INFLUENCE OF INSTITUTIONAL FACTORS ON THE PERFORMANCE OF NAIROBI CITY WATER AND SEWERAGE COMPANY PROJECTS, KENYA

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DECLARATION AND APPROVAL

The project is entirely my work and has not been used in any other educational institution.

Signed:  **Date:** 14/04/2025

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MSCPM/2022/45366

I hereby approve this proposal for examination under my supervision.

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DEDICATION

I dedicate this project to my wonderful wife, Judith, and our beloved children, Gianna and Randolph. Your moral support and love inspire me every day. Thank you for being my constant motivation.

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ABSTRACT

The impact of institutional elements on the project performance of Nairobi City Water and Sewerage Company will be examined in this study. The management of financial resources, stakeholder engagement, project communication, and M&E are the independent factors that were examined. Three theories—the logical framework approach, stakeholder theory, and the balanced scorecard model—served as the foundation for this research project. This study employed a mixed research approach. This study targeted non-revenue water department at the Nairobi City Water and Sewerage Company (NCWSC). According to the organization (2024), there were 161 employees in the department. All 161 respondents were selected using census sampling. The study utilized both structured and unstructured questionnaires. 10 individuals from the Kiambu Water and Sewerage Company participated in the pilot phase. By implementing a comprehensive literature study, consulting experts, and aligning the questionnaire with the conceptual framework and research objectives, content validity was established. To make sure they produced consistent results, piloted outcomes were assessed. Quantitative representations were created from qualitative data. The SPSS version 28 program was used to analyze the quantitative data. The study concluded that respondents generally perceived NCWSC projects positively, especially regarding water service coverage, but highlighted concerns about project timelines and budget adherence. Challenges in financial resource management were significant, particularly related to budget compliance and report reliability. Positive influences on project performance were noted for project communication, particularly in frequent updates and feedback. Stakeholder participation was viewed favorably, especially in project design and policy formulation, while mixed perceptions emerged regarding the effectiveness of monitoring and evaluation, particularly in addressing theft and beneficiary complaints. The study recommends that the Nairobi City Water and Sewerage Company Management enhance project efficiency by implementing regular staff training on effective communication and collaboration. It also suggests improving financial resource management through greater transparency in budgeting and engaging private sector partners. Furthermore, the National Water Harvesting and Storage Authority should develop comprehensive monitoring and evaluation frameworks with clear key performance indicators to effectively address issues like theft, vandalism, and beneficiary complaints.

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ABBREVIATIONS AND ACRONYMS

KNBS	Kenya National Bureau of Statistics
LFA	Logical Framework Approach
M&E	Monitoring and Evaluation
NCWSC	Nairobi City Water and Sewerage Company
NIUPLAN	Nairobi Integrated Urban Development Masterplan
SPSS	Statistical Package for Social Scientists
SSA	Sub-Saharan Africa
UN	United Nations

CHAPTER ONE: INTRODUCTION

1.0 Background of the Study

Institutional factors play a critical role in shaping the performance of water and sewerage projects, particularly in urban centers like Nairobi. The Nairobi City Water and Sewerage Company (NCWSC) is mandated with ensuring access to clean water and efficient sanitation services, yet its project performance has been influenced by governance structures, financial management, regulatory compliance, and human resource capacity (Okech & Ogola, 2023). Weak institutional frameworks, bureaucratic inefficiencies, and governance bottlenecks have resulted in project delays, cost overruns, and suboptimal service delivery (Karanja & Wambua, 2024). Additionally, regulatory enforcement by the Water Services Regulatory Board (WASREB) has sought to improve performance, yet challenges in institutional coordination and policy implementation persist.

Water performance is often assessed through key indicators such as service coverage, supply reliability, water quality, and customer satisfaction, all of which are directly linked to institutional efficiency. Poor financial management within NCWSC has led to revenue leakages, impacting the company's ability to fund infrastructure projects and maintain existing systems (Kimwaki & Eysimkele, 2023). Moreover, governance weaknesses, such as corruption and lack of accountability, have further affected service delivery, making it difficult to achieve sustainable water access (WASREB, 2023). Institutional factors also influence technical capacity, where inadequate training and resource limitations hinder effective project execution and maintenance of water infrastructure.

Despite efforts to strengthen institutional frameworks, water projects in Nairobi continue to experience inefficiencies due to overlapping responsibilities, policy gaps, and stakeholder misalignment. Previous studies have highlighted financial sustainability and technical challenges as key barriers to water service improvement but have not fully addressed the role of governance structures and institutional policies in project performance (Mutua & Nyambane, 2024).

Water is a valuable commodity on the planet, but there is a significant disparity between demand and supply. According to a report published by the United Nations in 2015, the world will face a 40% water shortfall by 2030, and the global economy will spend $500 billion on water insecurity by 2050. (UN-Water, 2016). On a global scale, more than 844 million people lacked access to clean water in 2018, with the majority coming from Sub-Saharan Africa. Clean water is essential for good health, social development, and economic development (World Health Organization, 2018). It is clear from this conversation that the water demand and supply disparity will only widen, necessitating the development of strategies to improve community water access. Planning, creating, carrying out, and sustaining water initiatives or programs are all part of managing water. This is done to ensure that society uses water in an efficient and effective manner. Water management involves training people to protect the water they possess via the use of interactive initiatives. (Vijita, 2016).

Globally, the performance of water projects has increasingly become a focal point for achieving sustainable development. Recent research highlights how innovative financial and management practices are essential for improving the outcomes of these projects. For example, Moreno (2024) explored the long-term sustainability and financial management of water firms in Spain, showing that combining cutting-edge technology with public-private partnerships can significantly boost

both profitability and resilience. This study illustrates the global need for comprehensive strategies to tackle water stress, emphasizing that modern infrastructure and effective financial oversight are key to enhancing the performance and sustainability of water projects worldwide.

The performance of water projects is a global concern due to their critical role in providing essential services for human well-being and economic development. In Turkey, the implementation of water projects is closely tied to effective governance and technical capacity. For example, Uysal et al.'s (2021) study on irrigation water management in southeast Turkey found that including the community in decision-making greatly enhanced resource allocation and project sustainability. However, obstacles to optimal performance were found, including insufficient funding and ineffective bureaucracy. These results highlight how crucial institutional elements are to improving the effectiveness of water projects.

In Sweden, the water and sewerage sector is a model of efficiency due to robust institutional frameworks and high levels of stakeholder collaboration. According to a report by Malmquist and Lundqvist (2022), municipal water projects in Sweden achieve high performance due to advanced technological integration, comprehensive policy enforcement, and well-trained personnel. Additionally, the active engagement of local communities ensures accountability and service quality. Despite these successes, emerging issues such as climate change and increased urbanization present new challenges, highlighting the need for continuous institutional adaptability.

On a continental scale, South Africa has made tremendous progress in improving water project performance, but challenges continue to exist. Motsaathebe et al. (2023) investigated the efficiency of water management projects in South Africa, finding that strategic financial planning and

stakeholder participation are critical for project success. The study discovered that while progress has been made, the country has ongoing challenges with resource allocation and project execution, demanding a continuous focus on creative management methods and comprehensive planning to create sustainable water solutions across the continent.

Water projects play a crucial role in addressing challenges of access to clean water and improved sanitation, particularly in developing countries. In Nigeria, institutional factors such as policy implementation, governance structures, and financial management significantly influence water project performance. A study by Ojo et al. (2022) highlighted that poorly coordinated government interventions and a lack of stakeholder engagement have led to suboptimal outcomes in many rural water supply projects. However, projects that adopted community-centered approaches and ensured transparency in resource allocation showed better performance and sustainability.

Regionally, in Tanzania, financial and managerial considerations have had a considerable impact on water project performance. Mpuya's (2024) research of the Pangani Basin demonstrates how smart financial planning positively improves water supply. The study found a clear correlation between good financial management and increased access to water, emphasizing the importance of stakeholder participation in decision-making to improve resource management efficiency. While Tanzania has made progress in managing its water resources, the study indicates that there is still opportunity for improvement in financial oversight and stakeholder engagement to maximise project performance and maintain sustainable water availability.

Similarly, in Uganda, water project performance has been heavily influenced by governance and financial constraints. Research by Nuwagaba et al. (2022) revealed that despite substantial investments in water infrastructure, many projects failed to deliver sustainable outcomes due to

corruption, poor planning, and inadequate stakeholder involvement. However, when strong institutional mechanisms were implemented—such as regular financial audits and community participation—project performance improved. These cases from Nigeria, Tanzania, and Uganda emphasize the critical importance of addressing institutional factors to enhance the effectiveness and sustainability of water projects.

Water is an essential resource on Earth, but there is a significant gap between its availability and demand. According to a UN report from 2015, the world will face a 40% water shortage by 2030, and by 2050, water insecurity will cost the global economy $500 billion. In 2018, over 844 million people, mainly in Sub-Saharan Africa, lacked access to safe water (UN-Water, 2016). Clean water is vital for social, economic, and societal growth (World Health Organization, 2018). Despite being essential for human survival, safe drinking water and sanitation are scarce in both rural and urban areas. The lack of access to safe water for drinking, cooking, bathing, and cleaning exacerbates societal problems and poverty levels. Water projects in Sub-Saharan countries, including Kenya, face challenges in performance and sustainability. Kariuki (2019) observed that many water projects in Kenya cease operations soon after the departure of their financiers (WaterAid, 2020).

In Ethiopia, water project performance has been heavily influenced by governance structures, financial constraints, and human resource capacity. A study by Abebe et al. (2023) revealed that the success of rural water supply projects was often undermined by limited technical expertise, inadequate funding, and weak stakeholder coordination. However, projects that embraced participatory approaches and capacity-building initiatives demonstrated improved sustainability and performance outcomes. These examples from Turkey, Sweden, and Ethiopia illustrate the critical role of institutional factors in shaping the success of water projects, highlighting the need

for context-specific strategies to address performance challenges.

As Nairobi City County's required supplier of water and sewerage services, NCWSC has improved service delivery by conforming to the 2010 Kenyan Constitution; The Kenyan government created the National Water Master Plan 2030 in 2013, outlining important multisector programs and activities to guarantee the long-term provision and oversight of water and hygiene services for all; the country's economic blueprint includes Agenda 2030, the targets for sustainable development under Agenda Six, the nation's Strategic Framework (2015–2025), the Nairobi Integrated Urban Development Masterplan (NIUPLAN), Vision 2030 under MTP III, and the Kenyan Economic Plan. All of that started to change in 2010 when Transparency International Kenya entered the region through the Transparency and Integrity in Service Delivery in Africa (TISDA) endeavour and partnered with water partners, resulting in targeted interventions to improve by re-engineering the company's procedures and institutional capability, water can be distributed more safely for the water specialist co-op and more charmingly for the residents (Bellaubi & Visscherb, 2016).

The Kenya National Water Services Strategy (2018-2022) put Kenya's sustainable water access at sixty percent and sanitation at sixty-eight percent Mutai and Musembi (2024) discovered that Kenya's water projects frequently suffer performance issues, with many projects having little impact despite substantial resources. Failures in the system are caused by insufficient resource investment and the strain of a fast rising population, resulting in inadequate services. Unsuccessful or delayed projects yield partial or unrealized advantages (Rotich, Emmy, & Chelangat, 2024). Such delays impose significant societal costs and impede contracting parties. Delays in water and sanitation projects limit access to economical, safe, and adequate water supplies. Investment in these projects is substantial, with development expenditure rising from KShs 20.5 billion in

2012/13 to KShs 65.2 billion in 2020/21 (KNBS, 2022).

1.0.1 Performance of Water Projects

Masunga (2023) defines water project performance as the efficacy and efficiency with which a project achieves its goals, taking into account factors like on-time completion, adherence to budget, and the calibre of service delivery. On the other hand, Omolo & Ndeto (2023) emphasize the project's sustainability and long-term advantages by defining it as the degree to which a water project achieves its intended impact on water supply, quality, and accessibility. Furthermore, Farouk, Radzi, Romali, Farouk, Elgamal, Hassan, and Rahman (2024) characterize the performance of water projects in terms of their capacity to provide communities with safe and dependable water services, emphasizing operational and maintenance aspects to guarantee ongoing functionality and user satisfaction. These definitions emphasize several aspects of the performance of water projects, such as sustainability, impact, and efficacy.

The primary aim of any project is to achieve optimal performance. A project is defined as an endeavor that utilizes resources to create a specific output. Effective project coordination involves aligning the three core elements: budget, timeline, and scope. The World Bank (2019) describes a project as the strategic application of resources with the goal of generating outcomes. The success of government projects is heavily dependent on their performance (Binder, 2017). To enhance the chances of success, project managers employ various institutional practices to plan and execute their projects. Many government-funded projects face financial difficulties during implementation, with inadequate funding being a common cause of delays globally. According to Radzi et al. (2024), timely and sufficient funding is crucial for project success. Insufficient or delayed financial resources can negatively impact project performance, causing delays due to issues such as

inadequate payment for materials, budget constraints, lack of financial literacy, and insufficient wages and equipment.

Kenya's water project projects, according to Maimuna (2017), have performed badly, with the majority of them even going out of operation and requiring rehabilitation. However, if the existing pattern of underperforming water projects is left to continue, a day may come when certain of these facilities may become dysfunctional, significantly lowering effective coverage. The lack of the necessary training for the particular project led to the conclusion that there was a quality gap in the water management committees. The biggest barrier to increasing urban water access in Kenya has been the inefficient institutional practices.

1.1 Statement of the Problem

Water and sanitation services in Kenya continue to face significant challenges, including insufficient water production, institutional inefficiencies, and weak governance structures. According to the Water Services Regulatory Board (WASREB, 2023), Nairobi's water demand stands at approximately 890,000 cubic meters per day, yet the Nairobi City Water and Sewerage Company (NCWSC) only produces about 525,000 cubic meters daily, resulting in a deficit of nearly 41%. This gap in supply has led to frequent water rationing, forcing residents to rely on expensive alternatives such as private vendors.

Nairobi County's water infrastructure suffers from aging pipelines, inadequate maintenance, and poor project execution, leading to frequent service disruptions and contamination risks. Research by Morrison et al. (2023) found that 37% of the city's water supply is lost due to leakages and illegal connections, exacerbating inefficiencies in service delivery. Rapid urbanization and a population growth rate of 4% annually (Kenya National Bureau of Statistics [KNBS], 2023) have

placed further pressure on the existing infrastructure, making it difficult to meet the rising demand. Additionally, the governance of water and sanitation projects is marred by financial mismanagement, bureaucratic inefficiencies, and corruption, resulting in stalled projects and resource wastage (Ngugi & Mwaura, 2023). Despite regulatory frameworks established by WASREB and county governments, many water projects still lack transparency and accountability in their financial and operational management.

While various studies have examined water and sanitation service challenges in Kenya, they have largely focused on infrastructure, service delivery, and urbanization (Wambui et al., 2023; Morrison et al., 2023). Adan and Mutuku (2023) emphasized the importance of adequate funding for M&E staff competency in community water projects in Mandera County, while Bulle and Muchelule (2024) highlighted participatory M&E practices in Wajir County. Rotich (2024) underscored the significance of comprehensive and participatory planning for successful water projects in Bomet County. However, limited research has focused on the role of institutional factors—such as financial management, project communication, M&E, and stakeholder engagement—in shaping project performance. This study sought to bridge that gap by examining how these critical institutional factors influence the performance of NCWSC projects, providing insights into improving governance, financial oversight, and sustainability in Nairobi's water and sanitation sector.

1.2 Purpose of the Study

The general objective of the study was to analyze the influence of institutional factors on the Performance of Nairobi City Water and Sewerage Company Projects, Kenya.

1.3 Objectives of the Study

i. To examine the impact of financial resource management on the effectiveness of projects undertaken by Nairobi City Water and Sewerage Company.
ii. To evaluate the effect of project communication on the performance of Nairobi City Water and Sewerage Company projects.
iii. To explore how stakeholder participation affects the performance of Nairobi City Water and Sewerage Company projects.
iv. To analyze the role of monitoring and evaluation in enhancing the performance of Nairobi City Water and Sewerage Company projects..

1.4 Research Questions

i. What impact does financial resource management have on the performance of NCWSC projects?
ii. In what ways does project communication affect the performance of NCWSC projects?
iii. How does stakeholder participation contribute to the performance of NCWSC projects?
iv. What role does monitoring and evaluation play in enhancing the performance of NCWSC projects??

1.5 Significance of the Study

This study offers valuable insights for stakeholders in NCWSC projects. Policymakers and regulators can use the findings to develop effective policies that enhance project performance. Understanding financial resource management, communication, stakeholder participation, and monitoring and evaluation will help ensure projects are completed on time, within budget, and to quality standards.

Project managers and NCWSC leadership will gain a clearer understanding of key success factors,

enabling better resource allocation, improved communication, and effective stakeholder engagement. The study also emphasizes the importance of strong monitoring and evaluation systems for tracking progress and making necessary adjustments.

For the local community, the research highlights the value of their participation in project planning and implementation, leading to more responsive and sustainable projects. Additionally, future scholars will benefit from insights into governance, financial management, and stakeholder involvement, contributing to academic discussions on sustainable project management and water service delivery.

1.6 Scope of the Study

The impact of institutional determinants on NCWSC project performance was examined in this study. Financial resource management, involvement of stakeholders, project communication, and monitoring and evaluation were the independent factors investigated. Three theories the logical framework approach, stakeholder theory, and the balanced scorecard model served as the foundation for this research project. The study employed a mixed research approach and targeted all employees at the Nairobi City Water and Sewerage Company (NWSC). The research was carried out between September 2024 and March 2025.

1.7 Study Limitations

This research encountered several limitations. Firstly, the study focused on four variables—financial resource management, project communication, stakeholder participation, and monitoring and evaluation—which might not have covered all factors influencing the performance of NCWSC projects.

Lastly, there was hesitation from top management to support the study, particularly given its focus on sensitive issues like financial management. To address this concern, the research clearly articulated the study's objectives and benefits to top management, highlighting how the results could enhance project performance. Gaining approval from Nacosti was also essential to ensure smooth data collection and cooperation.

1.8 Study Delimitations

This study delimited its scope to analyzing the influence of institutional factors on the performance of NWSC projects. The key independent variables under investigation included financial resource management, project communication, stakeholder participation, and monitoring and evaluation. These variables were selected based on their relevance and potential impact on the performance outcomes of water and sanitation projects.

1.9 Assumption of the study

This study operated under several important assumptions. First, it assumed that respondents, including project managers, staff, and stakeholders, would share honest and accurate information about their experiences and perceptions. The quality of the data depended on participants' willingness to speak candidly, particularly regarding sensitive topics like financial management. By ensuring confidentiality and anonymity, the study aimed to create a safe space for open communication.

Another key assumption was that the four variables under investigation—financial resource management, project communication, stakeholder participation, and monitoring and evaluation—were significant determinants of project performance at the Nairobi City Water and Sewerage

Company. It was also assumed that any external factors impacting project performance would be evenly distributed across the projects studied. This assumption helped ensure that the study could accurately assess the influence of the identified variables without being skewed by outside influences.

1.10 Operational definition of key terms

Institutional Factors: Organizational elements, including internal processes that influence the effectiveness and performance of projects within an institution, such as the Nairobi City Water and Sewerage Company. In this study, institutional factors encompass financial resource management, project communication, stakeholder participation, and monitoring and evaluation.

Water Performance: The effectiveness and efficiency of water management systems, including service delivery, reliability, and quality of water supply and sanitation. In the context of NCWSC, water performance reflects the company's ability to provide clean and accessible water while maintaining operational efficiency.

Financial Resource Management: The process of planning, organizing, directing, and controlling financial resources, including budgeting, expenditure tracking, and financial reporting, to ensure the efficient use of funds in project implementation**.** Key components include budgeting, expenditure control, financial reporting, and transparency in fund utilization, all of which affect the success of water and sanitation projects.

Project Communication: The exchange of information among project stakeholders, involving clear and timely sharing of updates, progress reports, and feedback to ensure alignment and collaboration throughout the project lifecycle. Effective project communication ensures transparency, coordination, and alignment of project activities with organizational goals. It

includes regular updates, feedback mechanisms, and documentation of progress.

Stakeholder Participation: The involvement of individuals or groups who have an interest in or are affected by a project, in decision-making processes and project activities, to ensure their needs and perspectives are considered.

Monitoring and Evaluation: The systematic process of tracking project progress and assessing its outcomes against objectives, using various tools and methods to ensure projects are on track and achieving their intended results.

CHAPTER TWO LITERATURE REVIEW

2.1 Introduction

This chapter includes the literature review, theoretical framework, relevant empirical studies, and a critique of existing literature related to the study objectives.

2.2 Theoretical Framework

The research was shaped in part by these notions. Stakeholder theory, the balanced scorecard model, and Hersey and Blanchard's situational leadership theory served as the foundation for this investigation.

2.2.1 Balance Scorecard Model

Kaplan and Norton (1996) developed the Balanced Scorecard Model to connect daily operations with strategy and provide a framework for performance monitoring. It helps organizations translate strategy into actionable goals. The model evaluates performance from four key perspectives: internal processes, innovation and growth, customer relations, and financial stability (Malina & Selto, 2015). This approach enables businesses to align their vision with measurable outcomes, ensuring strategic objectives drive overall success.

According to Tohidi, Jafari, and Afshar (2017), companies that have a clear core business and a strategy plan to meet their clients' objectives are more likely to be industry leaders. An organization's ability to operationalize its strategy, assess the performance of its strategic goals, and convert it into practical terms is essential to its development and success. The use of scorecard models, according to Maltz, Shenhar, and Reilly (2019), clearly requires reevaluating current corporate management

processes and shifting away from relying exclusively on financial data for strategy generation. It might be argued that the scorecard tries a true marketing emphasis by confirming the presence of a cooperative organisational structure that guarantees customer value. This model is relevant as organizations use Balanced Scorecards to align operations with their strategy and vision. It evaluates past, present, and projected financial and operational performance. An organization's ability to adapt its strategy depends on how effectively it engages with internal and external environments. Therefore, this study focuses on financial management aspects, using the model to explain financial resource management as part of the independent variable.

2.2.2 Stakeholder Theory

Milton Friedman introduced this concept in the 1980s as a key aspect of Corporate Social Responsibility (CSR), highlighting the role of stakeholders in achieving organizational goals. It advocates for innovative and effective management in challenging environments while ensuring strong performance. The theory emphasizes stakeholder involvement in project success, balancing their needs and interests. According to Friedman (2004), stakeholders play a crucial role in decision-making regarding project execution.

Stakeholder theory was relevant to the study of the performance of NCWSC projects because it emphasizes the importance of considering the interests and influences of all stakeholders involved. This theory is related to the purpose of establishing the effect of stakeholder participation on the study's performance.

2.2.3 Logical Framework Approach

The Logical Framework Approach (LFA) was popularized by Peter R. C. (1980) in his work on

project management and evaluation. LFA is a structured planning and management tool used to enhance the effectiveness of development projects. It involves defining clear, measurable objectives, inputs, outputs, and outcomes, and mapping out a logical sequence of activities necessary to achieve these objectives. LFA is highly valued for its systematic approach to identifying and addressing potential risks, and its emphasis on accountability and results-based management (Peter, 1980). The method helps in creating a detailed framework that outlines the project's goals, the means to achieve them, and the metrics for assessing progress.

Assumptions underpinning the LFA include the belief that projects can be effectively managed through a clear, logical framework that aligns activities with intended outcomes. It assumes that by systematically planning and evaluating each component of a project, stakeholders can anticipate and address potential issues before they impact project success. Additionally, LFA assumes that a well-defined framework facilitates better communication and understanding among stakeholders, thereby improving project execution and monitoring (Gertler et al., 2016). It relies on the premise that thorough documentation and regular evaluation lead to improved project performance and accountability.

The relevance of the Logical Framework Approach to monitoring and evaluation in this study lied in its ability to provide a comprehensive structure for assessing project effectiveness. By applying LFA, the study can ensure that Nairobi City Water and Sewerage Company projects are evaluated systematically, with clear criteria for success and mechanisms for tracking progress. This approach aids in identifying performance gaps, optimizing resource allocation, and enhancing overall project management, ultimately contributing to the success and sustainability of water and sewerage projects

2.3 Empirical literature

2.3.1 Financial Resource Management and Project Performance

Effective financial resource management is a critical determinant of project performance, particularly in large-scale infrastructure initiatives. Studies have shown that proper budgeting, transparent disbursement processes, and regular financial audits significantly enhance project efficiency and sustainability. Moreno (2024) used a statistical and technological technique to evaluate the long-term sustainability and financial management of water management firms in Spain. The study included a review of research on water resource management and innovation trends in addition to a quantitative examination of operational and financial information from official sources. The study involved gathering and analysing financial data, assessing profitability, and looking at methods and technology for coping with climate change. The enhanced profitability of the sector was demonstrated by the results, which were ascribed to modern infrastructure and effective financial management. Innovative technology uptake and public-private partnership. The externalization of water stress, according to the report, highlights the necessity of a worldwide strategy for water management. The study's conclusion emphasised the value of cooperation and innovation in enhancing Spain's water management and guaranteeing its sustainability and long-term resilience.

A quantitative study approach was employed by Pieterse et al. (2024) to examine critical project management (PM) skills necessary for the effective execution of major maintenance projects in the UK energy sector.The data was analyzed using descriptive and inferential statistics, including one sample t-tests and exploratory factor analysis (EFA), with the participation of professionals in a cross-sectional survey. Of the 45 PM abilities that were considered important, 37 were

discovered. The EFA identified seven primary skill clusters, including time management and coordination, communication, financial management, risk and stakeholder management, quality assurance, people management, forecasting, and technical/engineering capabilities. These findings demonstrated how important it is to have a broad range of skills while overseeing complex projects, with an emphasis on stakeholder expectations, time management, and resource management.

Okech and Ogola (2023) investigated the intricacies of public financial management (PFM) in Africa, highlighting the obstacles posed by inadequate institutions, corruption, and bad governance that impede economic growth. Notwithstanding these challenges, recent developments have been noted in the areas of accountability, transparency, and budgetary procedures. The chapter examined key PFM concerns including foreign direct investment, private sector partnerships, revenue generation, budgeting, and adherence to accounting and auditing standards using Uganda as a case study. According to the authors, PFM in Africa might significantly improve provided institutional strengthening efforts are maintained.

Aradukunda and Sikubwabo (2024) investigated how project performance in public institutions was affected by financial management of financial resources, with a particular emphasis on Kigali City. Data was gathered by questionnaires; descriptive statistics were then employed for processing and analysis. The results showed a strong correlation between project performance and financial resource management. Without financial resource management, Kigali City's achievement rate would have been 31%, according to regression analysis. For every unit increase in financial resource planning, project performance increased by 0.672, and for every unit increase in financial resource management, project performance improved by 1%. With statistically significant p-values of 0.000, the study concluded that financial resource planning and control had

the greatest influence on project success. In order to improve organizational performance, researchers advised Kigali City to continuously improve its understanding of financial control.

Ahinsah-Wobil (2024) investigated the impact of public financial management regulations on project continuity in Ghana, highlighting the function they play in guaranteeing accountability, transparency, and resource efficiency. In order to promote good governance and socioeconomic growth, the study emphasised the significance of financial controls, oversight systems, and reporting methods. It examined the connection between project planning, budget allocations, and spending tracking, highlighting beneficial results like better service delivery and heightened investor confidence. The report also covered the difficulties in putting these requirements into effect, pointing out that in order to improve financial management techniques and project success in Ghana, stakeholders must work together and adhere to international standards.

Mpuya (2024) investigated how financial planning affected the amount of water available in Tanga, Tanzania's Pangani Basin for residential use. By combining quantitative analysis with qualitative perspectives from key informants, a combination of methodologies was employed to focus the study on the components of financial control and decision-making processes. The quantitative results showed a strong positive association between household water availability and financial planning, underscoring the need of efficient financial management, particularly in budgeting and infrastructure development. The report also stressed how important it is for stakeholders to be included in the decision-making process in order to manage water resources more effectively. In order to guarantee local populations' sustained access to clean water, it was advised that the Pangani Basin Water Institute prioritise the wise use of financial resources for water infrastructure and increase stakeholder participation in decision-making.

Kimwaki and Eysimkele (2023) investigated the relationship between sustainable water availability and financial resource mobilization in the arid and semi-arid regions of Kenya. Planning, budgeting, prudent financial management, government and external financing, and resource mobilization abilities were the main topics of their research. A standardized questionnaire and a cross-sectional approach were used to poll 20 people from two significant water organizations. For sustainable water access, descriptive data showed that external finance, especially government backing, and financial resource mobilization expertise were essential. The report suggested that in order to improve important projects, water authorities should get more government financing.

Kipchirchir (2022) looked at how the Kenya National Highways Authority's road development projects in Nairobi City County performed in relation to resource management. Targeting ten active road construction projects from 2019, the study used a descriptive research approach and included 167 respondents in its sample, comprising managers of projects, site professionals, and members of the project team. A partially structured survey was used to gather data, and descriptive and inferential statistics were used to analyse the results. The associations between the variables were ascertained using basic linear regression analyses. The study's findings showed that management of finances, materials, machines, and people all had a favourable association. The results of regression analysis showed that road building project performance was greatly enhanced by efficient financial resource management. The results underscored the significance of effectively managing diverse resources to augment project success.

2.3.2 Project Communication and Project Performance

Shonubi and Akintaro (2020) investigated effect of communication on effectiveness of industrial

groups in Nigeria. This study concluded that excellent communication is crucial to organisational effectiveness. As a consequence, comprehensive research and effective communication planning were determined to be necessary for strategic decision-making, which is crucial to increased performance. According to the research, supervisors should embrace clear thoughts before speaking, have a comprehensive understanding of the human and physical environments, and identify the reasons for interaction to ensure optimum effectiveness and efficiency in performances.

Arinanye (2020) at Makerere University in Uganda researched organisational factors that influence worker productivity. The study sought to establish how organisational commitment effects employee performance, as well as the relationship between communications and worker productivity. The study recommended that the University foster a culture in which workers may speak with management in order to improve communication, especially with regard to decision- making, creativity, and collaboration. It also urged that management boost salaries, offer suitable remuneration, and honour long-term employees.

Chepkosgei et al. (2020) employed a descriptive research design in their investigation of the impact of communication strategies on the efficiency of businesses and financial state firms in Kenya. According to the study's findings, strategic communication influences the performance of Kenya's business Organisations. The director of communication strategies has to start establishing procedures that adheres to support proactive communication with the goal to enhance the dissemination of knowledge within and between multiple divisions of within organizations, and thus encourage the accomplishment of set targets and objectives.

Rotich (2024) examined the connection between the execution of water building projects in Kenya's Bomet County and project planning. The study looked at how technological integration,

communication, schedule, budget, and resource planning affected how projects were carried out. A descriptive survey approach was used to gather information from 164 respondents, which included administrators, engineers, and project managers. With p-values of 0.000 and F-statistics ranging from 49.64 to 85.480, regression analysis demonstrated substantial positive associations between project implementation and planning factors. Technology has been shown to improve these connections. The research findings suggest that efficient planning, particularly communication planning, can improve the implementation of water projects. It is suggested that these findings be utilised to boost water availability in regions classified as semi-arid and arid.

Kibet and Senaji (2024) explored the influence of communication management on the performance of water projects in Elgeyo Marakwet County, Kenya. The study aimed to determine how communication, through project control and work breakdown structures, impacted water project success. Data was collected from project managers, engineers, and community members using self-administered questionnaires. Regression analysis, aided by SPSS and MS Excel, showed that both project control and work breakdown structures were positively and significantly correlated with project performance. The study emphasized the importance of clear communication channels and adherence to guidelines to enhance the successful implementation of water projects.

Nyangena and Mungai (2024) researched on how project communications management affected the long-term viability of affordable housing initiatives in Kenya's Nairobi City County. The goal of the study was to investigate how systems and channels of communication affected the sustainability of programs. With a sample of 11 project managers, 64 national housing employees, 11 contractors, 11 chief engineers, and 88 steering committee members, the study's target audience comprised 11 affordable housing initiatives employing a descriptive research methodology. Eighteen project

professionals participated in a pilot test, and primary data were gathered. Using Cronbach's Alpha Coefficient and content validity, validity and reliability were evaluated. The analysis of the data was done using SPSS 27. The results showed that there was a strong significant association (r=0.625, p=0.000) between communication systems and sustainability and a moderately significant relationship (r=0.456, p=0.045) between channels of communication and program sustainability. To improve communication integration and feedback, the study advised implementing accessible communication channels and making investments in efficient information management systems.

2.3.3 Stakeholder Participation and Project Performance

Moreira et al. (2024) used the Água Viva Program to study stakeholder engagement for comprehensive water management in Monte Verde de Minas, Brazil. Global Wash conducted a three-year community case study with four stages: planning and discovery, recognition, engagement, and intervention. The importance of multi-stakeholder participation and community engagement in achieving effective governance was emphasized by the study. It described how difficult it is to reconcile conflicting interests and emphasized the vital role that relationship-building Wash professionals play in connecting community demands with government objectives. The findings emphasize how important it is for everyone to participate and work together in water.

Stakeholder engagement in the Banger polder system project in Semarang, which was started in 2016 to lower flood risk and enhance water management, was examined by Heikoop et al. (2024). To evaluate stakeholder engagement, the research performed a SWOT analysis, highlighting significant possibilities, threats, vulnerabilities, and strengths. According to the results, Semarang's stakeholder involvement scored poorly on the OECD engagement measure. Low resident knowledge, which resulted in improper garbage disposal, inadequate management and funding, and uncertainty over

future maintenance were among the primary risks mentioned. The research highlights the necessity of increased stakeholder involvement in order to preserve the system's efficacy and sustainability.

In the South Unguja District of Zanzibar, Pandu (2024) looked into the connection between stakeholder participation and the success of water resources projects. The study assessed stakeholder involvement levels, access obstacles, and participation methods. Data from 175 respondents was gathered using surveys using a mixed-methods approach and the ladder of citizen engagement theory. Local communities, NGOs were not highly active in the initiatives, according to data analysis conducted using IBM SPSS version 24. Effective participation in the initiative was hampered by problems like low public awareness, outdated infrastructure, financial constraints, and corruption. The study recommended removing these obstacles in order to raise stakeholder participation and boost the results of water projects.

The impact of stakeholder participation on the efficacy of rural power projects in southern Uganda was examined by Ainomugisha, Mpangwire, and Musiita (2024). They used regression and Pearson correlation to analyze data from 34 out of 39 research utilizing a cross-sectional study design. The study found that participation in project performance, legal compliance, and communication were significantly positively correlated. Regression analysis revealed that these traits accounted for 39.5% of the variance in project success, meaning that other factors were responsible for the remaining 60.5%. The results highlight how crucial it is for project success to fully incorporate stakeholder groups, communicate clearly, adhere to legal requirements, and actively participate throughout the project.

Rukunga and Pedo (2024) used the theories of planned behavior and participation to investigate how conflict management and stakeholder identification affect the implementation of water projects in

Kenya. With a sample of 169 project managers chosen by proportional random selection, the study used a cross-sectional design and was based on 291 active projects under Water Works Development Agencies. The moderating effect of project manager skill was evaluated using regression models, whereas Pearson correlation examined the correlations between variables. The results showed that identifying stakeholders and managing conflicts greatly enhanced project execution. The research advised project managers to carry out comprehensive stakeholder evaluations at the beginning of the project in order to guarantee successful execution and reduce disputes.

The effect of relationship management and public consultation on the construction of water projects in Mount Kenya was investigated by Maomond and Kyule (2024). The research, which employed a descriptive methodology and focused on project committee members, county water engineers, government representatives, and community leaders, included eight counties and 420 inhabitants. The Nassim algorithm was used to pick 130 respondents using stratified random sampling. Semi-structured questionnaires were used to gather data, and SPSS was used for analysis. Results indicated that public consultation and relationship management greatly improved project execution. In order to improve community involvement and expand development expertise beyond project execution, the research advised training and capacity-building initiatives. External assistance was also recommended for additional capacity building.

The impact of stakeholder participation on the efficiency of irrigation systems in Kisumu County, Kenya, was examined by Awino and Mungai (2024). 15 block heads, 15 Ministry of Water, Sanitation, and Irrigation staff, and 65 members of the project steering committee participated in the exploratory research, which focused on five irrigation projects. Because the population was so small, a census method was used, and questionnaires were used to collect primary data. The results showed

that stakeholder involvement assessment and project success were significantly and strongly correlated with stakeholder mapping and project performance. According to the research, sufficient funding should be allocated for project execution, project objectives and schedules should be clearly stated, and innovative monitoring techniques should be used to obtain real-time data on stakeholder participation and project advancement.

In Kenya, Monyenye, Benard, and Julius (2024) looked into how community engagement affected the success of major dam projects. 221 people participated in the study's survey, including local inhabitants, government representatives, engineers, water service providers, and donor representatives. Questionnaires were used to gather data, and both descriptive and inferential statistics were used for analysis. The results revealed conflicting views on community engagement, with many participants accusing political leaders of influencing project assessments and failing to get informed consent. The study came to the conclusion that community involvement improved the performance of dam projects and suggested that important stakeholders and locals be involved at every step to increase ownership and understanding of the socioeconomic advantages.

2.3.4 Monitoring and Evaluation and Project Performance

Liu et al. (2024) used satellite images and GIS technologies to evaluate regional and temporal patterns in order to investigate the effects of the Grain for Green Project in Wuqi County, China. In order to lessen soil erosion and restore flora, the project was started in 2000 with the goal of converting agriculture into grassland and woodlands. The results showed that 64% of farmland had been transformed, resulting in a notable increase in plant cover and decreased soil erosion. It turned out that grassland expansion was more appropriate than forest growth. Due to the availability of less steep terrain, steep agriculture (>25°) was converted. In order to achieve these results, the study emphasized

the significance of efficient monitoring and assessment.

The impact of M&E practices on the efficacy of water initiatives in Western Kenya was assessed by Mutai and Musembi (2024). Using a descriptive research methodology, the study looked at 219 water-related projects with a sample of 242 respondents, including surveyors, administrators, and project managers. A semi-structured questionnaire was used to collect the data, and descriptive statistics were used for analysis. SPSS software was used to analyze the data. The study found that the success of regional water projects was positively and significantly impacted by both technical competency and M&E planning. Additionally, they emphasized the need of M&E education, making sure that individuals get the necessary training and degrees to enhance project outcomes.

In Siaya County, Kenya, Otieno and Muchelule (2024) investigated how M&E practices affected the outcome of irrigation projects. They gathered data from 447 participants in 16 irrigation projects using a descriptive research methodology. The reliability of the questionnaire was confirmed by a pilot study using the Cronbach Alpha Coefficient. 81% of respondents responded, according to SPSS analysis. M&E practices and project performance were found to be strongly positively correlated using descriptive and inferential statistics, such as multilinear regression and Pearson correlation. In particular, for every unit improvement in M&E planning and training, performance increased by 0.355 and 0.372 units. To improve project outcomes, the report suggested thorough M&E implementation together with improved planning and training.

Kwareh, Mgale, and Rwela (2024) investigated the SIKIKA Healthcare Program's M&E procedures in Dodoma and Dar es Salaam, Tanzania. Data for the study, which included 73 individuals who were purposefully chosen, was gathered through document reviews, focus groups, and interviews. The

results showed how important M&E procedures were to the success of the project, including site inspections, standardized reporting, supportive supervision, and participatory monitoring. With qualified personnel guaranteeing execution, the program successfully included M&E from the planning phase. But there wasn't enough community participation in the monitoring process. According to the study's findings, project performance was greatly improved by effective M&E procedures, stakeholder involvement, enough finance, technology adoption, and management commitment.

Kimatu and Musembi (2024) looked into how M&E methods influenced the effectiveness of community water projects in Machakos County, Kenya. The purpose of the study was to assess the effects of M&E stakeholder involvement and planning review. The quantitative data was analyzed for correlations between variables using descriptive statistics and Pearson R correlation, while the qualitative data was analyzed using content analysis. The findings demonstrated that the performance of the project was positively impacted by the planning review and the participation of M&E stakeholders. The study found that regular stakeholder workshops would assist to maintain participation and offer a methodical reporting approach that would make project updates and outcomes simple to comprehend.

In Kismayu, Somalia, Mohamud and Nyandoro (2024) investigated how M&E paractices affected the long-term viability of community water projects supported by donors. The study emphasized how socioeconomic and climatic conditions make it difficult to undertake sustainable water projects. 132 participants from 250 water projects filled out questionnaires using a descriptive methodology, and SPSS was used to analyze the results. The results showed that stakeholder participation, sufficient finance, and timely M&E operations were essential for sustainability. While enough resources

allowed for efficient monitoring, more financing enhanced stakeholder participation. Strong M&E procedures guarantee long-term viability, the study found. Enhancing stakeholder participation, obtaining sufficient M&E money, and following project success timeframes were among the recommendations.

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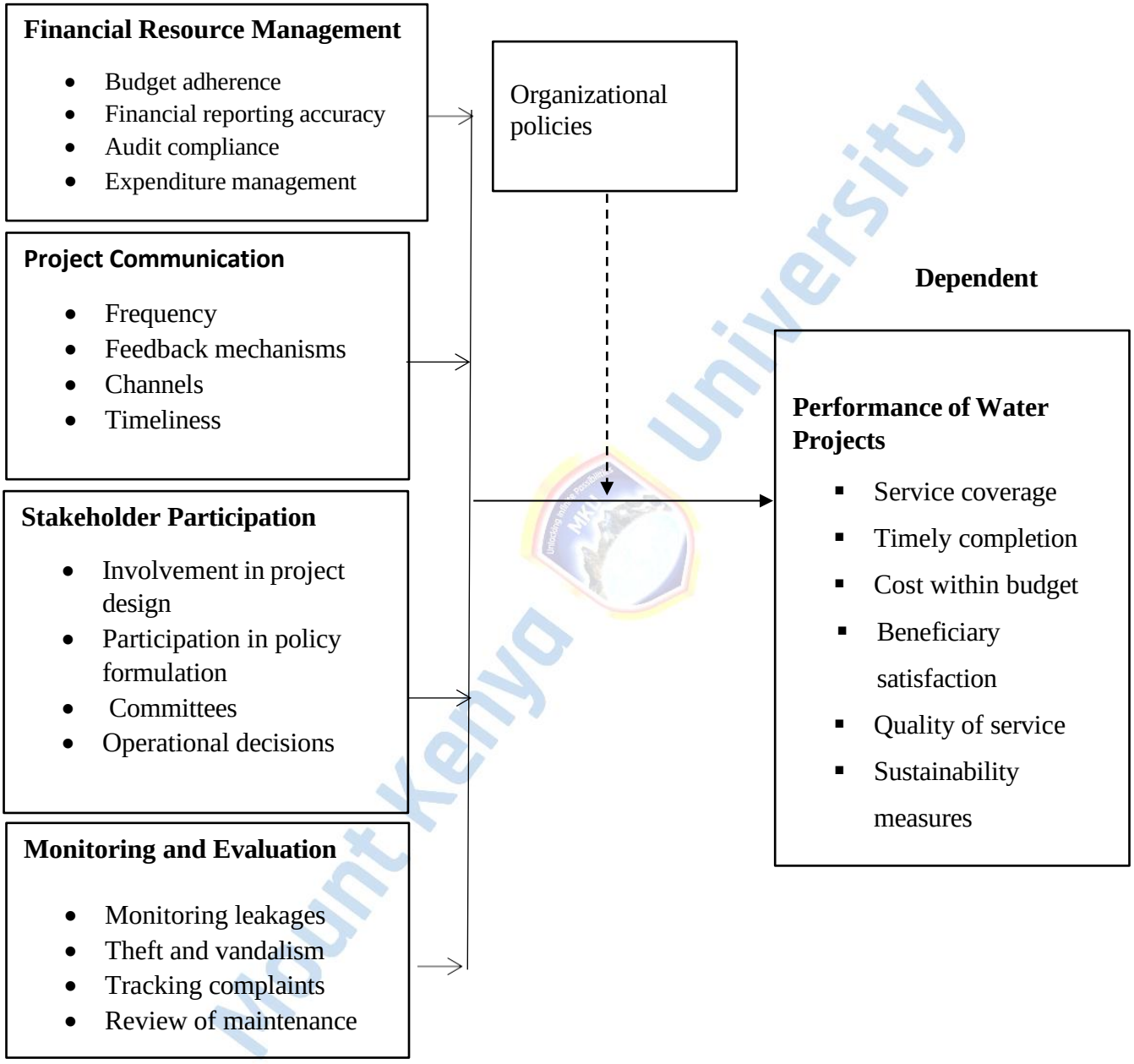
2.4 Conceptual framework

Independent Variable



Source: Researcher (2025)

2.5 Recap of literature review and Research Gaps

This chapter reviews the literature, theoretical frameworks, and empirical studies relevant to the study's objectives. It critiques existing literature to establish a foundation for understanding how various factors impact project performance, particularly focusing on financial resource management, project communication, stakeholder participation, and monitoring and evaluation.

The study is based on the Balanced Scorecard Model, Stakeholder Theory, and the Logical Framework Approach (LFA). The Balanced Scorecard Model, developed by Kaplan and Norton (1996), links strategy to performance through four perspectives: financial, customer, internal processes, and learning and growth. Stakeholder Theory, as proposed by Freeman (1984), highlights the importance of considering stakeholder interests for project success. The Logical Framework Approach, popularized by Peter R.C. (1980), offers a structured planning and management tool that enhances project effectiveness through clear objectives, inputs, outputs, and outcomes.

Author and Year	Study	Key Findings	Knowledge gap and Focus of Current study
Moreno (2024)	Financial management and sustainability in water management firms in Spain..	Effective financial management and modern infrastructure improved profitability. Public-private partnerships played a crucial role in financial sustainability..	Concentrated on financial management in Spain's water sector but did not explore how institutional factors impact water and sewerage project performance in Kenya. The current study evaluated financial, regulatory, and governance factors affecting Nairobi's water projects.

Pieterse et al. (2024)	Project management skills for energy projects in the UK.	Identified 37 essential skills for successful project execution, including financial management, scheduling, and stakeholder coordination.	Focused on energy projects in the UK without addressing institutional challenges in Kenya's water and sewerage sector. The current study investigated the role of institutional frameworks in Nairobi's water projects.
Okech and Ogola (2023)	Public financial management (PFM) in Africa.	Weak institutions, corruption, and governance issues hindered economic growth, despite improvements in accountability and budgeting.	Provided a broad analysis of PFM in Africa but did not focus on specific institutional factors affecting water project performance in Kenya. The current study examined governance, financial management, and regulatory frameworks in Nairobi's water projects.
Aradukunda and Sikubwabo (2024)	Financial resource management and project performance in Kigali.	Strong correlation between financial planning and project success. Each unit increase in financial control improved project outcomes.	Focused on financial planning in Kigali's public sector but did not address institutional factors in Kenya's water and sewerage projects. The current study analyzed financial policies, stakeholder engagement, and governance in Nairobi's water projects.
Ahinsah-Wobil (2024)	Public financial management regulations in Ghana.	Regulations improved accountability, transparency, and resource efficiency but faced implementation challenges.	Examined Ghana's financial regulatory framework but did not analyze how institutional factors impact water project sustainability in Kenya. The current study assessed

			financial governance and institutional performance in Nairobi's water sector.
Mpuya (2024)	Financial planning and water availability in Tanzania.	Financial planning significantly influenced water access, highlighting the need for efficient budgeting and stakeholder participation.	Addressed water accessibility but did not examine institutional challenges affecting project performance in Kenya. The current study explored institutional governance, financial planning, and regulatory policies in Nairobi's water projects.
Kimwaki and Eysimkele (2023)	Financial resource mobilization and water access in Kenya's arid areas.	Resource mobilization skills and external funding played a key role in sustaining water access.	Focused on water access in arid regions but did not examine institutional factors affecting urban water and sewerage projects. The current study investigated governance, funding, and institutional capacity in Nairobi's water projects.
Rotich (2024)	Project planning and water infrastructure execution in Bomet, Kenya.	Planning, budgeting, and communication significantly affected project implementation.	Analyzed project planning in a rural county but did not assess institutional influences in urban water projects. The current study examined institutional planning and regulatory frameworks in Nairobi City Water and Sewerage Company projects.
Kibet and Senaji (2024)	Communication management in water projects in Elgeyo Marakwet, Kenya.	Communication, project control, and work breakdown structures improved project performance.	Addressed communication but did not focus on institutional factors like governance and financial oversight in Nairobi's water and sewerage projects. The current study

			investigated how institutional policies shaped project efficiency and sustainability.
Moreira et al. (2024)	Stakeholder participation in water management in Brazil.	Community involvement improved governance but faced challenges in harmonizing interests.	Focused on Brazil's water governance model but did not address institutional factors in Kenya's water and sewerage projects. The current study examined how institutional engagement and policies influenced Nairobi's water projects.
Heikoop et al. (2024)	Stakeholder engagement in Semarang's flood control project.	Weak stakeholder participation led to poor project sustainability.	Examined flood control but did not explore institutional factors shaping water and sewerage projects. The current study analyzed stakeholder and institutional governance in Nairobi's water projects.
Pandu (2024)	Stakeholder engagement in Zanzibar's water projects.	Limited participation due to financial constraints, outdated infrastructure, and corruption.	Addressed stakeholder engagement but did not focus on institutional governance in water project performance. The current study assessed institutional frameworks, governance, and financial sustainability in Nairobi's water projects.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the research methodology that was employed by the researcher to collect and analyze data.

3.2 Research Design

A strategy that guides the conduct of research is called a research design (Creswell & Creswell, 2017). It is employed to test theories and address problems with research. This study employed a mixed research approach to leverage the strengths of both quantitative and qualitative methods, providing a comprehensive understanding of how institutional elements influence project performance. Quantitative analysis revealed clear statistical insights into how variables such as financial resource management, project communication, stakeholder participation, and monitoring and evaluation are related. On the other side, qualitative methodologies delved deeper into stakeholders' contexts and experiences, revealing the details and complexities that numbers alone may have overlooked.

3.3 Target Population

The target population is the specific segment of the overall population that the researcher is focused on, has access to, or is most likely to gather the necessary data from (Mugenda & Mugenda, 2019). This study targeted all employees in the non-revenue water department at the Nairobi City Water and Sewerage Company (NWSC). This is the department that is responsible for the water and sanitation projects. According to the organization (2024), there are 161 employees in the department.

3.4 Sample and Sampling Technique

Census sampling was adopted in this study because the target population of 161 respondents was relatively small, making it feasible to include all individuals in the study. According to Gathii et al. (2019), census sampling is appropriate when the population is fewer than 200, as it ensures comprehensive data collection without the biases introduced by selective sampling techniques. This method eliminates sampling errors, providing a higher level of confidence in the findings (Giedre & Sliogeriene, 2020). Furthermore, it enhances data validity by capturing diverse perspectives within the population, allowing for a more detailed analysis of institutional factors affecting project performance. Given the need for accuracy in assessing financial management, stakeholder engagement, project communication, and monitoring and evaluation, census sampling ensured that no critical insights were overlooked.

3.5 Data collection methods and procedures

The study utilized both structured and semi questionnaires. The structured questionnaire consisted of two sections: the first section gathering demographic information from respondents, and the second section comprising questions related to the four independent variables and their impact on the dependent variable. According to Nayak and Singh (2021), a questionnaire is a written document containing questions that respondents are required to answer in writing. Spector (2019) supports the use of questionnaires as the most suitable data collection tool, especially given the busy schedules of organizational employees. The drop-off and pick-up method—which was selected for its practicality, ease, and flexibility—was used to disseminate the survey instrument.

3.5.1 Piloting of Instruments

Piloting, according to Mugenda and Mugenda (2019), enables researchers to evaluate their readiness by spotting possible flaws that can affect the real data gathering procedure. The pilot study evaluates the validity and dependability of research tools, emphasizing process

improvement over data collection. Ten employees of the Kiambu Water and Sewerage Company took part in the study's pilot phase. After that, the research tool was modified as necessary in light of the input obtained.

3.5.2 Validity of the Research Instruments

Validity, according to Sekaran & Bougie (2019), is the degree to which sample designs appropriately evaluate research goals and reflect desired measurements. A test-retest approach will guarantee the validity of the questionnaire. Through a study of the literature, expert input, and alignment with the conceptual framework and research objectives, content validity was established. Face validity was ensured by incorporating supervisor feedback and refining the questionnaire. In order to improve participant engagement and comprehension, the focus was on content validity through the use of plain language and simplified technologies.

3.5.3 Reliability of Instruments

Livingston et al. (2018) state that assessing measurement dependability involves figuring out how free measurements are from unstable or random error. To make sure they produced consistent results, piloted outcomes were assessed in this study. Following descriptive statistics of each variables, the reliability index was computed using Cronbach's alpha. A higher score meant that the scale was more reliable.

3.6 Data Analysis and Presentation

The data analysis process involved reviewing, adjusting, transforming, and modeling data to identify key patterns, make decisions, and support conclusions. Qualitative data was analyzed thematically, while quantitative analysis was conducted using SPSS version 28. A frequency distribution table was maintained to summarize statistical estimates for each variable. Descriptive statistics, including measures of central tendency and dispersion, were computed.

A multivariate linear regression model assessed the impact of independent variables on project performance, using the equation:

$Y= Y = \beta0 + \beta1 * X1 + \beta2 * X2 + \beta3 * X3 + \beta4 * X4 + e$

Where: Y = performance of Nairobi City Water and Sewerage Company Projects

X1 = Financial resource management

X2 = Project communication

X3 = Stakeholder participation

X4 = Monitoring and Evaluation

e = error term

β0= represents the constant

β=1, 2, 3, 4 are regression coefficients.

3.7 Diagnostic Tests

3.7.1 Test for Autocorrelation

The Durbin-Watson statistic was used to determine the relationship between residuals in regression analysis in order to assess the autocorrelation of residuals.

3.7.2 Heteroscedacisty

The Breusch-Pagan test, which examines how the residual variance depends on independent factors, was used to test for heteroscedasticity.

3.7.3 Multi-collinearity

To determine the degree of correlation between each predictor variable and the multicollinearity issue, the Variance Inflation Factor (VIF) test was employed. More than ten points on the VIF indicates high multicollinearity, which might cause issues for the regression model.

3.8 Ethical Considerations

Informed permission was obtained to make sure participants understood the study's goal and had the choice to withdraw at any time, in accordance with ethical research norms. To preserve participant privacy, the data was anonymised and kept private. By appreciating their viewpoints and treating them with dignity during the study process, participants' respect was maintained.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents the findings of the study. The data is organized descriptively and qualitatively, supported by inferential statistics to provide a deeper understanding of the relationships among the independent variables.

4.2 Response rate

The study targeted a total of 161 respondents from the non-revenue water department at the Nairobi City Water and Sewerage Company (NWSC). As indicated in Table 4.1, 144 questionnaires were returned, with 8 being incomplete. This resulted in 136 completed questionnaires, yielding a response rate of 84.5%. This response rate demonstrates a high level of engagement and participation from the targeted group, enhancing the credibility of the study's findings. The presence of 8 incomplete questionnaires suggests that some respondents may have faced challenges in addressing certain survey questions, but the majority provided thorough and complete responses. Overall, a response rate of 84.5% is commendable, providing a robust basis for drawing meaningful conclusions from the data collected. According to Baruch and Holtom (2008), a response rate above 70% is acceptable for organizational studies, while Nulty (2021) reaffirmed that a response rate exceeding 70% ensures representativeness and validity in survey-based research.

Table 4.1.Response Rate Summary

Total No of questionnaire issued out	Total No of returned questionnaires	Number of incomplete Questionnaires	Completed questionnaire received	Response Rate
161	144	8	136	84.5%

Source: Researcher (2025)

4.3 Reliability Results

The researcher used the completed questionnaire to generate the Cronbach Alpha Coefficients.

Table 4.2: Reliability Results

	No. of Items	Cronbach Alpha Coefficient
Financial resource management	4	.882
Project communication	4	.841
Stakeholder participation	4	.891
Monitoring and evaluation	4	.962
Performance of NCWSC projects	6	.898

Table 4.2 presents the reliability results, with Cronbach's Alpha coefficients indicating strong internal consistency across all constructs. Financial Resource Management scored .882, Project Communication .841, Stakeholder Participation .891, and Monitoring and Evaluation achieved an exceptional .962. The Performance of NCWSC Projects construct recorded .898. These high coefficients confirm that the study's measurement instruments are reliable, ensuring valid insights into the influence of institutional factors on NWSC project performance. According to Taber (2018), Cronbach's Alpha values between 0.7 and 0.9 confirm good internal consistency, ensuring that the research instruments consistently measure the constructs.

4.4 Demographic Attributes of Respondents

This describes participants' experiences, gender, age, and education level, which help assess respondent profiles and response reliability.

4.4.1 Years of Work Experience

This section analyzes the work experience distribution among respondents from NWSC's non-revenue water department, highlighting key variations.

Category	Frequency	Percent %
Less than 1 Year	8	5.9%
1-3 Years	11	8%
4-6 Years	23	17%
7-10 Years	46	33.8%
Over 10 Years	48	35.3%
Total	136	100%

Table 4.3 presents a distribution of the years of work experience among respondents from the non-revenue water department at the Nairobi City Water and Sewerage Company (NWSC). The data reveals that a significant portion of respondents has substantial experience, with 35.3% having over ten years in the field and 33.8% possessing between seven to ten years. In contrast, only 5.9% of respondents reported having less than one year of experience, indicating that the majority of staff have developed considerable expertise in their roles. This distribution suggests that the department benefits from a wealth of knowledge and familiarity with the operational challenges, which may enhance their ability to address the factors influencing project performance effectively.

4.4.2 Percentage Response by Gender

This section summarizes the gender distribution of study participants, presenting the number and percentage of male and female respondents.

Table 4.4; Distribution by gender

Gender	Frequency	Percentage (%)
Female	58	42.6%
Male	78	57.4%
Total	136	100.0%

Source: Researcher (2025)

Table 4.4 displays the gender distribution of respondents in the study, revealing that 57.4% of participants were male, while 42.6% were female. This indicates a predominantly male representation within the non-revenue water department at the Nairobi City Water and Sewerage Company (NWSC). The higher percentage of male respondents could reflect the gender dynamics often observed in technical and engineering fields, which may have historically favored male participation. However, the presence of a significant number of female respondents suggests a

gradual shift toward gender inclusivity in these sectors. This gender distribution is essential for understanding the perspectives and experiences shared in the study, as it may influence the responses regarding institutional factors and project performance.

4.4.3 Age Distribution

The survey included participants aged below 24 to 56–60 years, ensuring diverse perspectives across life stages. Table 4.4 presents the age distribution of respondents.

Table 4.5; Respondents by Age

Source: Researcher (2025)

Age	Frequency	Percent %
Below 24	4	3%
25-35	28	20.6%
36-45	43	31.6%
46-55	36	26.5%
56-60	25	18.3%
Total	136	100%

Table 4.5 displays the age distribution of respondents from the Nairobi City Water and Sewerage Company (NWSC), revealing a diverse range of perspectives. The majority of participants were aged 36-45 (31.6%), followed by 46-55 (26.5%) and 25-35 (20.6%), indicating a workforce primarily composed of mid-career professionals with substantial experience. In contrast, the youngest group (below 24) represented only 3%, while those aged 56-60 comprised 18.3%. This distribution suggests a well-rounded representation, where the insights of both seasoned employees and younger staff contribute to a comprehensive understanding of the factors influencing project performance. However, the limited participation of younger professionals may point to a gap in

perspectives from early-career individuals, which could be valuable for future organizational development and succession planning.

4.4.4 Highest Level of Education

This section examines respondents' educational backgrounds, highlighting their qualifications and expertise.

Table 4.6; Distribution of respondents as per academic qualifications

Category	Frequency	Percent %
Certificate	11	8%
Diploma	39	28.6%
Undergraduate	65	47.8%
Masters	18	13%
PhD	3	2.6%
Total	136	100%

Table 4.6 presents the academic qualifications of respondents from the Nairobi City Water and Sewerage Company (NWSC), highlighting a diverse educational background among the participants. The majority of respondents held undergraduate degrees (47.8%), followed by diploma holders (28.6%), indicating a significant proportion of staff with post-secondary education. Master's degree holders comprised 13%, while only 2.6% had PhDs. The representation of qualified individuals suggests a competent workforce capable of addressing the operational challenges within the organization. However, the relatively low percentage of advanced degree holders (Master's and

PhD) might indicate a potential area for improvement in fostering higher education among employees, which could enhance expertise and innovative solutions within the department.

4.5 Performance of Nairobi City Water and Sewerage Company projects

This section evaluates NCWSC project performance as the study's dependent variable, using six Likert-scale constructs. Descriptive statistics, including means, percentages, and standard deviations, summarize respondents' perceptions of project effectiveness.

Table 4.7; Performance of Nairobi City Water and Sewerage Company Projects

Statements	1	2	3	4	5	Mean	SD
The projects have significantly increased the area covered by water services	6%	10%	13%	45%	26%	4.51	0.564
The project team adheres to the timeline for each milestone	24%	40%	15%	11%	10%	2.32	0.993
Budgetary adjustments for water and sanitation projects, if needed, are minimal and justified	18%	21%	19%	30%	12%	3.23	0.858
Beneficiaries are satisfied with the water services provided by the company	24%	32%	15%	19%	10%	2.94	1.018
There are minimal disruptions in the water supply	15%	33%	10%	23%	19%	3.11	0.918
The company includes measures to ensure the sustainability of water service	4%	8%	14%	45%	29%	4.38	0.528
Composite mean and composite SD						3.415	0.813

N=136

Table 4.7 presents the performance of Nairobi City Water and Sewerage Company (NCWSC) projects. The performance of Nairobi City Water and Sewerage Company (NCWSC) projects, as evaluated in this study, revealed mixed outcomes, with certain aspects performing well while others faced notable challenges. The expansion of water service coverage received the highest approval (mean = 4.51, SD = 0.564), indicating a generally positive perception of NCWSC's efforts to increase accessibility. However, concerns emerged regarding project timelines (mean = 2.32, SD = 0.993), budgetary adjustments (mean = 3.23, SD = 0.858), and beneficiary satisfaction (mean = 2.94, SD = 1.018), suggesting inefficiencies in financial management, stakeholder engagement, and service delivery. The overall composite mean of 3.415 reflects moderate project performance, underscoring the need for strategic improvements in project execution, particularly in mitigating service disruptions and enhancing customer satisfaction.

Qualitative findings supported these quantitative results, emphasizing the role of effective communication and collaboration in project success. Respondents highlighted that timely sharing of information among project teams, government agencies, and community members facilitated smoother implementation processes, reducing delays and improving overall service delivery. Instances where communication gaps existed often led to misaligned priorities, inadequate responses to challenges, and delays in meeting project milestones. Effective collaboration among stakeholders ensured that local concerns were addressed promptly, fostering a sense of inclusivity and shared responsibility in water service management.

Another critical theme from qualitative responses was financial resource management, where respondents underscored the necessity of prudent budgeting and expenditure control. Participants reported that well-managed financial resources enabled project teams to respond flexibly to

emerging challenges, ensuring minimal disruptions in service delivery. Conversely, inadequate financial planning and irregular disbursement of funds led to project delays, inefficiencies, and compromised service quality. Additionally, some respondents noted that engaging local communities in maintenance and water conservation efforts not only reduced operational costs but also promoted long-term sustainability. These insights reinforced the importance of integrating sound financial planning with stakeholder participation to enhance project performance.

The study findings align with previous research on water project management. Adan and Mutuku (2023) emphasized that funding adequacy and M&E staff competency were critical for effective community water projects in Mandera County. Similarly, Bulle and Muchelule (2024) found that participatory M&E practices in Wajir County enhanced stakeholder ownership and project success. Rotich (2024) further highlighted that comprehensive planning and sustained stakeholder engagement significantly influenced water project outcomes in Bomet County. These studies affirm that institutional factors such as communication, financial management, and M&E are crucial determinants of water service efficiency.

However, some studies present contrasting views. Morrison et al. (2023) argued that while financial and stakeholder factors are essential, infrastructural inadequacies and population pressure remain the dominant challenges affecting water services in urban areas like Nairobi. Wambui et al. (2023) similarly contended that rapid urbanization and limited maintenance investments exert greater pressure on water utilities than institutional inefficiencies. These differing perspectives suggest that while institutional factors are influential, external variables such as infrastructure and urban expansion also play a significant role in shaping water project performance. Addressing these issues holistically through an integrated approach will be essential for improving NCWSC's service delivery and project sustainability.

4.6 Financial resource management

This section presents descriptive and qualitative findings on financial resource management and its impact on NCWSC project performance. It examines budgeting and resource allocation using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 4.8; Financial resource management and Performance of projects

Statements	1	2	3	4	5	Mean	SD
The projects consistently adheres to the allocated budget	24%	38%	14%	14%	10%	2.44	1.101
The financial reports for the water and sanitation projects are accurate and reliable	22%	37%	16%	15%	10%	2.71	0.996
The water projects complies with all audit requirements and recommendations	21%	30%	16%	20%	13%	2.80	0.974
Expenditure is managed effectively to avoid cost overruns	23%	33%	13%	18%	13%	2.70	0.994
Composite mean and composite SD						2.66	1.016

N=136

The analysis of financial resource management in Nairobi City Water and Sewerage Company (NCWSC) projects reveals significant challenges, as indicated by the low mean scores across various constructs. The adherence to allocated budgets scored the lowest (mean = 2.44, SD = 1.101), highlighting concerns about financial discipline. Similarly, the reliability of financial reports (mean = 2.71, SD = 0.996) and compliance with audit requirements (mean = 2.80, SD = 0.974) indicate moderate confidence in financial transparency and regulatory adherence. Effective expenditure management to avoid cost overruns (mean = 2.70, SD = 0.994) also scored low, reinforcing concerns about financial efficiency. The overall composite mean of 2.66 (SD = 1.016) suggests that financial

management practices are perceived as weak, emphasizing the need for improved budgetary controls, audit compliance, and strategic financial oversight to enhance project performance.

Qualitative findings reinforce these concerns, with respondents identifying limited funding as a major challenge affecting project implementation. Many emphasized that government-allocated budgets were often insufficient to cover the full scope of projects, leading to delays and compromised service delivery. Insufficient financial resources hindered infrastructure expansion and the timely completion of water and sanitation projects. Respondents also noted that a lack of financial planning led to frequent budget overruns, further straining available funds and limiting the company's ability to deliver quality services.

Additionally, respondents highlighted delayed government disbursements as a critical issue affecting financial resource management. Late funding disrupted project timelines, causing inefficiencies in execution and increasing overall costs. Many participants stressed that the lack of timely financial support led to inconsistent project implementation, with some initiatives being halted midway due to budget shortfalls. In response to these challenges, respondents suggested that NCWSC improve financial forecasting, streamline budget approval processes, and adopt proactive funding strategies to minimize disruptions.

Several participants also emphasized the need for increased transparency and accountability in financial management. Strengthening internal audit mechanisms, adopting digital financial tracking systems, and enhancing stakeholder engagement in budget planning were proposed as key solutions. Some respondents suggested exploring public-private partnerships (PPPs) to diversify funding sources and ensure project continuity. Leveraging financial collaborations with development agencies and private investors could help bridge budgetary gaps and facilitate long-term project sustainability.

Studies align with these findings, demonstrating that inadequate financial resource management negatively impacts project outcomes. For instance, Kamau and Muturi (2022) found that financial constraints in Kenya's public utilities significantly delayed project completion and compromised service quality. Similarly, Opiyo et al. (2023) argued that improved financial planning and oversight mechanisms enhance resource allocation efficiency, leading to better project performance. Conversely, Wanjiru and Mwangi (2021) contend that financial limitations alone do not hinder project success; instead, they highlight weak governance and mismanagement as primary contributors to inefficiencies. These perspectives underscore the importance of strengthening both financial capacity and institutional management to improve project performance at NCWSC.

4.7 Influence of project communication

This section analyzes the impact of project communication on NCWSC project performance, focusing on service delivery, stakeholder engagement, and outcomes. Table 4.9 presents the descriptive statistics.

Table 4.9 Descriptive statistics for Influence of project communication

Statements	1	2	3	4	5	Mean	SD
Project updates, meetings, or announcements are communicated frequently within our project team and to other stakeholders	6%	14%	10%	46%	24%	4.40	0.571
The feedback mechanisms in place are effective for ensuring that project members and stakeholders can provide and receive feedback on project issues	7%	14%	12%	41%	26%	4.18	0.636
The various communication channels (such as emails, meetings, and reports) used in our project are efficient for ensuring clear and consistent information flow	16%	23%	13%	30%	18%	3.59	0.917
The dissemination of important project information within our team and to external stakeholders is timely	9%	16%	12%	37%	26%	3.88	0.836
Composite mean and composite SD						4.01	0.74

N=136

The analysis of project communication's influence on Nairobi City Water and Sewerage Company (NCWSC) projects reveals that respondents generally perceive communication as a key enabler of project success. The highest-rated aspect was the frequency of project updates, meetings, and announcements (mean = 4.40, SD = 0.571), indicating strong stakeholder engagement and consistent information sharing. Feedback mechanisms were also well-rated (mean = 4.18, SD = 0.636), reflecting the perceived effectiveness of existing channels for information exchange. However, the efficiency of various communication channels received a lower mean score of 3.59 (SD = 0.917),

suggesting some concerns about the clarity and accessibility of communication methods. The timeliness of information dissemination scored a mean of 3.88 (SD = 0.836), implying moderate satisfaction. The composite mean of 4.01 (SD = 0.74) indicates an overall positive perception of project communication, though areas such as communication efficiency and timeliness require improvement.

Qualitative findings reinforced the importance of structured communication in project success. Many respondents suggested implementing more regular and predictable communication schedules, such as weekly project updates and monthly stakeholder meetings. Establishing clear timelines for updates was seen as a strategy to minimize misunderstandings, enhance coordination, and align all stakeholders with project goals. Some participants noted that inconsistent communication sometimes led to project delays and inefficiencies, emphasizing the need for a more standardized approach.

Feedback mechanisms emerged as another critical area for improvement. While respondents acknowledged the availability of feedback channels, they emphasized the need for more interactive forums where team members and external stakeholders could express concerns and contribute ideas. Suggestions included incorporating digital platforms for real-time feedback, establishing dedicated project communication officers, and conducting periodic communication audits to assess effectiveness. Respondents highlighted that fostering a culture of open dialogue would enhance collaboration, innovation, and overall project efficiency.

Additionally, respondents recommended training programs to improve communication skills among project team members. They suggested that workshops focusing on both verbal and written communication could enhance the clarity and impact of messages, reducing the risk of miscommunication. Training on using modern digital communication tools was also emphasized,

as this would streamline information sharing and ensure messages reach the intended audience effectively.

Empirical studies support these findings, demonstrating that effective communication is a vital determinant of project success. For example, Omolo and Kithinji (2022) found that structured communication frameworks in public utility projects significantly improved project coordination and stakeholder satisfaction. Similarly, Mwangi and Njoroge (2023) observed that feedback mechanisms play a crucial role in enhancing project adaptability, allowing teams to address emerging challenges promptly. However, Karanja and Opiyo (2021) argued that communication alone is insufficient; organizational culture and leadership commitment to transparent information sharing are equally critical in achieving project efficiency. These insights highlight the importance of refining communication strategies at NCWSC to ensure timely, clear, and effective information dissemination, ultimately leading to improved project performance.

4.8 Stakeholder Participation

This section assesses how stakeholder participation influences NCWSC project performance based on four opinion statements rated on a five-point scale. Table 4.10 presents the findings.

Table 4.10: Descriptive Statistics on Stakeholder participation

Statements	1	2	3	4	5	Mean	SD
Stakeholders are actively involved in the design phase of the projects, contributing their inputs and suggestions to shape the project's objectives and plans	4%	13%	14%	44%	25%	4.62	0.501
Stakeholders have meaningful opportunities to participate in the formulation of policies that affect the implementation and management of the projects	9%	13%	18%	40%	20%	4.31	0.586

Stakeholders have a significant influence on operational decisions made during the course of the project, ensuring their concerns and needs are addressed.	7%	10%	16%	43%	24%	4.41	0.516
Stakeholders are adequately represented on project committees and have a substantial role in decision-making processes	8%	13%	16%	35%	28%	3.86	0.883
Composite mean and composite SD						4.30	0.622

N=136

The analysis of stakeholder participation in Nairobi City Water and Sewerage Company (NCWSC) projects indicates that respondents generally perceive stakeholder involvement as a key factor in project success. The highest-rated aspect was stakeholder participation in the design phase (mean = 4.62, SD = 0.501), suggesting that stakeholders actively contribute their insights to shaping project objectives. Similarly, the influence of stakeholders on operational decisions was well-rated (mean = 4.41, SD = 0.516), reflecting their significant role in addressing project concerns. Stakeholder participation in policy formulation received a mean of 4.31 (SD = 0.586), indicating that respondents perceive meaningful opportunities for stakeholders to engage in project governance. However, the representation of stakeholders in project committees had a slightly lower mean score of 3.86 (SD = 0.883), pointing to a need for greater inclusion in decision-making structures. Overall, the composite mean of 4.30 (SD = 0.622) suggests a positive perception of stakeholder engagement, though improvements could be made in representation and transparency.

Respondents proposed several enhancements to stakeholder participation frameworks. One major recommendation was establishing structured engagement platforms, such as regular stakeholder

forums and consultative workshops. These initiatives would provide direct communication channels where stakeholders could contribute their perspectives and concerns, fostering inclusivity and a shared sense of project ownership. Many respondents emphasized that broadening stakeholder engagement to include community members and local organizations would enrich decision-making by incorporating diverse viewpoints.

Another key area for improvement was transparency in decision-making processes. Respondents suggested that NCWSC should clearly communicate how stakeholder input is incorporated into project planning and execution. Establishing feedback loops—such as publishing reports on stakeholder contributions and their impact—would enhance trust and encourage continued participation. Improved transparency would demonstrate that stakeholders' insights are valued, strengthening collaborative efforts in project implementation.

Capacity building also emerged as a crucial recommendation for enhancing stakeholder engagement. Respondents advocated for training programs focusing on project management, budgeting, and technical aspects of water services. By equipping stakeholders with relevant knowledge, these programs would empower them to engage more effectively in project discussions and contribute informed suggestions. Strengthening stakeholder capacity would not only improve participation but also enhance the long-term sustainability of NCWSC projects.

Empirical studies support these findings, highlighting the role of stakeholder engagement in project performance. For instance, Kamau and Wainaina (2022) found that well-structured stakeholder involvement enhances project success by ensuring alignment with community needs and expectations. Similarly, Onyango and Muturi (2023) emphasized that transparent decision-making fosters trust and accountability, leading to better project outcomes. However, studies by Karanja and Otieno (2021) caution that mere consultation without real influence over decisions may lead to

stakeholder disengagement. These insights underscore the need for NCWSC to refine its stakeholder participation strategies, ensuring meaningful engagement that enhances both project effectiveness and long-term sustainability.

4.9 Influence of monitoring and evaluation

This section presents descriptive statistics on how monitoring and evaluation (M&E) influence NCWSC project performance. Four opinion statements were rated on a five-point scale, as shown in Table 4.11.

Table 4.11: Descriptive Statistics on Influence of monitoring and evaluation

Statements	1	2	3	4	5	Mean	SD
The monitoring and evaluation systems in place effectively track and manage water leakages to minimize their impact on project performance	13%	21%	10%	35%	21%	3.99	0.701
The monitoring and evaluation processes are adequate in identifying and addressing incidents of theft and vandalism	11%	17%	18%	34%	20%	3.79	0.816
The systems for monitoring and evaluation effectively track and resolve complaints from beneficiaries	15%	24%	16%	30%	15%	3.41	0.976
Regular reviews of maintenance activities are conducted as part of the monitoring and evaluation process	8%	14%	14%	36%	28%	3.86	0.783
Composite mean and composite SD						3.76	0.819

The descriptive statistics for the influence of monitoring and evaluation reveal varying perceptions

among respondents regarding the effectiveness of these systems in the Nairobi City Water and Sewerage Company projects. The statement about effectively tracking and managing water leakages yielded a mean of 3.99 with a standard deviation of 0.701, indicating a generally positive perception. Respondents rated the adequacy of M&E processes in identifying incidents of theft and vandalism with a mean of 3.79 (SD = 0.816), suggesting a moderate level of confidence. However, the effectiveness of M&E systems in tracking and resolving beneficiary complaints received a lower mean of 3.41 (SD = 0.976), highlighting a potential area for improvement. Finally, the regularity of maintenance reviews as part of the M&E process was perceived more positively, with a mean of 3.86 (SD = 0.783). Overall, the composite mean of 3.76 (SD = 0.819) reflects a favorable but cautious outlook on the influence of M&E on project performance.

Respondents emphasized that enhancing the M&E processes in Nairobi City Water and Sewerage Company projects requires the implementation of more robust tracking systems for water leakages. Many suggested that integrating advanced technologies, such as smart meters and real-time monitoring tools, could significantly improve the identification and management of leakages. These technologies would provide timely data, enabling the company to respond swiftly to any issues before they escalate, thus minimizing water loss and improving overall service delivery. Additionally, training staff to utilize these tools effectively was highlighted as crucial to ensuring accurate data collection and analysis.

Another key area for improvement identified by respondents was the need for better community engagement in the M&E processes. Many participants felt that involving local communities in monitoring activities could enhance the detection of theft and vandalism. Community members are often the first to notice suspicious activities, so establishing feedback mechanisms where they can report incidents easily would foster a collaborative approach. This could include setting up hotlines

or mobile applications that allow residents to report issues directly to the company, thereby increasing vigilance and promoting a sense of ownership over the water resources.

Moreover, respondents pointed out that regular training for staff involved in M&E is essential to effectively address maintenance reviews and incidents of theft and vandalism. By providing ongoing education on best practices, current trends, and innovative strategies in M&E, the company can equip its workforce with the skills necessary to adapt to evolving challenges. Many suggested that periodic workshops and knowledge-sharing sessions would not only keep staff informed but also encourage a culture of proactive problem-solving within the organization.

Lastly, respondents advocated for the establishment of comprehensive evaluation frameworks that regularly assess the effectiveness of the M&E processes. Such frameworks should include key performance indicators (KPIs) specifically designed to measure the success of initiatives aimed at reducing leakages, theft, and vandalism. Additionally, conducting regular audits of these processes would allow for continuous improvement and ensure that the M&E strategies remain aligned with the company's goals. By fostering a culture of accountability and transparency, the Nairobi City Water and Sewerage Company can enhance its ability to manage resources effectively and improve service delivery to its beneficiaries.

These findings align with previous research emphasizing the critical role of M&E in project success. For instance, Mutheu et al. (2021) found that integrating smart water management technologies significantly reduced water wastage in urban utility projects. Similarly, a study by Owino and Wamalwa (2022) highlighted that participatory monitoring approaches, where communities are actively engaged in reporting system inefficiencies, enhance project sustainability. Further, a study by Kamau and Karanja (2023) emphasized the importance of continuous staff training in improving

the efficiency of public service projects through M&E. These studies reinforce the notion that well-structured M&E frameworks, combined with technological innovations and stakeholder participation, are key to improving project performance in the water sector

4.10 Diagnostic Tests

4.10.1 Test for Autocorrelation

Autocorrelation testing checks if regression model residuals are correlated over time, potentially violating the independence assumption. Identifying autocorrelation is essential to ensure accurate statistical inferences.

Table 4.11: Test for Autocorrelation

lags *(p)*	chi2	df	Prob > chi2
1	3.041	1	0.416

Source: Researcher (2025) .

The autocorrelation test results for this study show a chi-squared statistic of 3.041 with 1 degree of freedom and a probability value of 0.416. This indicates that there is no significant autocorrelation present in the residuals of the regression model, as the probability value is well above the conventional significance level of 0.05. The absence of autocorrelation suggests that the residuals are independent and not correlated over time, which is a crucial assumption for ensuring the accuracy of statistical inferences in this study. This finding enhances the reliability of the regression analysis conducted to assess the performance of Nairobi City Water and Sewerage Company projects. With independent residuals, the results can be confidently interpreted to reflect the actual relationships among variables such as financial resource management, stakeholder participation, and project communication. Overall, the absence of autocorrelation strengthens the validity of the conclusions drawn regarding the factors influencing project performance.

4.10.2 Heteroscedasticity

The Breusch-Pagan test was used to check for heteroscedasticity by assessing whether residual variance remained constant. Detecting heteroscedasticity is crucial as it impacts regression accuracy and statistical inferences.

Table 4.12: Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity		
chi2(1)	=	0.722
Prob > chi2	=	0.6312

The Breusch-Pagan / Cook-Weisberg test for heteroscedasticity in this study resulted in a chi-squared value of 0.722 with a probability value of 0.6312. Since the p-value is well above the commonly used significance threshold of 0.05, we fail to reject the null hypothesis of homoscedasticity. This indicates that there is no evidence of heteroscedasticity in the residuals of the regression model. For this study, the lack of heteroscedasticity means that the variance of the residuals remains constant across different levels of the independent variables. This is a key assumption in regression analysis, as heteroscedasticity could lead to inefficient estimates and unreliable statistical tests. The results suggest that the regression model used to examine factors like financial management, stakeholder participation, and project communication on the performance of Nairobi City Water and Sewerage Company projects is appropriately specified, ensuring that the findings and conclusions are statistically sound and reliable.

4.10.3 Multicollinearity

Tolerance tests and the Variance Inflation Factor (VIF) were used for this. These tests assess the degree of linearity between a predictor set and the criteria, which may affect the correctness of the model and the dependability of coefficient estimations.

Table 4.13: Multicollinearity

Collinearity Statistics		
Variables	**Tolerance**	**VIF**
Project Performance	0.813	1.432
Financial resource management	0.865	1.245
Influence of project communication	0.902	1.711
Stakeholder participation	0.887	1.324
Influence of monitoring and evaluation	0.896	1.226

Source: Researcher (2025)

The multicollinearity test results presented in Table 4.13 indicate that the independent variables in this study; project performance, financial resource management, project communication, stakeholder participation, and monitoring and evaluation are not highly correlated with one another. The variance inflation factors (VIF) for all variables are below the commonly accepted threshold of 10, with the highest VIF being 1.711 for project communication. This suggests that multicollinearity, which occurs when independent variables are highly correlated, is not a significant issue in this model. The tolerance values, which are the inverse of the VIF, are all above 0.1, further supporting the absence of multicollinearity concerns. These findings indicate that each variable contributes independently to the model without significant overlap.

For the purposes of this study, the lack of multicollinearity means that the regression analysis can confidently assess the impact of each variable on the performance of Nairobi City Water and Sewerage Company projects. The independent variables—financial resource management, project communication, stakeholder participation, and monitoring and evaluation—can be analyzed without concern that they unduly influence each other. This enhances the reliability of the results, allowing

for a more accurate understanding of how each factor affects project performance, which is critical for making data-driven recommendations for improving project outcomes.

4.10 Correlation Results

The study's correlation matrix, which looks at the connections between important factors such project performance, financial resource management, project communication, stakeholder engagement, and monitoring and evaluation, is shown in Table 4.14. The direction and intensity of the linear correlations between these variables may be ascertained with the use of correlation analysis. We can determine if there are positive, negative, or no correlations between the variables by looking at the correlation coefficients. This gives us information about how each element interacts with the others to affect the success of projects undertaken by Nairobi City Water and Sewerage Company.

Table 4.14: Correlation Results

		Project Performance	Financial resource management	Influence of project communication	Stakeholder participation	Influence of monitoring and evaluation
Project performance	Pearson Correlation	1				
	Sig. (2-tailed)					
Financial resource management	Pearson Correlation	.643**	1			
	Sig. (2-tailed)	.000				
Influence of project communication	Pearson Correlation	.561**	.272	1		
	Sig. (2-tailed)	.000	.310			
Stakeholder participation	Pearson Correlation	.394**	.044	.315	1	
	Sig. (2-tailed)	.000	.320	.096		

Influence of monitoring and evaluation	Pearson Correlation	.611	.355	.231	
	Sig. (2-tailed)	.000	.108	.018	.487

c. Listwise N=27

Source: Researcher (2025)

The correlation analysis reveals several significant relationships between the variables under study. Project performance showed a strong positive correlation with financial resource management ($r = .643$, $p < .01$), indicating that better financial management positively influences project outcomes. Similarly, a moderately strong positive correlation was found between project performance and the influence of project communication ($r = .561$, $p < .01$), suggesting that effective communication within the project significantly impacts its success. Monitoring and evaluation also had a significant positive correlation with project performance ($r = .611$, $p < .01$), emphasizing the importance of these processes in ensuring effective project delivery. Stakeholder participation demonstrated a weaker, yet still significant, positive correlation with project performance ($r = .394$, $p < .01$), highlighting the role of involving stakeholders in shaping and managing projects.

The correlation between financial resource management and project performance found in this study aligns with the findings of Okech and Ogola (2023), who highlighted the importance of financial management in improving project outcomes despite challenges such as corruption and inadequate institutions. Aradukunda and Sikubwabo (2024) also support this correlation, as their research demonstrated a significant positive relationship between financial resource management and project success in Kigali City, showing that proper financial control and planning greatly enhance project performance. Both studies reinforce the conclusion that effective financial resource management is a key determinant of successful project execution, which mirrors the strong correlation ($r = .643$)

found in this study.

The role of project communication in influencing project performance, as shown in this study (r = .561), is corroborated by the findings of Kibet and Senaji (2024) and Nyangena and Mungai (2024). Kibet and Senaji demonstrated that clear communication management positively impacted water project success in Elgeyo Marakwet County, emphasizing the need for proper communication channels. Researchers noted that effective communication channels led to effective relationship between staff. Similarly, Nyangena and Mungai found a strong positive relationship between communication systems and the sustainability of affordable housing projects in Nairobi, reinforcing the idea that effective communication is crucial for the long-term viability and success of projects. These studies align with the significant correlation between project communication and performance observed in this study.

The positive relationship between monitoring and evaluation (M&E) and project performance founding this study (r = .611) is supported by the work of Mutai and Musembi (2024) and Otieno and Muchelule (2024). Mutai and Musembi's research in Western Kenya highlighted the critical role that M&E planning and technical capabilities play in improving water project outcomes, while Otieno and Muchelule emphasized the importance of M&E practices in irrigation projects in Siaya County, noting a significant positive impact on project success. Both studies underline the importance of comprehensive M&E processes, which is consistent with the correlation findings in this study.

Finally, stakeholder participation's weaker, yet significant, correlation with project performance (r = .394, $p < .01$) aligns with the findings of Moreira et al. (2024) and Pandu (2024). Moreira et al. highlighted the need for multi-stakeholder engagement to ensure effective water governance in Brazil, while Pandu's research in Zanzibar identified the challenges to stakeholder participation and

its role in enhancing water project outcomes. Both studies underscore the importance of involving stakeholders to improve project success, reflecting the correlation observed in this study.

4.11 Regression Results

Table 4.15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.664[a]	.504	.339	.06442

a. Predictors: (Constant), Financial resource management, Influence of project communication, Stakeholder participation, Influence of monitoring and evaluation

Source: Researcher (2025)

The regression results in Table 4.15 show that the model has a moderately strong positive relationship between the independent variables (financial resource management, project communication, stakeholder participation, and M&E) and project performance, with an R value of 0.664. The R^2 value of 0.504 indicates that 50.4% of the variance in project performance is explained by these factors. However, the adjusted R^2 is lower at 0.339, suggesting that some predictors add limited explanatory value. The standard error of 0.06442 indicates a reasonably good fit, though there is still variance unaccounted for by the model.

Table 4.16: Analysis of Variance

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	106.15	1	106.15	197.142	.000[b]
	Residual	103.311	135	.604		
	Total	209.461	136			

a. **Dependent Variable:** Performance of projects
b. **Predictors:** (Constant), Financial resource management, influence of project communication, stakeholder participation, Influence of monitoring and evaluation

Table 4.16 presents the Analysis of Variance (ANOVA) for the regression model, indicating the relationship between the predictors—financial resource management, influence of project communication, stakeholder participation, and influence of M&E—and the dependent variable, project performance. The regression sum of squares is 106.15, while the residual sum of squares is 103.311, resulting in a total sum of squares of 209.461. This division of variance provides insight into how much of the overall variation in project performance can be attributed to the model's predictors.

The F-statistic of 197.142, coupled with a significance level (Sig.) of 0.000, suggests that the overall regression model is statistically significant at any conventional significance level (e.g., 0.01 or 0.05). This indicates a strong likelihood that at least one of the predictors has a non-zero coefficient, meaning it contributes to explaining the variance in project performance. Thus, the findings reinforce the relevance of the examined factors in understanding the factors influencing project outcomes, highlighting the effectiveness of the proposed model in capturing the essential relationships within the data.

Table 4.17: Regression Coefficients

Un-standardized Coefficients			Standardized Coefficients	t	Sig.
Model	B	Std. Error	Beta		
(Constant)	.604	0.469		1.228	0.000
Financial resource management	.583	0.451	.495	1.311	0.000
Influence of project communication	.571	0.444	.303	1.329	0.001
Stakeholder participation	.524	0.52	.226	1.203	0.000

Influence of monitoring and evaluation	.501	0.61	.216	1.022	0.000

a. Dependent variable: Performance of projects

Source: Research Findings (2024)

Table 4.17 displays the regression coefficients for the predictors affecting project performance, revealing significant relationships between each independent variable and the dependent variable. The unstandardized coefficients indicate that a unit increase in financial resource management leads to an increase of 0.583 in project performance, suggesting that effective financial management is crucial for successful project outcomes. The standardized coefficients (Beta) show that financial resource management has the highest influence on project performance ($\beta = 0.495$), followed by project communication ($\beta = 0.303$), stakeholder participation ($\beta = 0.226$), and monitoring and evaluation ($\beta = 0.216$). All predictors have a significance level (Sig.) of less than 0.05, confirming their statistically significant contribution to project performance.

The regression equation can be expressed as follows:

$$\text{Project Performance} = 0.604 + 0.583 + 0.571 + 0.524 + 0.501 + \epsilon$$

Where:

$\beta 0$ is the intercept (constant term), which equals 0.604.

$\beta 1$ is the coefficient for Financial Resource Management, which equals 0.583.

$\beta 2$ is the coefficient for Influence of Project Communication, which equals 0.571.

$\beta 3$ is the coefficient for Stakeholder Participation, which equals 0.524.

$\beta 4$ is the coefficient for Influence of Monitoring and Evaluation, which equals 0.501.

ϵ represents the error term, accounting for the variability in project performance not explained by the independent variables.

Recent studies support these findings, highlighting the importance of these factors in enhancing project outcomes. For instance, Nyaga et al. (2023) found that efficient financial management practices significantly improved project delivery in Kenyan health initiatives, echoing the role of financial resource management as a critical factor. Namasasu et al. (2024) emphasized the impact of effective communication strategies on project execution in public sector projects in Uganda, aligning with the positive influence of project communication revealed in this study. Furthermore, Karani et al. (2024) demonstrated that active stakeholder participation is essential for successful project implementation in community development initiatives, reinforcing the findings related to stakeholder engagement. Lastly, Aoko et al. (2024) reported a strong correlation between robust monitoring and evaluation practices and improved project performance in infrastructure development in Tanzania, which underscores the importance of M&E in achieving project success. These studies collectively affirm the crucial roles of financial management, communication, stakeholder participation, and M&E in driving project performance.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND STUDY RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study's findings, conclusions made and the research recommendations.

5.2 Summary of Findings

The study examined the influence of institutional factors on the performance of Nairobi City Water and Sewerage Company projects, focusing on four key objectives. Firstly, it aimed to determine how financial resource management impacts project performance, highlighting the importance of effective budgeting and allocation of funds. Secondly, the research assessed the role of project communication in enhancing performance, emphasizing the need for clear and efficient information sharing among stakeholders. Thirdly, it investigated the influence of stakeholder participation, recognizing that involving various stakeholders in decision-making processes can lead to better project outcomes. Lastly, the study sought to determine the impact of monitoring and evaluation practices on project performance, underscoring the significance of ongoing assessments to ensure projects are on track and meet their intended goals.

5.2.1 Performance of Nairobi City Water and Sewerage Company projects

The study revealed mixed outcomes in NCWSC project performance. While water service expansion was well-rated, challenges existed in project timelines, budget adjustments, and beneficiary satisfaction. Service disruptions also posed concerns, highlighting inefficiencies in financial management and stakeholder engagement. Qualitative findings emphasized the need for effective communication and collaboration, as timely information-sharing improved project execution. Respondents stressed prudent financial management, noting that proper budgeting reduced delays,

while poor planning caused inefficiencies. Community engagement in maintenance and conservation was identified as crucial for sustainability.

5.2.2 Financial Resource Management

The study revealed significant financial management challenges in NCWSC projects, with low adherence to budgets, moderate financial transparency, and weak expenditure control. Budget overruns and delayed disbursements frequently hindered project execution. Qualitative findings emphasized insufficient government funding, which led to service delays and incomplete infrastructure projects. Respondents highlighted the need for improved financial forecasting, timely budget approvals, and diversified funding sources such as PPPs. Strengthening audit mechanisms and enhancing financial transparency were suggested to improve resource management. Correlation results confirmed a strong positive relationship ($r = .643$, $p < .01$) between financial resource management and project performance, reinforcing the need for strategic financial oversight.

5.2.3 Influence of project communication.

The study found that project communication significantly influenced the performance of NCWSC projects, with frequent updates and effective feedback mechanisms enhancing stakeholder engagement. However, concerns emerged regarding the efficiency and timeliness of communication channels, indicating areas for improvement. Qualitative findings emphasized the need for structured communication schedules, interactive feedback forums, and better digital tools to streamline information flow. Respondents suggested regular updates, dedicated communication officers, and targeted training programs to improve clarity and reduce miscommunication. Strengthening communication strategies was seen as essential for enhancing coordination, minimizing project delays, and ensuring successful implementation of water and sanitation initiatives. Correlation

analysis confirmed a significant positive relationship ($r = .561$, $p < .01$)between effective communication and project performance, underscoring its critical role in successful project execution.

5.2.4 Influence of Stakeholder Participation

The study found that stakeholder participation significantly influenced NCWSC project performance, particularly in the design phase, policy formulation, and operational decision-making. However, concerns emerged regarding stakeholder representation in project committees, indicating a need for greater inclusion. Respondents recommended structured engagement platforms, such as regular forums and consultative workshops, to enhance transparency and inclusivity. Establishing clear feedback mechanisms and publishing reports on stakeholder contributions were also suggested to build trust and accountability. Although weaker than other variables, stakeholder participation ($r = .394$, $p < .01$) still shows a significant positive correlation with project performance, reinforcing the value of involving stakeholders in decision-making and implementation.

5.2.5 Influence of Monitoring and Evaluation

The analysis of M&E at Nairobi City Water and Sewerage Company shows mixed perceptions regarding its effectiveness in project performance. While tracking and managing water leakages received a positive mean score of 3.99, addressing theft and vandalism was rated lower at 3.79, and resolving beneficiary complaints scored even less at 3.41. To enhance M&E processes, respondents suggested integrating advanced technologies, such as smart meters, and emphasized the need for community engagement in monitoring activities. Regular training for M&E staff was deemed essential for adapting to evolving challenges. Lastly, establishing comprehensive evaluation frameworks with key performance indicators (KPIs) was recommended to ensure continuous

improvement and enhance overall service delivery. A strong positive correlation ($r = .611$, $p < .01$) signifies that robust monitoring and evaluation mechanisms play a crucial role in ensuring project success.

5.2.6 Inferential Statistics

The inferential statistics in this study revealed several significant correlations between project performance and key factors such as financial resource management, project communication, stakeholder participation, and monitoring and evaluation. A strong positive correlation was identified between project performance and financial resource management ($r = .643$), indicating effective financial management positively influences project outcomes. Project communication ($r = .561$) and monitoring and evaluation ($r = .611$) also showed significant positive correlations with project performance. Stakeholder participation had a weaker, yet significant, correlation ($r = .394$) with project performance. The regression analysis indicated that the model accounted for 50.4% of the variance in project performance, with financial resource management being the most influential predictor. All examined factors were statistically significant in contributing to project performance outcomes.

5.3 Conclusion

The study concludes that the performance evaluation of NCWSC projects revealed a generally positive perception among respondents, particularly regarding water service coverage. However, concerns were raised about project timelines and budget adherence, highlighting areas needing improvement to enhance overall project efficiency.

The study concludes that the assessment of financial resource management indicated significant challenges, particularly in budget adherence and reliability of financial reports.

The study concludes that the analysis of project communication showed a positive influence on project performance, especially regarding frequent updates and effective feedback mechanisms.

The study concludes that stakeholder participation was generally viewed positively, with strong involvement in project design and policy formulation.

The study concludes that mixed perceptions were found regarding monitoring and evaluation effectiveness, particularly in addressing theft and beneficiary complaints.

5.4 Recommendations

The study's recommendations are as follows;

1. The NCWSC Management should enhance project efficiency by implementing regular training programs for staff on effective communication and collaboration practices. This initiative should focus on improving adherence to project timelines and budget compliance.
2. The organization should improve financial resource management by increasing transparency in budgeting processes and actively engaging private sector partners. This approach can help mitigate challenges related to delayed disbursements and enhance overall project performance.
3. The National Water Harvesting and Storage Authority should develop and implement comprehensive monitoring and evaluation frameworks with clear key performance indicators (KPIs). This initiative will ensure continuous improvement in project performance, particularly in addressing issues like theft, vandalism, and beneficiary complaints.
4. The stakeholder engagement committees should foster structured engagement frameworks that allow for greater stakeholder participation in project decision-making processes. This effort should aim to empower community members and enhance transparency, particularly

in project design and policy formulation.

5.5 Recommendations for Further Studies

More research on the following topics is suggested by the researcher;

Future research should investigate various resource mobilization strategies, including public-private partnerships, community fundraising initiatives, and innovative financing models. This approach will provide a comprehensive understanding of effective practices across different contexts.

Conduct comparative studies between organizations that successfully implement resource mobilization strategies and those that face challenges. This will help identify best practices and factors contributing to success, enabling organizations to learn from each other.

REFERENCES

Adhan, H., & Mutuku, M. (2023). The influence of staff supervision and evaluation skills on community-based water projects' efficacy in Kenya's Mandera County. JSSOC 11(2), 302-307.

Ahinsah-Wobil, D. I. (2024). The Effect of Ghanaian Public Financial Management Laws on Project Continuity. *Available at SSRN 4796109*.

Aradukunda, A., & Sikubwabo, C. (2024). The Effect of Resource Management on Regulatory Institution Project Success: A Case Study of Kigali City (2018– 2022). African Journal of Empirical Research, *5*(2), 411-425.

Asamoah, G. E. & Andam, E. T. (2019). Ghanaian construction project success criteria are impacted by project tracking and assessment practices. Built Environment Project and Asset Management, 9(3), 364-382.

Awino, J. O., & Mungai, A. W. (2024). Managing Stakeholders and Improving Irrigation Project Efficiency in Kenya's Kisumu County. *IJSSME*, *8*(1).

Bulle, M. A., & Muchelule, Y. (2024). Collaborative Practices for Irrigation Project Execution Monitoring and Evaluation in Wajir County, Kenya. *IJSSME*, *8*(1).

Eysimkele, A. R., and B. M. Kimwaki (2023). In Kenya's arid and semi-arid regions, enhancing sustainable water access requires the mobilization of financial resources.. International Journal of Economy and Innovative Technologies, 1 (41).

Farouk, A. M., Radzi, A. R., Romali, N. S., Farouk, M., Elgamal, M., Hassan, R., and Rahman, R. A. (2024). Performance metrics for evaluating the execution of ecological management strategies in water projects. Sustainability, *16*(8), 3146.

Heikoop R., Verbraeken R., Wahyudi S. I., & Adi H. P. (2024). Stakeholder participation in urban water administration: a SWOT evaluation of the Banger polder system in Semarang. Environmental Challenges, 14, 100831.

K. J. KIPCHIRCHIR (2022). The efficiency of road development initiatives and resource management: a case study of Kenya's National Highways Authority in Nairobi City

County.

Kamau, R., Njeri, M., and Gitau, J. (2023). Community involvement and Stakeholders Engagement in Nairobi Water Projects. Journal of Environmental Policy and Planning, 29(3), 156–172.

Kibet, E. K., & Senaji, T. (2024). Strategies for Project Planning and Water Project Performance in Elgeyo Marawet County, Kenya. *IJSSME*, *8*(1).

Liu Y., Kong C., Zhang Y., Liu G., Huang J., Li G., and Du S. (2024). Monitoring and evaluating the implications of the Grain for Green Project on the Loess Plateau: A case study from Wuqi County, China. International Journal of Applied Earth Observation and Geoinformation, 132: 104006.

Maomond, B. O., & Kyule, A. (2024). MT Kenya Region, Kenya: Public Involvement and Water Project Implementation. *IJSSME*, *8*(4).

Masunga, M (2023). THE Main Variables Influencing the Performance of Water Building Projects (Doctoral dissertation, Institute of Accounting, Arusha) (IAA)).

Masunga, M. (2023). *THE Key Factors Affecting the Success of Water Construction Projects* (Doctoral dissertation, Institute of Accountancy Arusha (IAA)).

Mohamud, A. A., & Nyandoro, K. (2024). Influence of monitoring and evaluation practices on the sustainability of donor-funded community water projects in Kismayu, Somalia. Editon Consortium Journal of Economics and Development Studies, 6(1), 8-20.

Moreira, F. D., Fonseca, P. R. S., Miranda, R. M., Oliveira da Costa, L., & Mejias Carpio, I. E. (2024). Stakeholder engagement for inclusive water governance in a rural community in Brazil. *Frontiers in Water*, *6*, 1378514.

Moreno, S. L. (2024). Analysing Spanish water management firms' economic performance and environmental sustainability from a technological and quantitative standpoint (2018–2022). *European Public & Social Innovation Review*, *9*, 1-22.

Morrison, J., Odhiambo, T., & Karanja, S. (2023). Infrastructure and Maintenance

Challenges in Urban Water Supply Systems: A Case Study of Nairobi. Journal of Urban Development, 45(2), 112-130.

Mpuya, G. J. (2024). The Impact of Budgetary Management on Water Availability for Residential Use in Tanzania's Pangani Basin. *International Journal of Management, Accounting & Economics*, *11*(6).

Musembi, A. K., and G. K. Mutai (2024). The performance of water projects in Kenya's Western Region as a result if M&E. Social Sciences Management and Entrepreneurship International Journal (IJSSME), 8(2).

Ngugi, M., & Mwaura, A. (2023). Governance and Financial Management Issues in Nairobi's Water Sector. International Journal of Water Resources Management, 37(4), 211-223.

Nyangena, N. K., & Mungai, A. M. W. (2024). PROJECT COMMUNICATIONS MANAGEMENT AND SUSTAINABILITY OF AFFORDABLE HOUSING PROGRAMMES IN NAIROBI CITY COUNTY, KENYA. International Journal of Social Sciences Management and Entrepreneurship (IJSSME), 8(2).

Okech, B. B., & Ogola, N. D. (2023). Public financial management in Africa. In *Handbook of Public Management in Africa* (pp. 131-150). Edward Elgar Publishing.

Omolo, C. A., & Ndeto, C. (2023). Funded water performance as a result of financial management. *International Journal of Management and Business Research*, *5*(1), 371-382.

P. M. Kariuki (2022). Monitoring and evaluation's impact on the effectiveness of water quality and sanitation improvement initiatives in Nakuru City (Egerton University master's thesis)

Pandu, A. M. (2024). *Stakeholders Participation in Water Resources Projects Performance in South Unguja District, Zanzibar* (Doctoral dissertation, The Open University of Tanzania).

Pieterse, B., Agyekum, K., Manu, P., Mohandes, S. R., Cheung, C., & Yunusa-Kaltungo, A.

(2024). Examining critical project management skills for successful delivery of major maintenance projects: Insights from the United Kingdom energy sector. *Engineering, Construction and Architectural Management*, *31*(4), 1556-1584.

Putri, Y. & Syarifuddin, R. (2019). Effective Communication in Support of the Performance Monitoring System: An Investigation of an Indonesian Private College. Advances in Social Science, Education and Humanities Research, 151(9): 256- 272

Rotich and Emmy Chelangat. Water development initiatives are being planned and implemented in Bomet County, Kenya. Diss. JKUAT-COHRED, 2024.

Rotich, E. C. (2024). Project Planning and Implementation of Water Construction Projects in Bomet County, Kenya (Doctoral dissertation, JKUAT-COHRED).

Rukunga, E. M., & Pedo, M. (2024). PROJECT STAKEHOLDER MANAGEMENT IMPERATIVES AND IMPLEMENTATION OF PROJECTS BY WATER WORKS DEVELOPMENT AGENCIES. International Journal of Social Sciences Management and Entrepreneurship (IJSSME), 8(3).

S. A. Livingston, J. Carlson, and B. Bridgeman. (2018). Test reliability fundamental ideas. Research Memorandum No. RM-18-01). Princeton, NJ: Educational Testing Service, 8.

Siedlecki, S. L. (2020). Understanding descriptive research designs and methods. Clinical Nurse Specialist, 34(1), 8-12.

Wambui, G., Nyambura, M., and Maina, L. (2023). Urbanization's Effects on sanitation and water supply in Nairobi County. African Water Journal, 18(1), 82–111.

APPENDICES

Appendix I: Introduction Letter

INTRODUCTION LETTER

Kerecha Maranga Lawrence,

TO WHOM IT MAY CONCERN

Ref: Academic Research

Dear Participant,

I, Kerecha Maranga Lawrence, am a graduate student at Mount Kenya University, studying for a Master of Science in Project Management and Planning within the Department of Economics, School of Business and Economics. My registration number is MSCPM/2022/45366. I'm undertaking research for my degree program on the INFLUENCE OF INSTITUTIONAL FACTORS ON THE PERFORMANCE OF NAIROBI CITY WATER AND SEWERAGE COMPANY PROJECTS, KENYA.

Your assistance will go a long way toward guaranteeing this project's success. I want to thank you in advance for your thoughts and time. Your identity or the position you hold won't ever be mentioned due to confidentiality reasons. The information gathered is only used for academic research.

Any help provided will be gratefully received.

Thank you.

Kerecha Maranga Lawrence

MSCPM/2022/45366

APPENDIX II: CONSENT FORM

Informed Consent (Sample)

I'm Kerecha Maranga Lawrence, and I attend Mount Kenya University for my master's degree. "INFLUENCE OF INSTITUTIONAL FACTORS ON THE PERFORMANCE OF NAIROBI CITY WATER AND SEWERAGE COMPANY PROJECTS, KENYA" is the title of the study I'm doing. A survey instrument has been developed to gather information on the same".

Voluntarism

You are not going to be victimized if you choose not to participate in this study.

Discomforts and Risks

You might find some of the questions awkward or humiliating since they deal with private matters. In the event that this occurs, you have the option to decline to respond to these enquiries.

Confidentiality

The surveys will remain confidential and be utilised exclusively for educational objectives.

Participant's statement

I am willing to take part in the study.

Name of Participant:

Signature or Thumbprint Date:

_____ _____

Name of Representative/Witness (where necessary) Relationship to Subject

Signature or Thumbprint

Date: 25/7/2024

Researcher

APPENDIX III: QUESTIONNAIRE FOR NAIROBI CITY WATER AND SEWERAGE COMPANY (NWSC) EMPLOYEES.

SECTION 1: Background information

Gender

[ ] Male [ ] Female

Age

[ ] Below 24 **[**] 25-35 [ ] 36-45 [ ] 46-55 [ ] 56-59 [ ] Above 60

Years of Experience:

Less than 1 year

1-3 years

4-6 years

7-10 years

More than 10 years

Level of education

No education [ ] Primary [ ] Secondary [ ] Certificate [ ] Diploma [ ] Undergraduate [ ] Masters [ ] PHD

SECTION B: PERFORMANCE OF NAIROBI CITY WATER AND SEWERAGE COMPANY PROJECTS

This questionnaire aims to assess the performance of water projects based on various critical factors. Your feedback will provide valuable insights into how effectively these projects have been executed and their impact on the community.

Scale: Strongly Disagree represented by 1: Disagree represented by 2: Neutral represented by 3: Agree represented by 4: Strongly Agree represented by 5

	Statement	**1**	**2**	**3**	**4**	**5**
(a)	The project has significantly increased the area covered by water services					
(b)	The project team adheres to the timeline for each milestone.					
(c)	Budgetary adjustments for water and sanitation projects, if needed, are minimal and justified					
(d)	Beneficiaries are satisfied with the water services provided by the company					
(e)	There are minimal disruptions in the water supply					
(f)	The company includes measures to ensure the sustainability of water service					

In your opinion, what are the key factors that have most significantly impacted the performance of the water projects in terms of service coverage, timely completion, cost management, beneficiary satisfaction, quality of service, and sustainability?

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.....

Section C: Financial Resource Management and Performance of Water Projects

	Statement	5	4	3	2	1
(a)	The projects consistently adheres to the allocated budget					
(b).	The financial reports for the water and sanitation projects are accurate and reliable					
(c)	The water projects complies with all audit requirements and recommendations					
(e)	Expenditure is managed effectively to avoid cost overruns					

In your opinion, what are the most significant challenges and opportunities in managing financial resources?

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SECTION D: Influence of Project Communication

	Statement	5	4	3	2	1
(a)	Project updates, meetings, or announcements are communicated frequently within our project team and to other stakeholders.					
(b).	The feedback mechanisms in place are effective for ensuring that project members and stakeholders can provide and receive feedback on project issues					
(c)	The various communication channels (such as emails, meetings, and reports) used in our project are efficient for ensuring clear and consistent information flow					
(d).	The dissemination of important project information within our team and to external stakeholders is timely					

In your view, what improvements can be made to the communication processes in NCWSC projects to enhance project performance?

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Section E: Stakeholder Participation

	Statement	5	4	3	2	1
(a)	Stakeholders are actively involved in the design phase of the projects, contributing their inputs and suggestions to shape the project's objectives and plans					
(b).	Stakeholders have meaningful opportunities to participate in the formulation of policies that affect the implementation and management of the projects					
(c)	Stakeholders are adequately represented on project committees and have a substantial role in decision-making processes.					
(d).	Stakeholders have a significant influence on operational decisions made during the course of the project, ensuring their concerns and needs are addressed.					

How do you think stakeholder participation can be improved in the NCWSC?

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Section E: Influence of M&E

	Statement	5	4	3	2	1
(a)	The monitoring and evaluation systems in place effectively track and manage water leakages to minimize their impact on project performance					
(b).	The monitoring and evaluation processes are adequate in identifying and addressing incidents of theft and vandalism to protect project assets and ensure smooth operation					
(c)	The systems for monitoring and evaluation effectively track and resolve complaints from beneficiaries					
(d).	Regular reviews of maintenance activities are conducted as part of the monitoring and evaluation process to ensure that projects are maintained properly and continue to perform effectively.					

In what ways can the monitoring and evaluation processes be enhanced to better address issues such as leakages, theft, vandalism, and maintenance reviews in NCWSC projects?

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Thank you for your Participation

APPENDIX IV: ETHICAL REVIEW COMMITTEE APPROVAL

Mount Kenya University

REF: MKU/ISERC/4105 Date: 30 August 2024
TO: KERECHA MARANGA LAWRENCE
REG: MSCPM/2022/45366(Amended)

Dear Sir/Madam,

RE: INFLUENCE OF INSTITUTIONAL FACTORS ON THE PERFORMANCE OF NAIROBI CITY WATER AND SEWERAGE COMPANY PROJECTS, KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2973**. The approval period is **07/08/2024 - 06/08/2025**.

This approval is subject to compliance with the following requirements:

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

MOUNT KENYA UNIVERSITY
ETHICS REVIEW COMMITTEE
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THIKA

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Email: info@mku.ac.ke, Web: www.mku.ac.ke

APPENDIX V: RESEARCH ACKNOWLEDGEMENT LETTER

NAIROBI CITY WATER & SEWERAGE COMPANY LTD.
KAMPALA RD, P. O. Box 30656-00100, Nairobi, Kenya
Tel: +254 703 080 000
Email: info@nairobiwater.co.ke
www.nairobiwater.co.ke

NCWSC/HR/TRG.27/VOL.8/MMM/bmi

2nd October, 2024

Kerecha Maranga Lawrence
Mount Kenya University
Po Box
Nairobi,
Cell: 0726269164
Email: lawrencemaranga90@gmail.com
Pf No. 02433

Dear Lawrence

RE: RESEARCH – INFLUENCE OF INSTITUTIONAL FACTORS ON THE PERFOMANCE OF NAIROBI CITY WATER AND SEWARAGE COMPANY PROJECTS, KENYA

Reference is made to your letter dated 23rd September, 2024 on the above-mentioned subject.

Approval is hereby granted to you to collect data from **2nd October, 2024** to **1st November, 2024** for your Research project entitled **"influence of institutional factors on the performance of Nairobi city water and sewerage company projects, Kenya."**

The Human Resource Manager and Regional Managers from all the nine (9) regions will assist you with the relevant Data/information in relation to your project.

All findings/information on Company matters should be accorded utmost confidentiality.

Please note upon completion, you will be expected to submit a copy of the findings to the office of the undersigned.

By a copy of this letter the following Officers are hereby informed accordingly.

I. Human Resource Manager
II. Regional Manager
III. Research and Development Manager- National Water Offices

N.B: Kindly ensure you observe the Government directives on Covid -19 pandemic.

Yours Sincerely,

Eng. Nahason Muguna
Managing Director

APPENDIX VI: RESEARCH PERMIT LETTER

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **179518**

Date of Issue: **12/September/2024**

RESEARCH LICENSE

This is to Certify that Mr.. Lawrence Maranga Kerecha of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Influence of institutional factors on the performance of Nairobi City Water and Sewerage Company projects, Kenya. for the period ending : 12/September/2025.

License No: **NACOSTI/P/24/39773**

179518

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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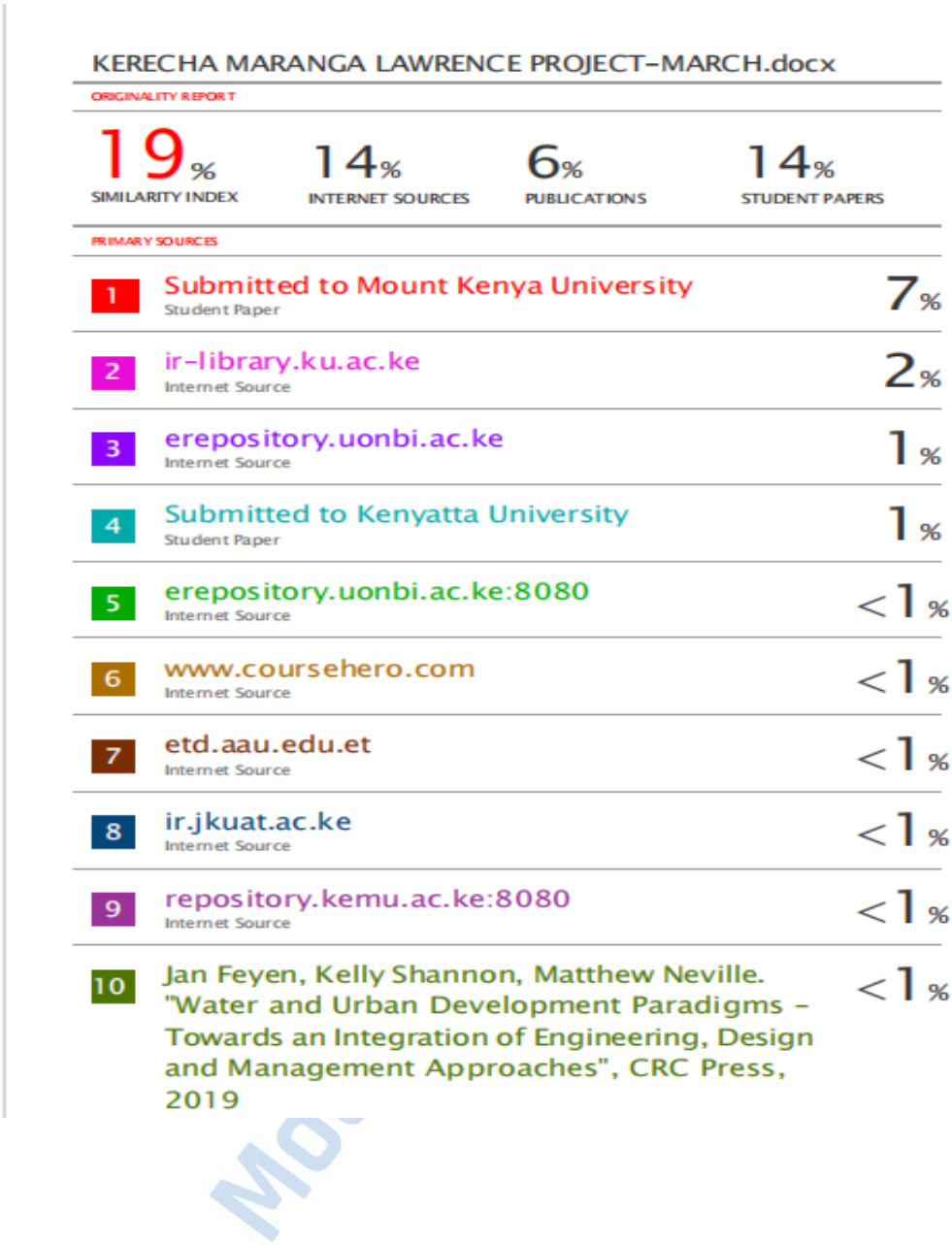
See overleaf for conditions

APPENDIX VII: TURNITIN REPORT



KERECHA MARANGA LAWRENCE PROJECT-MARCH.docx

ORIGINALITY REPORT

19%	14%	6%	14%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

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