.

The study found that effective stakeholder identification and engagement are paramount for the successful implementation of water projects. Respondents strongly agreed that involving the right stakeholders is essential (mean = 3.97) and that aligning project goals with beneficiary stakeholders' needs is crucial (mean = 4.01). Moreover, they emphasized the active participation of stakeholders in project implementation (mean = 4.13), underlining the importance of their contributions to project management practices. While there was some variability in the perception of site staff and project teams as stakeholders (mean = 3.48), the overall mean score of 3.98 indicated a general consensus. These findings align with established project management principles that recognize stakeholder management as a cornerstone of project success. They are further supported by studies, including one by the World Bank (2021), emphasizing stakeholder engagement's essential

role in ensuring that water projects meet community needs and achieve long-term sustainability, and another by Otiunno and Muya (2020), underscoring stakeholder engagement as a key factor for the success of water projects in Africa.

The study found that respondents emphasized the presence of robust tools and processes for risk identification, highlighting the importance of proactively managing and mitigating potential project risks (Mean = 3.68). This finding aligns with established project management principles that stress the need for proactive risk identification and management to ensure overall project success. Additionally, the study revealed the existence of effective cost control mechanisms that facilitate efficient and timely project delivery (Mean = 3.75). This underscores a dedication to managing project costs effectively, a fundamental aspect of project management crucial for staying within budget and ensuring timely project completion. Moreover, the study indicated the presence of monitoring and evaluation departments within the projects (Mean = 3.77), aligning with the broader project management principle of continuous monitoring and evaluation to ensure project success by assessing progress and outcomes. Respondents also perceived these departments as having structured feedback mechanisms for each project component (Mean = 3.81), emphasizing a commitment to learning from project experiences and enhancing future project components, thus focusing on project quality and performance. The findings further indicated the existence of dedicated risk management departments within the participating firms (Mean = 3.86), emphasizing the importance of having specialized units to address risk-related issues and reinforcing the commitment to proactive risk management a fundamental principle in project management. Additionally, respondents believed that their project designs were thoroughly evaluated by monitoring

and evaluation experts (Mean = 3.70), reflecting a commitment to ensuring that project designs meet rigorous quality and performance standards, aligning with the principle of aligning project designs with objectives and stakeholder needs.

Lastly, the study revealed that various parameters for project implementation were clearly defined (Mean = 3.78), signifying a structured approach to managing project components and processes. This structured approach ensures that all project activities are well-defined and aligned with project objectives, ultimately contributing to project success. These findings align with research conducted by the World Bank in 2018, which highlighted that water and sanitation projects with structured project management practices were more likely to achieve long-term sustainability. Additionally, another study by Otieno and Muya (2020) emphasized that sound project management practices, including a structured approach to managing project components, were essential for the success of water projects.

A regression analysis was carried out to establish a quantitative relationship between project management practices and the performance of water project outcomes helping the researcher identify which variables between project management practices and the performance of water projects have a significant impact, and to what extent they influenced performance. The study found a unit increase in financial resources is associated with an estimated increase of 0.417 in firm performance. The standardized coefficient (Beta) of 0.417 suggests that financial resources have a positive effect on the performance of water projects. The standardized coefficient (Beta) of 0.323 suggests that water policies have a moderately positive effect on the performance of water projects compared to financial resources. The standardized coefficient (Beta) of 0.427 suggests that

stakeholder's participation has a positive effect on the performance of water projects. The standardized coefficient (Beta) of 0.429 suggests that project monitoring and evaluation have a moderately positive effect on the performance of water projects.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The objective of the study was to assess the project governance practices and fulfilment of water projects in Nairobi County. The data was collected through the use of a questionnaire and the data was analyzed by SPSS version 25. This chapter summarizes the findings as discussed in chapter four. The section also discusses the conclusion, recommendations of the study and suggested areas for further research. The findings of the study have been summarized alongside the objectives of the study.

5.2 Summary of the findings

The first objective of the study aimed to establish the extent to which financial resources in project management practices influence water project implementation in Nairobi County. The study found there was a strong consensus among respondents in several key areas of water project management. There is general agreement that water projects should incorporate comprehensive systems for monitoring material costs and consider these costs during project initialization. Additionally, there is a generally positive consensus that most water projects, including those of the respondents, benefit from the input of procurement teams in advising on material costs. Respondents also place importance on adhering to project timelines, although there is some variability in their opinions, with a notable difference in their sites' adherence to project timelines. The classification of projects that do not meet their timelines as failures also garners moderate agreement, with some variance in respondents' views. Technical staff qualifications are generally well-regarded, as is the

significance of labour costs in water project management. However, when it comes to the costs of skilled labour, opinions among the respondents differed more significantly.

The second objective aimed to determine how water policies in project management practices influence water and sanitation project implementation in Nairobi County. The study found that there was a positive perception of the Kenyan government's policies related to project management. The respondents viewed the policies as well-established and effective, indicating a consensus that the government's approach to project management is sound. Moreover, respondents believed that these government policies have contributed to improved water project management practices, reflecting a perception that the government's influence positively affects project success. Respondents reported that they are guided by government policies in their daily operations at water sites, suggesting a practical impact of these policies on their work. Additionally, respondents rate their own institutions positively in terms of having elaborate water policies and being guided by them, indicating that institutional policies are influential in shaping water project management practices within their organizations. However, respondents also believe there is room for improvement in terms of how government and institutional policies complement each other, suggesting that there may be opportunities for greater synergy and alignment between these two levels of policy.

The third objective aimed at determining how stakeholder participation in project management practices influenced the implementation of water and sanitation projects in Nairobi County. The study underscored the significance of effective stakeholder identification and engagement in the successful implementation of water projects. Respondents strongly emphasized the importance of involving the right stakeholders and

aligning project objectives with the needs of beneficiary stakeholders. Furthermore, they highlighted the crucial role of stakeholders' active participation in project implementation, underscoring their contributions to project management practices. While some variability existed in the perception of site staff and project teams as stakeholders, the overall consensus among respondents was evident. These findings align with well-established project management principles that prioritize stakeholder management as a fundamental element contributing to project success.

The fourth objective aimed to determine how monitoring and evaluation of project management practices influence the implementation of water and sanitation projects in Nairobi County. The study found there was a commitment to robust project management practices in water projects, with respondents highlighting the presence of effective tools for risk identification, cost control mechanisms, monitoring and evaluation departments, risk management departments, and rigorous project design evaluation. Their perception of these practices aligns with established project management principles and principles, emphasizing the proactive management of potential project risks, efficient cost control, continuous project monitoring and evaluation, and the importance of dedicated risk management units.

5.3 Conclusion

The study concludes that there is clear agreement on the importance of implementing robust systems for monitoring material costs and considering them during project initiation. The study also concludes that adherence to project timelines is recognized as vital. The classification of projects failing to meet timelines as failures garners moderate agreement,

albeit with some variability in perspectives. The study also concludes that technical staff qualifications and the significance of labor costs are well-regarded.

The study concludes that Kenyan governments policies related to project management are well established and effective. The study also concludes that the employees of the water projects are guided by government policies in their daily operations. The study also concluded that institutional policies were influential in shaping water project management practices within their organizations.

The study concludes that stakeholder participation plays a crucial role in influencing the implementation of water and sanitation projects in Nairobi County. It highlights the significance of effective stakeholder identification and engagement in ensuring the successful execution of these projects. Respondents strongly emphasized the importance of involving the right stakeholders and aligning project objectives with the needs of beneficiary stakeholders. Furthermore, they underscored the vital role of stakeholders' active participation in project implementation, emphasizing their valuable contributions to project management practices. While there was some variability in the perception of site staff and project teams as stakeholders, the overall consensus among respondents was evident. These findings align with well-established project management principles that prioritize stakeholder management as a fundamental element contributing to project success.

The study concludes that there is a strong commitment to robust project management practices within water projects, as indicated by respondents' recognition of the presence of effective tools for risk identification, cost control mechanisms, monitoring and evaluation

departments, risk management departments, and rigorous project design evaluation. Their perception aligns with established project management principles, emphasizing the proactive management of potential project risks, efficient cost control, continuous project monitoring and evaluation, and the importance of dedicated risk management units. This commitment to these fundamental project management practices bodes well for the success and effectiveness of water projects, reflecting a proactive approach that aligns with best practices in the field.

5.4 Recommendations

The study recommends that project managers prioritize the identification and active involvement of the right stakeholders throughout the project's lifecycle. This includes aligning project goals with the specific needs and expectations of beneficiary stakeholders. By actively engaging stakeholders and incorporating their feedback into decision-making processes, project managers can better ensure that projects are designed and executed to meet the community's demands effectively.

The study also recommends the importance of effective project management practices, such as robust systems for monitoring material costs, cost control mechanisms, and adherence to project timelines. To implement this, project managers should invest in tools and processes that allow for proactive risk identification and management. Furthermore, project managers should establish mechanisms for efficient cost control, which is crucial for maintaining projects within budget and ensuring timely delivery. Consistent monitoring and evaluation should be integrated into project management processes to assess progress, identify areas for improvement, and enhance overall project quality. This recommendation

emphasizes the need to adopt well-established project management principles to foster successful water project implementation.

The study also recommends that policymakers and institutions should prioritize the review and updating of these policies to align with best practices in project management. Ensuring that these policies support project success is essential for creating a favorable regulatory environment. Moreover, the study's findings indicate a need for closer collaboration between government policies and institutional policies to improve the complementarity of these frameworks. By working together, policymakers and institutions can create a more cohesive policy landscape that better supports water project implementation.

5.5 Limitations of the Study

The study's limitation is reliance on self-reported data which introduces the potential for recall bias and subjective interpretations by participants, impacting the accuracy and reliability of the findings. Participants' responses may not accurately reflect their actual behaviors or experiences due to memory limitations, selective memory, or personal biases. Additionally, self-reported data is subjective, influenced by individuals' perceptions and social desirability bias

Time constraints may have also impacted the study. The research may not have had sufficient time to collect and analyse data comprehensively. A more extended research period or a longitudinal study design could provide a more in-depth understanding of the project governance practices and fulfilment of water projects. Another limitation is the study may not have accounted for external factors that could influence the findings.

Lastly, the study focused only on water projects operating in a specific geographical location, which may limit the generalizability of the findings to other regions or countries with different economic and cultural contexts. Additionally, the study focused on only a limited number of factors related to the project governance practices and fulfilment of water projects, and there may be other important variables that were not included in the study.

5.6 Suggestions for Further Research

The study suggests that future research could focus on a comparative analysis of water projects in different regions or countries to identify commonalities and differences in the factors that contribute to project success. This study could explore whether the importance of stakeholder engagement, effective project management practices, and policy frameworks varies in different contexts. Comparative research can provide valuable insights into the adaptability of project management principles across diverse settings and the role of contextual factors in project success.

Secondly, a longitudinal study tracking the sustainability of water projects over an extended period could shed light on the long-term impacts of effective project management practices. Researchers could assess the continued success of projects in terms of water quality, availability, and community satisfaction. This type of research can help evaluate whether projects that prioritize stakeholder engagement, robust project management, and policy support are more likely to achieve sustained benefits and maintain the quality of water services over time.

A qualitative study could delve deeper into the implementation of government and institutional policies in the context of water projects. Researchers could conduct interviews and focus groups with project managers, policymakers, and stakeholders to gain a nuanced understanding of the challenges and facilitators in policy implementation. This research could explore how the interplay between policy development and actual implementation influences project outcomes and whether there are barriers to achieving complementarity between different policy frameworks.

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APPENDICES

Appendix I: Letter of Transmittal

23rd May 2023

Patrick Siele

University of Nairobi,

Department of Management Science and Project Planning,

Faculty of Business and Management Sciences,

Tel: 0727049214

To my Respondent,

Dear Sir/Madam,

RE: REQUEST FOR YOUR PARTICIPATION

In my research on the **Project Management Practices and Performance of Water Projects in Nairobi County**, I am a postgraduate student at the University of Nairobi.

The results of this study will be useful to water projects professionals, such as

project managers, contractors and engineers as it will offer them insights to best performance practices. It will also help the County Government of Nairobi as it initiates the different water projects. The information won't be shared with anybody outside of the academic community, and the confidentiality it requires will be maintained at all times. It is strongly recommended and strongly persuaded that you Please respond to any questions or assertions that are contained within this questionnaire in the most truthful and objective manner that you are capable of. Your contribution to the fruition of this research endeavor is highly recognized and appreciated, and it will go a long way toward ensuring its success. Please indicate by checking the appropriate boxes or entering the necessary information where the correct answers are located.

Thank you for taking the time to participate.

Yours faithfully,

Patrick Siele

Appendix 2: Questionnaire (site engineers/foremen)

Introduction

The purpose of this questionnaire is to obtain data on the project management procedures and the performance of the water projects within Nairobi County. The information acquired will only be utilized for academic purposes, however it is anticipated that the findings of this inquiry would significantly improve the effectiveness of water projects in Nairobi County. The information will be handled with professionalism and strict adherence to confidentiality guidelines. Please be sure you complete the information in each section in accordance with the instructions provided.

Section A: Demographic Information

1) Indicate your gender {Please tick one (√)}

Male	
Female	

2) Indicate your age group {Please tick one (√)}

21-25 Years	
-------------	--

26-30 Years	
31-35 years	
36-40 Years	
41-45 Years	
46-50 Years	
51-55 Years	
Over 55 years	

3) Indicate your Highest Level of Education {Please tick one (√)}

High School	
Certificate	
Diploma	
Bachelor's degree	
Post Graduate Degree	
Other(Specify)	

4) which water project are you currently assigned to? {Please tick one (√)}

Thika Dam project	
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Northern Collector Tunnel project	
Kabete Treatment Plant	
Sasumua Treatment Works	
Ruiru Dam project	
Kikuyu Spring water project	
Mihang'o Underground Tank water project	
Kiambui Pre-Paid Dispenser Project	

5) How long have you worked on the assigned water projects?

Less than 2 years	
2-5 years	
5-10 years	
More than 10 years	

Section B: Financial resources

This section contains items on the extent to which **financial resources** influence project management practices and the implementation of water projects in Nairobi County.

6) Kindly show the extent to which you agree or disagree with the following statements

regarding **financial resources**, using a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4=agree and 5= strongly agree.

Parameters	Strongly	Agree (4)	Neutral(3)	Disagree(2)	Strongly
a) Water projects should have elaborate systems that monitor the material costs					
b) Cost of materials is essential when during the initialization of Water projects					
c) Most water projects including ours has an elaborate procurement team that advises on the cost of materials involved in the project management.					
d) Water projects are supposed to be implemented within the agreed timelines					
e) Our site has adhered to the set project timelines					
f) Water projects that do not adhere to the timelines are considered as failed projects					
g) Our technical staff are well trained and possess necessary qualifications					
h) The cost of labour is a key component of project management practices affecting water projects in Nairobi					
i) Skilled labour force is less expensive on water					

projects compared to unskilled labour					
j) Training costs should be factored into water project components					

Section C: Water Policies

This section discusses the extent to which water regulations influence project management methods and the implementation of water projects in Nairobi County. The topics covered in this area are included below.

7) Would you kindly indicate, on a scale from 1 to 5, the degree to which you agree or disagree with the following statements regarding water policies? 1 indicates that you strongly disagree, 2 indicates that you disagree, 3 indicates that you are neutral, 4 indicates that you agree, and 5 indicates that you firmly agree.

Parameters	Strongly	Agree (4)	Neutral(3)	Disagree(2)	Strongly
a) The Kenyan government has established policies on the best practices for project management in relation to the implementation of water projects.					
b) Government policies on the implementation of water projects have led to better water project management practices.					
c) We are guided by government policies that guides our daily operations at our water site.					
d) The institution I work for has elaborate water					

policies					
e) This water project is guided by water policies from our institution.					
f) Institutional policies compliment the government policies.					

Section D: Stakeholders Participation

This section contains items on the extent to which **Stakeholders participation** influence project management practices and the implementation of water projects in Nairobi County.

- 8) Kindly show the extent to which you agree or disagree with the following statements regarding **Stakeholders participation**, using a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4=agree and 5= strongly agree.

Parameters	Strongly	Agree (4)	Neutral(3)	Disagree(2)	Strongly
a) Identification of the right stakeholders leads to effective implementation of water projects .					
b) Water projects should be keen on the needs of beneficiary stakeholders					
c) Stakeholders should be actively involved in the implementation of the water projects by shoring					

their views related to project management practices.					
d) All our site staff and project teams are treated as project stakeholders					

Section E: Project Monitoring and evaluation.

This section covers items that discuss the degree to which monitoring and evaluation have an impact on the project management techniques and the implementation of water projects in Nairobi County.

9) Could you kindly indicate, on a scale from 1 to 5, the degree to which you agree or disagree with the following statements concerning monitoring and evaluation? 1 represents strong disagreement, 2 represents disagreement, 3 represents neutrality, 4 represents agreement, and 5 represents strong agreement.

Parameters	Strongly	Agree (4)	Neutral(3)	Disagree(2)	Strongly
a) We have elaborate tools and processes for risk identification on our water project.					
b) We have elaborate cost control mechanisms that enables efficient and timely delivery of our projects.					
c) We have a monitoring and evaluation department on					

this project.					
d) Our monitoring and evaluation department has elaborate structures that provides feedback on the outcome of each component of this project					
e) We have an established risk management department in our firm.					
f) Our project designs are well evaluated by the monitoring and evaluation experts					
g) We have highlighted different parameters for this project implementation.					

Thanks so much for your time. We have come to the end of our Interview. As promised earlier, your feedback will be treated with utmost confidentiality and will only be used for academic purpose.

Appendix 3: In-depth guide (Project managers’)

Introduction

In order to gather information on the **Project Management Practices and Performance of Water Projects Within Nairobi County**, the goal of this questionnaire is to collect information. It is predicted that the findings from this study would make a substantial contribution toward improving the efficiency of water projects in Nairobi County, and the information that was gathered will only be used for academic purposes. The information that has been gathered will be treated professionally and with strict adherence to confidentiality standards.

Section A: Information Regarding Demographics

- 1) What is your highest level of education?
- 2) What is your current position in the organization?
- 3) How long have you been working on this project?

Section B: Specific Information

- 1) 1) Would you say that the water projects in Nairobi County have been successful in meeting your expectations? Please explain.
- 2) What are the indicators of performance in water projects within Nairobi County?
- 3) How would you rate the extent of public satisfaction in the performance of water projects within Nairobi County?.....**Briefly give a reason for your response above**

- 4) 4) How satisfied are you with the work that the water project contractors have done in Nairobi County? How involved were you in the quality of performance on this water project, and how would you rank the amount of your involvement? **Please include a brief explanation for your answer.**
- 5) 5) Does the implementation of a professional code of ethics and conduct in the various project management procedures in Nairobi County contribute to the successful completion of water-related projects? **Please include a brief explanation for your answer.**
- 6) Do you believe that the management and implementation of water projects in Nairobi County have been subject to unethical or unethical professional practices?
- 7) If the answer to this question is yes, what are the reasons why **water projects** in Nairobi County are more likely to be affected by **professional misconduct**?
- 8) How would you prevent **unprofessionalism in the implementation and management** of water projects in Nairobi County?
- 9) 9) Do you believe that the relationship that develops between project practitioners and the environment has an effect on the water projects in Nairobi County? Please include **a brief explanation for your answer.**
- 10) How would you rate your organization's performance in enforcing water policies from the government?

11) Based on your experience, to what extent do you believe that the following phases of project management in a project have an impact on the quality of water projects in Nairobi County?

Stakeholders' participation

Financial resources

Water policies

Monitoring and evaluation

Thanks for your time

Appendix 4: Work Plan

Item	Months(2023)								
	2023 Jan	2023 February	2023 March	2023 April	2023 May	2023 June	2023 July	2023 August	2023 Sep
Concept paper									
Proposal writing & Defense									
Corrections after Defense									
Data collection									
Analysis									
Report writing									