IMPACT OF MONITORING AND EVALUATION SYSTEM ON SUSTAINABILITY OF WATER AND SANITATION PROJECTS IN TANZANIA: A CASE OF MBEYA WATER SUPPLY AND SANITATION AUTHORITY

CHRISTIAN CHRIFORD NKWAMA

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Open University of Tanzania a dissertation titled; "**Impact of Monitoring and Evaluation System on Sustainability of Water and Sanitation Projects in Tanzania**" in partial fulfilment of the requirements for degree of Masters of Arts in Monitoring and Evaluation (MAME).

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Dr. Felician Mutasa

(Supervisor)

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Date

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Dr. Noel Matemba

(Supervisor)

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Date

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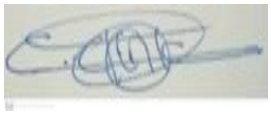
DECLARATION

I, **Christian Chriford Nkwama,** declare that the work presented in this Dissertation is original. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfillment of the requirement for the Degree of Master of Art in Monitoring and Evaluation (MA.M&E).



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DEDICATION

My family has provided me with the initiation to education, and hence, this work is dedicated to them. Without their love and hard-earned efforts which they used in ensuring I accomplished my education I would have been a different person.

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The completion of this study owes much to the guidance, support, and constructive critiques of many individuals. While it is difficult to mention everyone by name, I extend my sincere appreciation to each and every one of them for their invaluable contributions. First and foremost, I would like to express my deep gratitude to my supervisors, Dr. Felician Mutasa and Dr. Noel Matemba for their unwavering support, motivation, and insightful feedback throughout the entire process of completing this study. Their guidance was instrumental in the successful completion of my work.

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ABSTRACT

The study assesses the impact of Monitoring and Evaluation (M&E) systems on the sustainability of water and sanitation projects, with a specific focus on the Mbeya Water Supply and Sanitation Authority (Mbeya WSSA) in Tanzania. The key objectives were; To evaluate the role of key M&E components in promoting the sustainability of water and sanitation projects in Mbeya., investigate the influence of regular M&E cycles on operational functionality and maintenance, and identify the economic, health, environmental, and social benefits derived from sustainable water and sanitation projects. The study employed a case study design, targeting 105 operational staff involved in M&E activities at Mbeya WSSA. Data were collected through structured questionnaires and analyzed using descriptive and inferential statistics, including Pearson correlation analysis. The findings reveal that effective M&E practices, particularly those emphasizing stakeholder engagement, capacity building and performance monitoring, significantly enhance the sustainability of water and sanitation projects. The adoption of a result-oriented approach was also shown to positively impact project outcomes, although challenges such as budget overruns and delays were identified. The study highlighted the extensive socio-economic and health benefits of sustainable water projects, including improved health outcomes, economic growth, and social equity. The study concludes that robust M&E systems are vital for the sustainability of water and sanitation projects in Mbeya. It recommends strengthening M&E frameworks, adopting a result-oriented approach, ensuring continuous M&E activities, and enhancing stakeholder engagement.

Keywords: *Monitoring and Evaluation, Sustainability, Project, Water and Sanitation Projects.*

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LIST OF ABBREVIATIONS

GDP	Gross Domestic Product
JMP	Joint Monitoring Programme for Water Supply, Sanitation, and Hygiene
M&E	Monitoring and Evaluation
Mbeya WSSA	Mbeya Water Supply and Sanitation Authority
NGO	Non-Governmental Organization
RBM	Results-Based Management
SPSS	Statistical Package for the Social Sciences
UNEP	United Nations Environment Programme
UNICEF	United Nations International Children's Emergency Fund
URT	United Republic of Tanzania
WASH FIT	Water and Sanitation for Health Facility Improvement Tool
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Chapter Overview

This chapter introduces the study, providing a foundation by presenting the background and context of the problem being investigated. It emphasizes the significance of Monitoring and Evaluation (M&E) systems in ensuring the sustainability of water and sanitation projects, particularly in developing countries like Tanzania. The chapter includes the statement of the research problem, objectives, research questions, and the significance of the study. Additionally, it defines the scope of the research, highlighting its geographical focus and the specific elements of M&E systems under investigation. Finally, it presents the organization of the study, offering a roadmap for the structure of the entire research.

1.2 Background to the Study

Monitoring and Evaluation (M&E) is a crucial component of project implementation, as it helps to assess the progress and outcomes of programs. M&E systems can significantly improve performance and effectiveness in achieving program goals (Mleke, 2020). According to the World Bank (2023), more than 978 million people globally lack access to reliable and clean water sources, with the situation being even more dire in Africa, where over 500 million people do not have access to clean drinking water (World Bank, 2021).

The lack of access to water presents a significant economic burden to households in developing countries (African Development Fund, 2022). Water and sanitation projects are vital as they contribute to the provision of essential resources for

sustaining human life, ecological systems, and economic and social growth. Burke (2023) argues that water and sanitation projects must be carried out in an organized manner using available resources to achieve set objectives. Sustainability, defined by the World Bank (2020) as "advancements that meet the essential needs of today's generation without compromising future generations' ability to meet their own needs," is a key aspect of these projects.

Monitoring and evaluating the sustainability of water and sanitation projects in Tanzania is essential to ensure that the projects are effective, efficient, and have a lasting impact on the community (UNICEF, 2021). Statistics show that 68% of the population in Tanzania has access to improved water sources, while only 28% have access to improved sanitation facilities (UNICEF, 2021). Additionally, 10% of the population practices open defecation (JMP, 2021), and only 43% of water sources meet national drinking water quality standards (WHO, 2022). The sustainability of these projects is often compromised by inadequate maintenance, lack of community involvement, and funding constraints (URT, 2022).

The importance of M&E in ensuring the effectiveness of project implementation is widely acknowledged (Matyoko, 2019; Nguliki, 2018). However, inadequate M&E systems in Tanzania have hindered the sustainability of water supply and sanitation projects (Mgoba, et al., 2020; World Bank, 2021). Only 26% of water supply systems in Tanzania are functioning properly, highlighting the need for improved M&E processes (World Bank, 2021). Moreover, WaterAid Tanzania (2018) reports that only 10% of water supply and sanitation projects in the country have adequate resources allocated for monitoring and evaluation. A report by the Tanzanian

Ministry of Water and Irrigation found that over 70% of M&E staff lack the necessary skills and training to carry out their duties effectively (Ministry of Water and Irrigation, 2021), further exacerbating the unsustainability of these projects.

The Mbeya Water Supply and Sanitation Authority (Mbeya WSSA), established in 1998 under the Water Works Act Cap 272, plays a vital role in addressing water and sanitation challenges in Mbeya, Tanzania (URT, 2022). To ensure the effectiveness of their projects, Mbeya WSSA recognizes the importance of M&E, which involves actively engaging stakeholders, particularly residents directly impacted by project outcomes. However, Mbeya WSSA faces significant challenges in M&E of water supply and sanitation projects (Bulti & Yutura, 2023; Ntambara et al., 2023).

The International Water Management Institute revealed that less than 30% of water supply and sanitation projects in Mbeya actively engage with local communities and stakeholders in M&E activities (International Water Management Institute, 2021). Moreover, only 15% of these projects utilize M&E data to inform project sustainability (World Bank, 2021). Tanzania's National Five-Year Development Plan acknowledges the problem of inadequate M&E systems, citing limitations in human resources, budget allocation, and data collection methods (URT, 2021). These challenges contribute to the unsustainability of water supply and sanitation projects in Mbeya. Further evidence and a situational analysis of M&E and sustainability issues in Mbeya will be provided to reinforce the research problem.

1.3 Statement of the Problem

The report by the World Bank (2019) indicates that the sustainability of water projects falls below 35%, with many of the sustained projects experiencing more

failures than successes, particularly in developing countries. In Tanzania, the sustainability of water and sanitation projects falls below 59%, with water projects in Tanzania rated as moderately sustainable (World Bank, 2019).

Despite the implementation of M&E processes in water and sanitation projects in Mbeya, the sustainability of these projects remains questionable, similar to the situation in other Tanzanian cities. The government has taken several steps to address the problem of inadequate M&E systems, including the implementation of the Water Sector Development Program (URT, 2021), strengthening M&E frameworks, providing training and capacity-building, collaborating with development partners, and promoting community engagement and participation (Ministry of Water and Irrigation, 2022). However, the problem remains alarming due to a lack of rigorous assessment of how M&E activities impact the long-term success and effectiveness of water and sanitation projects.

Previous research on M&E in water and sanitation projects, such as studies by Patel and Gupta (2015) from India, Oladipo & Oyediran (2016) from Nigeria, Medlicott et al. (2016) from Ghana, Oli (2023) from Ethiopia, and Hancharou & Danilenko (2018) from Belarus, has not adequately addressed the specific context of Tanzania, particularly the Mbeya region. These studies have examined various aspects of M&E in different countries, but the findings may not be directly applicable to the Tanzanian context. A gap exists in understanding how the M&E systems implemented by Mbeya WSSA impact the sustainability of water and sanitation projects in the region.

Although some studies in Tanzania have investigated the effectiveness of participatory monitoring and evaluation (PM&E) on community-based water projects (Mgoba, et al., 2020) and assessed the challenges in M&E of Water, Sanitation, and Hygiene (WASH) programs (Kaba, et al., 2017), these studies did not focus on the impact of M&E systems on the sustainability of projects in Mbeya. Therefore, this study aims to fill this gap by assessing the impact of M&E systems on the sustainability of water and sanitation projects in Mbeya. The research gap will be addressed by providing evidence on the situational analysis of M&E and sustainability issues in Mbeya and identifying the value added by this study to the existing body of knowledge.

1.4 Research Objectives

1.4.1 General Objective

The main objective of this study is to assess the impact of Monitoring and Evaluation (M&E) systems on the sustainability of water and sanitation projects in Tanzania, with a specific focus on the Mbeya Water Supply and Sanitation Authority.

1.4.2 Specific Objectives

i. To evaluate the role of key M&E components in promoting the sustainability of water and sanitation projects in Mbeya.
ii. To analyze the impact of a result-based M&E approach on the sustainability of water and sanitation projects in Mbeya.
iii. To investigate the influence of regular M&E cycles on the operational functionality and maintenance of water and sanitation facilities in Mbeya.

iv. To identify and evaluate the key economic, health, environmental, and social benefits derived from the sustainability of water and sanitation projects in Mbeya.

1.5 Research Questions

i. How do key M&E components contribute to the sustainability of water and sanitation projects in Mbeya?

ii. What is the impact of a result-based M&E approach on the sustainability of water and sanitation projects in Mbeya?

iii. How do regular M&E cycles influence the operational functionality and maintenance of water and sanitation facilities in Mbeya?

iv. What are the key economic, healths, environmental, and social benefits derived from the sustainability of water and sanitation projects in Mbeya**?**

1.6 Significance of the Study

The findings of this study hold significance for various stakeholders. For Mbeya WSSA, the research will offer valuable insights into areas for enhancing their monitoring and evaluation (M&E) practices, enabling them to devise targeted strategies to fortify their M&E systems and thereby enhance the efficiency, effectiveness, and sustainability of water and sanitation projects. Policymakers at both national and regional levels in Tanzania stand to benefit from understanding the challenges confronting Mbeya WSSA, as it can aid in the formulation of supportive strategies to bolster M&E capabilities within water authorities, potentially entailing resource provision for training, enhancement of data collection methods, and adequate budget allocation for M&E activities.

Similarly, development agencies funding water and sanitation projects in Tanzania can leverage the research findings to prioritize M&E capacity building within the supported authorities. Additionally, the academic community will find value in this study as it contributes to the existing knowledge base on M&E practices in development projects, particularly within the water and sanitation sector, potentially shaping future research endeavors aimed at strengthening M&E systems for enhanced project outcomes.

1.7 Scope of the Study

The scope of this study focuses on assessing the impact of Monitoring and Evaluation (M&E) systems on the sustainability of water and sanitation projects in Tanzania, with a specific case study of the Mbeya Water Supply and Sanitation Authority (Mbeya WSSA). The study examines various aspects of M&E practices, including stakeholder engagement, result-oriented approaches, and the regularity of M&E activities. The research is limited to Mbeya WSSA's completed projects and involves 105 staff members directly responsible for M&E functions. This scope ensures a targeted exploration of M&E effectiveness in a real-world context, focusing on the specific factors that influence the long-term success of water and sanitation projects.

1.8 Organization of the Study

This study is organized into five chapters. Chapter One introduces the background of the study, including the research problem, objectives, research questions, significance, scope, and organization. Chapter Two provides a review of relevant literature, discussing theoretical and empirical studies on M&E and sustainability, as

well as identifying research gaps. Chapter Three outlines the research methodology, including the research design, data collection methods, sampling procedures, and analysis techniques. Chapter Four presents the findings and analysis of the data collected, correlating them with the study's objectives. Chapter Five concludes the study by summarizing the key findings, providing conclusions, offering recommendations, and suggesting areas for future research.

CHAPETER TWO

LITERATURE REVIEW

2.1 Chapter Overview

The literature review chapter is pivotal in research, providing a thorough analysis of existing scholarship to inform and shape the study's direction. It encompasses defining key terms, reviewing theoretical and empirical literature, identifying research gaps, and constructing a conceptual framework to guide the research process effectively.

2.2 Definition of Key Terms and Concepts

2.2.1 Monitoring and Evaluation

Monitoring and Evaluation (M&E) is a systematic process used to assess the effectiveness and progress of initiatives, programs, and projects. In-depth Research Institute, (2023) emphasizes its role in data collection, analysis, and interpretation to understand these aspects. This information is crucial for decision-making, allowing for evidence-based choices throughout a project's lifecycle. The World Bank, (2024) highlights M&E as a continuous process for tracking progress towards objectives and project performance.

2.2.2 Sustainable Water and Sanitation Projects

Sustainable Water and Sanitation Projects refer to initiatives aimed at ensuring universal access to clean, reliable water and sanitation services. According to the UNEP, (2023), these projects are crucial for health, well-being, poverty reduction, economic growth, and environmental sustainability.

2.3 Theoretical Literature Review

2.3.1 Theory of Change

The Theory of Change framework, proposed by Carol Weiss in 1995, provides a structured approach to understanding the causal relationships between inputs, activities, outputs, outcomes, and impacts of interventions. Applied to the challenges faced by water and sanitation projects in Mbeya, this framework offers a systematic means to enhance project effectiveness(Nyon*i et al.*, 2022). By utilizing ToC, project designers can clearly delineate the logical sequence of events, ensuring that all activities are strategically aligned to achieve desired outcomes for the Mbeya Water Supply and Sanitation Authority (Mbeya WSSA)(Mtasigazya, 2021).

One notable application of ToC in Mbeya's water and sanitation projects is its ability to improve project design(Raab et al., 2011). Through ToC, stakeholders can map out how various activities contribute to outputs, outcomes, and ultimately, impacts on the Mbeya WSSA. This process helps identify any weaknesses or gaps in project design, ensuring that resources are allocated efficiently and interventions are effectively targeted to address the community's needs(Abdussamad *et al*., 2022).

Furthermore, ToC facilitates targeted Monitoring and Evaluation (M&E) practices, enabling stakeholders to track key indicators at each stage of the project. This focused approach to M&E generates valuable data on project progress and effectiveness, empowering decision-makers to make informed adjustments as needed. Despite its strengths, ToC also presents challenges such as complexity and uncertainty in causal relationships. However, by starting with a simple ToC, embracing flexibility, and focusing on core assumptions, stakeholders can mitigate

these challenges and leverage the power of ToC to significantly improve the effectiveness of water and sanitation projects in Mbeya.

2.4 Empirical Literature Review

2.4.1 The role of key M&E Components in Promoting the Sustainability

Weber et al., (2019) developed a conceptual evaluation framework for the water and sanitation for health facility improvement tool (WASH FIT). Their study employed a conceptual research design and qualitative analysis methods. Findings revealed deficiencies in WASH services in healthcare facilities across low- and middle-income countries and suggested the potential of the WASH FIT tool to address these issues. Recommendations included the routine use of the WASH FIT tool to enhance quality of care efforts. Strengths of the study lie in its comprehensive evaluation framework, but it lacks empirical evidence on the effectiveness of the WASH FIT tool.

Mgoba, et al., (2020) investigated the effectiveness of participatory monitoring and evaluation (PM&E) on community-based water projects in Tanzania. Their study utilized a sequential exploratory research design, collecting both quantitative and qualitative data. Analysis involved SPSS for descriptive statistics and the Kruskal–Wallis H test. Findings indicated PM&E's effectiveness in achieving project objectives, with a weakness in capacity building. The study's strength lies in its comprehensive analysis of PM&E, yet it overlooks capacity building in the process. Waweru & Kimathi (2022) examined project monitoring and evaluation practices on the performance of national government water and sanitation projects in Machakos County, Kenya. They employed a stratified random sampling technique and

collected primary data through semi-structured questionnaires, analyzed using SPSS. Results highlighted the positive influence of monitoring and evaluation planning and stakeholder involvement on project performance. Recommendations emphasized proper planning and role definition. Strengths include comprehensive analysis, while weaknesses include limited focus on other influencing factors.

Oli (2023) assessed monitoring and evaluation practices on rural water development projects in Oromia, Ethiopia. The study utilized a descriptive research design and both qualitative and quantitative data analysis methods. Findings indicated weak monitoring and evaluation practices in the Bureau, with recommendations focusing on employee training and modern project implementation tools. The study offers a comprehensive analysis of practices but overlooks other potential influencing factors. Berendes et al., (2022) examined global efforts to improve water, sanitation, and hygiene (WASH) practices, with a focus on hand hygiene during the COVID-19 pandemic. The study employed mixed-methods assessments to identify gaps in access to hand hygiene materials. Findings revealed widespread issues with poor management of hand washing stations and alcohol-based hand rub, especially in community institutions. Recommendations included the development and refinement of standards to ensure inclusive preventive behaviors. The study's strength lies in its comprehensive analysis of WASH practices but lacks focus on other influencing factors.

2.4.2 The Result-based M&E Approach on the Sustainability of Water and Sanitation Projects

Nyamupachitu (2018) conducted an evaluation of the execution of RBM approach in

non-governmental organizations. In a case study of the ecumenical pharmaceutical network, quantitative as well as qualitative research techniques were deployed and questionnaires were sent via survey monkey, key informant interviews were also done in addition to secondary data review of organizational documents. The findings revealed that the monitoring and evaluation system was mostly in line with RBM practice albeit some challenges. The planning was well formulated with a strategic plan and intervention logic was well understood.

The organization emphasizes on the higher level results or intended change in their planning so that the planning is done with the ultimate goal in mind. Nonetheless, the study used survey monkey, key informant interviews and secondary data review to collect data, but the current study will use a semi structured questionnaire. Kasule (2016) examined the factors influencing application of results based M&E system. Using a mixed methods research approach, the researcher obtained data from forty sampled respondents using surveys, document review of M&E tools and key informative interviews.

The study reported low application of results based M&E system (reporting outcomes and reporting impact), which was attributed to management support, managerial capacity and also usage of baseline information. However, the results did not show the impact of results based M&E on projects performance. Tienhaara, Haltia and Pouta (2019) examined legality of result-oriented as well as action-oriented environmental schemes in Finland. Using an online survey, Vainio, the data was obtained using internet questionnaire. The researcher found that low legitimacy of result oriented AES may be as a result of factors rather than their anticipated

ability to yield ecosystem services. However, this study did not show how result-oriented approach influences performance of projects. In addition, this study adopted an online survey design, but the ongoing study will deploy descriptive research design.

2.4.3 Influence of Regular M&E Cycles on the Operational Functionality and Maintenance of Water and Sanitation Facilities

Hancharou & Danilenko (2018) examined the impact of regular monitoring and evaluation on the functionality of water and sanitation facilities in rural communities in Belarus. The researchers conducted a case study to assess how regular monitoring and evaluation can improve the functionality and sustainability of water and sanitation facilities in rural areas. The study found that regular monitoring and evaluation can significantly improve the functionality of water and sanitation facilities in rural communities. By regularly assessing the performance of these facilities, it is possible to identify issues and address them in a timely manner, leading to improved functionality and sustainability.

Oladipo & Oyediran (2016) conducted a systematic review on the effectiveness of monitoring and evaluation on the functionality of water and sanitation facilities in rural Nigeria. The researchers aimed to assess the impact of monitoring and evaluation processes on the sustainability of water and sanitation facilities in rural communities. The findings of the study revealed that monitoring and evaluation processes are essential for ensuring the functionality and sustainability of water and sanitation facilities in rural Nigeria. The study highlighted the importance of regular monitoring and evaluation activities in identifying and addressing challenges that

can affect the functionality of these facilities.

Alemu, Tadesse & Wolde (2017) examined the impact of regular monitoring and evaluation on the functionality of water and sanitation facilities in Ethiopia through a meta-analysis. The researchers collected data from various sources and analyzed the results to determine the effectiveness of monitoring and evaluation practices in ensuring the functionality of water and sanitation facilities. The findings of the study reveal that regular monitoring and evaluation have a significant positive impact on the functionality of water and sanitation facilities in Ethiopia. Facilities that were subject to regular monitoring and evaluation were found to be more likely to remain functional compared to those that did not receive such oversight. This suggests that monitoring and evaluation play a crucial role in maintaining the functionality of water and sanitation facilities in the country.

Asante and Oduro (2019) examined the effectiveness of monitoring and evaluation efforts on the functionality of water and sanitation facilities in Ghana. The authors explore the various methods and approaches used in monitoring and evaluating these facilities, with a focus on the impact these efforts have on the overall functionality of the systems. The study highlights the importance of monitoring and evaluation in ensuring the sustainability of water and sanitation facilities in Ghana, as well as the challenges and limitations faced by stakeholders in implementing these processes effectively. Patel and Gupta (2015) discussed the importance of monitoring and evaluation in improving the functionality of water and sanitation facilities in India. The authors highlight the significant challenges faced in the water and sanitation sector in India, including issues such as inadequate access to clean water and

sanitation facilities, poor infrastructure maintenance, and lack of proper monitoring and evaluation systems. The authors discuss how monitoring and evaluation play a crucial role in identifying and addressing gaps in water and sanitation services, as well as in improving the overall functionality of facilities. They emphasize the need for regular monitoring and evaluation to track progress, measure impact, and identify areas for improvement.

2.4.4 The Key Economic, Health, Environmental, and Social Benefits Derived from the Sustainability of Water and Sanitation Projects

Bartram, Corrales, and Davison (2018) analyzed the socio-economic and health benefits of a sustainable water and sanitation project in rural communities in Nicaragua. The study found that the project had a significant impact on the overall well-being of the communities, particularly in terms of health outcomes and economic opportunities. One of the key findings of the study was that access to clean water and improved sanitation facilities led to a decrease in waterborne diseases, such as diarrhea and cholera, which are common in rural areas with poor water quality. This, in turn, resulted in a decrease in healthcare costs and an improvement in overall community health.

The project created economic opportunities for community members, particularly women, who were able to save time that would have been spent collecting water from distant sources. With access to clean water closer to their homes, women were able to engage in income-generating activities, such as farming or small businesses, leading to improved financial stability for their families. Godfrey, et al., (2019) examined the health benefits of a sustainable water and sanitation project in Kenya.

The researchers collected data on various health outcomes before and after the implementation of the project. They found that the project led to significant improvements in the community's health. Specifically, there was a reduction in the incidence of waterborne diseases such as diarrhea, as well as improvements in overall hygiene practices. Additionally, the researchers found that the project had positive social and economic impacts on the community. Access to clean water and improved sanitation facilities reduced the time spent collecting water and decreased the economic burden of treating waterborne illnesses.

Medlicott et al. (2016) evaluated the impact of a sustainable water and sanitation project in Ghana on the livelihoods of rural households in Ghana. The study found that the project had a positive impact on the livelihoods of rural households in Ghana. Access to clean water and improved sanitation facilities reduced the incidence of waterborne diseases, leading to improved health outcomes and reduced healthcare costs. Additionally, the project provided job opportunities and training for local community members, contributing to increased income and economic stability. Furthermore, the project also had social impacts, fostering a sense of community ownership and empowerment among residents.

Howard et al. (2017), assessed the socio-economic benefits of a sustainable water and sanitation project in India. The study found that the project resulted in several positive outcomes, including improved health and well-being, increased local employment opportunities, and enhanced social cohesion within communities. Additionally, the project led to advancements in education and economic development, as well as a reduction in gender disparities. Overall, the research

demonstrated the significant socio-economic benefits of investing in sustainable water and sanitation projects in developing countries like India.

2.5 The Research Gap

The review of existing literature highlights critical insights into the role of Monitoring and Evaluation (M&E) systems in the sustainability of water and sanitation projects. Various studies (e.g., Weber et al., 2019; Mgoba et al., 2020) have explored M&E practices, their effectiveness, and challenges within different contexts. However, gaps remain in fully understanding how M&E systems influence long-term project sustainability, particularly in the Tanzanian context. Firstly, most studies focus on M&E practices within broader African or international settings (e.g., Nzomo & Gachengo, 2021; Oladipo & Oyediran, 2016), often overlooking localized challenges such as institutional capacity constraints, community participation levels, and funding limitations specific to Mbeya, Tanzania. This creates a need for research that contextualizes M&E's impact on sustainability within the operational realities of Mbeya Water Supply and Sanitation Authority (Mbeya WSSA).

Secondly, while prior research emphasizes the effectiveness of M&E components like stakeholder engagement, data-driven decision-making, and performance tracking (e.g., Hancharou & Danilenko, 2018; Oli, 2023), few studies critically examine how these components interact to shape project sustainability outcomes. A more integrated analysis is needed to establish causal linkages between M&E system implementation and the operational functionality, maintenance, and longevity of water and sanitation infrastructure.

Additionally, existing studies (e.g., Kasule, 2016; Nyamupachitu, 2018) discuss the application of a results-based M&E approach, but there is limited empirical evidence demonstrating its direct impact on the long-term sustainability of water and sanitation projects in Tanzania. The current study aims to bridge this gap by evaluating whether a structured, results-oriented M&E approach contributes to sustained improvements in service delivery, infrastructure management, and community health benefits. Furthermore, while studies highlight the socio-economic and environmental benefits of sustainable water and sanitation projects (e.g., Godfrey et al., 2019; Bartram et al., 2018), few provide a comprehensive analysis of how M&E processes influence the realization of these benefits. This study seeks to fill this gap by exploring the role of M&E in maximizing economic, health, environmental, and social gains derived from sustainable water and sanitation initiatives in Mbeya.

Lastly, methodological gaps exist in the literature. While some studies adopt mixed-methods approaches (e.g., Berendes et al., 2022), most rely on descriptive or cross-sectional designs, which may not fully capture the long-term effects of M&E interventions. This study will address this limitation by employing a robust methodological approach, incorporating both qualitative and quantitative analyses, to provide a more comprehensive assessment of M&E's role in ensuring project sustainability.

By addressing these gaps, this study will contribute to a more nuanced understanding of how effective M&E systems can drive the sustainability of water and sanitation projects, with direct implications for policy formulation, institutional capacity-

building and improved service delivery in Tanzania.

2.6 Conceptual Framework

The conceptual framework on the impact of monitoring and evaluation (M&E) on the sustainability of water and sanitation projects is based on the premise that effective M&E processes are essential to ensuring the long-term success and viability of such projects.

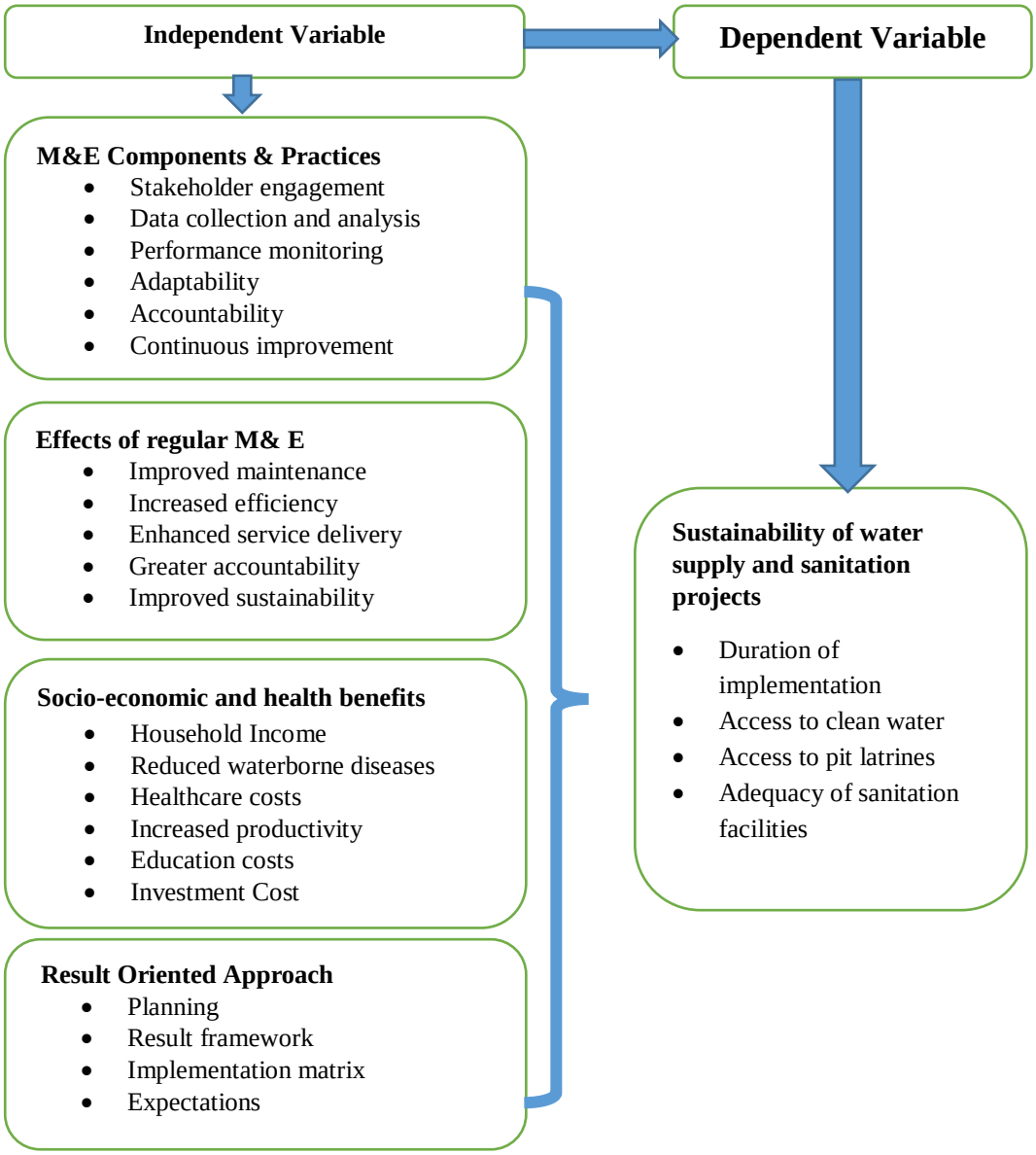

Figure 2.1: The Conceptual Framework
Source: Researcher, (2024).

The framework outlines the key components and relationships that influence the sustainability of water and sanitation projects, and highlights the role that M&E plays in enhancing their impact. This framework examines how strengthening M&E practices and stakeholder participation (independent variables) lead to Sustainability of water supply and sanitation projects (dependent variable). Effective M&E (efficiency, effectiveness, adaptability) and resident involvement improve project outcomes. Socio-economic and health benefits (resources for M&E) are also crucial. External factors like social aspects can influence these relationships.

2.7 Theoretical Framework

This study will use the Theory of Change, which posits that monitoring and evaluating project activities and outcomes are essential for understanding the underlying processes that lead to impact. By mapping out the logical connections between activities, outputs, outcomes, and impacts, the Theory of Change helps project stakeholders identify the key drivers of success and areas for improvement. In the context of water and sanitation projects, M&E can help track progress towards desired outcomes such as improved access to clean water and sanitation, reduced waterborne diseases, and enhanced community resilience(Elsawy, 2022).

M&E practices are essential for ensuring the sustainability of water and sanitation projects by identifying challenges, tracking progress, enhancing accountability, promoting learning and adaptation, and engaging stakeholders. By integrating these practices into project management processes, stakeholders can increase the likelihood of achieving long-term positive impacts on water and sanitation access and quality. Result oriented approach involves ensuring that endeavors to achieve a

goal irrespective of following a pattern. Result oriented approach encompasses planning, result framework, implementation matrix and Expectations(Brintha, 2022).

The effects of regular M&E are crucial for ensuring the sustainability of water and sanitation projects. By monitoring progress, improving accountability, enhancing learning, improved maintenance, increased efficiency, and enhanced service delivery, project managers can ensure that these projects continue to benefit communities in the long run.The socio-economic and health benefits of water and sanitation projects are crucial for their long-term sustainability. By prioritizing these benefits in project planning and implementation, stakeholders can ensure that communities have access to safe and reliable water and sanitation services for years to come(Pató *et al.*, 2022).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study employed a case study design to explore the impact of the Monitoring and Evaluation (M&E) system on the sustainability of water and sanitation projects in Tanzania, specifically focusing on the Mbeya Water Supply and Sanitation Authority (Mbeya WSSA). The case study design was selected due to its suitability in providing an in-depth understanding of complex issues within a specific context (Gillum et al., 2023). The case study approach allowed for a detailed investigation of the M&E practices implemented by Mbeya WSSA and how these practices influence the sustainability of their water and sanitation projects.

A quantitative research approach was used, where data collection was based on structured questionnaires administered to the staff involved in the operation and management of water and sanitation projects at Mbeya WSSA. This method was chosen to gather detailed information directly from those responsible for implementing and overseeing the M&E processes, ensuring the accuracy and relevance of the collected data.

3.2 Target Population

The target population for this study comprised the operational staff involved in M&E activities for completed water and sanitation projects under the Mbeya Water Supply and Sanitation Authority. The study focused on six completed water projects within Mbeya city. A total of 105 operational staff members, who were directly responsible for the implementation and management of M&E systems, were included in the study.

3.3 Area of the Study

The research was conducted in Mbeya City, located in the Mbeya region of Tanzania. Mbeya WSSA, which has been operational since 1998, is responsible for providing water supply and sanitation services to Mbeya city. The authority oversees several water and sanitation projects aimed at improving access to clean water and sanitation facilities in the region. Mbeya WSSA was selected as the case study due to its established M&E system and its pivotal role in addressing water and sanitation challenges in Mbeya city. The projects examined included the Mbeya Urban Water Supply and Sanitation Project and the Mbeya Water Supply Improvement Project.

3.4 Sampling Techniques and Procedures

The study employed a census approach, where all 105 operational staff members involved in M&E activities at Mbeya WSSA were included as respondents. This approach was adopted due to the relatively small size of the population, which made it feasible to include all individuals in the data collection process. The census method ensured that every relevant staff member had the opportunity to contribute to the study, reducing the likelihood of sampling errors and providing comprehensive data on the M&E system's impact.

3.5 Measurement of Variable

The independent variables in this study included M&E practices, the effects of regular M&E on the functionality of water and sanitation facilities, and the benefits of sustainable water and sanitation projects. These variables were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The dependent variable, sustainability of water and sanitation projects, was also measured

using a balanced scorecard with scales from 1 to 5, similar to the independent variables.

3.6 Data Collection Methods

Primary data were collected using structured questionnaires, designed to capture information on M&E practices, the result-oriented approach, and the sustainability of water and sanitation projects. The questionnaire comprised both closed and open-ended questions. Closed-ended questions were used to obtain quantifiable data, while open-ended questions provided respondents with the opportunity to elaborate on their experiences and challenges related to M&E practices. Data collection was carried out by distributing the questionnaires to all 105 operational staff members at Mbeya WSSA. Face-to-face administration of the questionnaires ensured high response rates, as respondents were given sufficient time to complete the questionnaires and could seek clarification from the researcher where necessary.

3.7 Data Analysis

The collected data were analyzed using both descriptive and inferential statistical methods. Descriptive statistics such as frequencies, percentages, and means were used to summarize and present the data. Inferential statistics, including regression analysis, were employed to determine the relationship between M&E practices and the sustainability of water and sanitation projects. Data were analyzed using SPSS software, which allowed for efficient handling and processing of the quantitative data. The analysis aimed to identify trends, patterns, and relationships between the M&E practices implemented by Mbeya WSSA and the sustainability of their projects. The results of the analysis were presented in tables and charts to provide a clear and concise representation of the findings.

3.8 Validity and Reliability

3.8.1 Validity

Validity refers to the extent to which a research instrument accurately measures what it is intended to measure and how well the data collected represents the phenomena being studied. In this study, the validity of the questionnaire was ensured through careful design and content validation. The questionnaire was reviewed by experts in the field of Monitoring and Evaluation (M&E) and water and sanitation projects to confirm that the questions adequately covered the key variables, including M&E practices, sustainability, and project functionality. Additionally, a pilot test was conducted with a small group of respondents from Mbeya WSSA to identify any ambiguities or misinterpretations in the questions, which were then corrected before the final administration. This process ensured that the questionnaire effectively captured the necessary data to meet the study objectives.

3.8.2 Reliability

Reliability refers to the consistency and stability of the measurement instrument over time, ensuring that the results are replicable under similar conditions. To ensure the reliability of the questionnaire in this study, the internal consistency of the instrument was tested using Cronbach's Alpha, a statistical measure used to assess the reliability of scales. A threshold of 0.7 or higher was considered acceptable for the reliability of the scale. Furthermore, the questionnaire was standardized, meaning that the same set of questions was administered to all participants under similar conditions, reducing variability caused by external factors. This ensured that the data collected was consistent and dependable, enhancing the overall credibility of the study findings.

3.9 Ethical Consideration

Ethical considerations are fundamental in ensuring the integrity and credibility of any research. In this study, several ethical principles were strictly adhered to. Informed consent was obtained from all participants, ensuring that they were fully aware of the purpose of the study, the procedures involved, and their rights to withdraw at any point without any consequences. The confidentiality and anonymity of the respondents were guaranteed by not collecting any personal identifiers and securely storing all collected data.

The study also adhered to the principle of non-maleficence, ensuring that no harm, whether physical, psychological, or social, came to the participants as a result of their involvement in the research. Additionally, the data collected was used solely for the purpose of this study, ensuring compliance with data protection laws and ethical research standards. Ethical approval was also sought from relevant institutional review boards to ensure that the study met the required ethical guidelines.

CHAPTER FOUR

PRESENTATION OF FINDINGS AND ANALYSIS

4.1 Introduction

This chapter presents the findings of the study, analyses the data collected of the results in relation to the research. The presentation of this information was based to the following specific objectives of the study: To assess the efficiency of M&E practices in promoting the sustainability of water and sanitation projects in Mbeya. To analyze the impact of a result-based M&E approach on the sustainability of water and sanitation projects in Mbeya. To investigate the influence of regular M&E cycles on the operational functionality and maintenance of water and sanitation facilities in Mbeya. To identify and evaluate the key economic, health, environmental, and social benefits derived from the sustainability of water and sanitation projects in Mbeya.

4.2 Demographic Characteristics of Respondents

This section presents an analysis of the demographic characteristics of the respondents, including gender, age, marital status, education level, and work experience. These factors help contextualize the study findings by providing insights into the composition of the workforce engaged in Monitoring and Evaluation (M&E) activities at Mbeya Water Supply and Sanitation Authority (Mbeya WSSA).

Table 4.1: Demographic Characteristics of Respondents

Category	Classification	Frequency (n = 105)	Percentage (%)
Gender	Male	64	61.0
	Female	41	39.0
Age Group (Years)	20 – 27	55	52.4
	28 – 34	37	35.2
	35 – 42	9	8.6
	43 – 50	4	3.8
Marital Status	Single	77	73.3
	Married	28	26.7
Education Level	Primary Education	2	1.9
	Secondary Education	22	21.0
	Diploma	26	24.8
	Bachelor's Degree	38	36.2
	Master's Degree	17	16.2
Work Experience	1 - 5 years	87	82.9
	5 - 10 years	18	17.1
Total		**105**	**100**

Source: Researcher, (2024).

Gender Distribution: The data shows that 64 respondents (61.0%) were male, while 41 respondents (39.0%) were female. This indicates a relatively balanced workforce composition, although males were slightly more represented in M&E activities at Mbeya WSSA. This distribution reflects the general employment trends in technical fields such as water supply and sanitation management, where male representation is often higher.

Age Distribution: The age analysis shows that the majority of respondents (52.4%) were aged between 20 and 27 years, followed by 35.2% aged between 28 and 34 years. A smaller proportion of 8.6% were between 35 and 42 years, while only 3.8% were in the 43 to 50 years age bracket. This indicates that Mbeya WSSA's M&E workforce is predominantly young, which may suggest high staff turnover or recent

recruitment trends aimed at engaging younger professionals in project monitoring and evaluation.

Marital Status: The data on marital status reveals that 73.3% of respondents were single, while 26.7% were married. This aligns with the age distribution, as most employees fall within the 20-34 age group, a stage in life where individuals are less likely to be married. The predominance of single employees may have implications for workforce mobility, job flexibility, and long-term retention strategies within Mbeya WSSA.

Education Level: The educational background of the respondents indicates that most employees possess higher education qualifications, with 36.2% holding a bachelor's degree, followed by 24.8% with a diploma and 16.2% with a master's degree. Only 21.0% had secondary education, while a small proportion (1.9%) had only primary education. This suggests that the workforce at Mbeya WSSA is highly skilled, which is essential for handling the technical demands of M&E activities. However, the relatively lower percentage of master's degree holders suggests that opportunities for advanced training and professional development may be limited within the organization.

Work Experience: In terms of work experience, 82.9% of respondents had worked at Mbeya WSSA for 1 to 5 years, while only 17.1% had between 5 and 10 years of experience. This suggests that a large proportion of employees are relatively new to the organization, which may impact continuity in M&E processes. The limited number of long-serving employees could indicate high staff turnover or recent expansion efforts that led to the recruitment of new personnel.

4.3 Result Findings

4.3.1 To Evaluate the Role of Key M&E Components in Promoting the Sustainability 0f Water and Sanitation Projects in Mbeya.

To achieve this objective one, the researcher designed questionnaire with 5-point Likert scale responses, where the respondents required to rate their level of agreement with the statements scales ranges as; Strong Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strong Disagree (SD). Hence the descriptions of the results obtained from this objective are presented in the following sections.

4.3.1.1 Stakeholder Engagement

The findings on stakeholder engagement reveal a strong agreement among respondents on its importance in sustaining water and sanitation projects in Mbeya. A majority of respondents, as shown in the table, either strongly agreed or agreed that stakeholder engagement is critical for building relationships (85.7%), managing risks (85.7%), and achieving long-term success and sustainability (85.7%).

Table 4.2: Stakeholder Engagement

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Stakeholder engagement is crucial for building relationships	50 (47.6%)	40 (38.1%)	10 (9.5%)	3 (2.9%)	2 (1.9%)	105(100%)
Stakeholder engagement is crucial for managing risks	55 (52.4%)	35 (33.3%)	8 (7.6%)	5 (4.8%)	2 (1.9%)	105(100%)
Stakeholder engagement is crucial for achieving long-term success and sustainability	60 (57.1%)	30 (28.6%)	9 (8.6%)	4 (3.8%)	2 (1.9%)	105(100%)

Source: Researcher, (2024).

These high percentages indicate a clear recognition that involving stakeholders in project processes contributes significantly to effective project implementation and

risk management, ultimately supporting the sustainability of the projects. The relatively low percentages of neutral or disagreeing responses suggest minimal dissent, further emphasizing the widespread belief in the value of stakeholder involvement. This presentation highlights that stakeholder engagement is viewed as a key factor in ensuring the lasting impact of these initiatives

4.3.1.2 Capacity Building

The presentation of findings on capacity building indicates that a majority of respondents acknowledge the importance of regular training and skill enhancement in ensuring effective project implementation. Specifically, 42.9% strongly agreed and 38.1% agreed that regular training is conducted to improve the skills of project teams. Furthermore, 47.6% of respondents expressed strong satisfaction with the capacity-building practices in place, while 33.3% agreed with this statement.

Table 4.3: Capacity Building

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
There is regular training of project teams to increase their skills on project implementation	45 (42.9%)	40 (38.1%)	12 (11.4%)	5 (4.8%)	3 (2.9%)	105(100%)
I am satisfied with the capacity building practices established	50 (47.6%)	35 (33.3%)	10 (9.5%)	6 (5.7%)	4 (3.8%)	105(100%)
Workshops and training seminars are frequently organized	52 (49.5%)	32 (30.5%)	12 (11.4%)	6 (5.7%)	3 (2.9%)	105(100%)

Source: Researcher, (2024).

The frequency of workshops and seminars was also highlighted, with 49.5% strongly agreeing and 30.5% agreeing that such events are regularly organized. These results reflect a clear consensus that capacity building is a priority within the organization,

contributing to the improved execution and sustainability of water and sanitation projects. The relatively low percentage of neutral and negative responses further reinforces the overall positive perception of these capacity-building initiatives.

4.3.1.3 Design Built

The presentation of findings on project design built demonstrates a strong level of agreement among respondents regarding the diversity and quality of project designs in water-related projects. A significant portion of respondents, 45.7%, strongly agreed and 36.2% agreed that different designs are created for each project, reflecting the organization's effort to tailor solutions to individual project needs.

Table 4.4: Design Built

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
There are different designs built for each project	48 (45.7%)	38 (36.2%)	10 (9.5%)	6 (5.7%)	3 (2.9%)	105(100%)
The project teams are capable of designing water-related projects	50 (47.6%)	35 (33.3%)	12 (11.4%)	5 (4.8%)	3 (2.9%)	105(100%)
I am satisfied with the types of project designs built by project teams	52 (49.5%)	32 (30.5%)	10 (9.5%)	7 (6.7%)	4 (3.8%)	105(100%)

Source: Researcher, (2024).

Additionally, 47.6% of respondents strongly agreed, and 33.3% agreed that the project teams are capable of designing water-related projects, indicating confidence in the technical abilities of the teams. Also, 49.5% of respondents expressed strong satisfaction with the project designs built by the teams, which highlights the overall effectiveness of the designs in meeting the project goals. These responses suggest that the organization places a strong emphasis on project design, which is crucial for ensuring the successful implementation and sustainability of water and sanitation projects.

4.3.1.4 Performance Monitoring

The presentation of findings on performance monitoring highlights the importance of regular communication and evaluation in achieving long-term project success. A majority of respondents (50.5% strongly agree and 33.3% agree) emphasized the necessity of effectively communicating performance results and progress to stakeholders and decision-makers, which ensures transparency and informed decision-making. Additionally, 57.1% of respondents strongly agreed and 30.5% agreed that regular monitoring of project performance is essential for meeting sustainability goals, reinforcing the need for continuous oversight throughout the project lifecycle. Furthermore, 55.2% strongly agreed, and 32.4% agreed that monitoring sustainability performance has a significant impact on the project's long-term success. These findings underscore the critical role that performance monitoring plays in the successful and sustainable implementation of water and sanitation projects, ensuring they remain aligned with their objectives over time.

Table 4.5: Performance Monitoring

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Communicating performance results and progress to stakeholders and decision-makers	53 (50.5%)	35 (33.3%)	9 (8.6%)	5 (4.8%)	3 (2.9%)	105(100%)
Regular monitoring of project performance is essential to ensure sustainability goals are met	60 (57.1%)	32 (30.5%)	8 (7.6%)	3 (2.9%)	2 (1.9%)	105(100%)
Monitoring project sustainability performance impacts the project's long-term success	58 (55.2%)	34 (32.4%)	7 (6.7%)	4 (3.8%)	2 (1.9%)	105(100%)

Source: Researcher, (2024).

4.3.1.5 Accountability

The findings on accountability indicate a strong recognition of the critical role that project managers, stakeholders, and team members play in ensuring the sustainability of water and sanitation projects. A majority of respondents (52.4% strongly agree and 31.4% agree) emphasized that project managers are accountable for making sure all project activities are carried out in a sustainable manner. Similarly, 55.2% strongly agree and 28.6% agree that project stakeholders are informed and engaged in sustainability efforts, underscoring the importance of involving stakeholders throughout the project process.

Additionally, 57.1% strongly agree and 30.5% agree that project team members and partners are committed to identifying and implementing best practices in sustainable resource management. These responses reflect the widespread agreement that accountability at every level of the project, from management to stakeholders, is crucial for achieving and maintaining sustainability in project activities. The relatively small percentage of neutral or disagreeing responses indicates minimal contention, further reinforcing the consensus on the importance of accountability.

Table 4.6: Accountability

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Project manager is accountable for ensuring all activities are carried out sustainably	55 (52.4%)	33 (31.4%)	10 (9.5%)	5 (4.8%)	2 (1.9%)	105(100%)
Project stakeholders are informed and engaged in sustainability efforts	58 (55.2%)	30 (28.6%)	9 (8.6%)	6 (5.7%)	2 (1.9%)	105(100%)
Project team members and partners implement best practices in sustainable resource management	60 (57.1%)	32 (30.5%)	7 (6.7%)	4 (3.8%)	2 (1.9%)	105(100%)

Source: Researcher, (2024).

4.3.1.6 Adaptability

The findings on adaptability indicate a strong acknowledgment of the importance of regular project team meetings in ensuring the effective management and sustainability of water and sanitation projects. A majority of respondents (47.6% strongly agree and 33.3% agree) confirmed that project team meetings are held regularly, providing an essential platform for discussing progress and addressing challenges.

Table 4.7: Adaptability

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Project team meetings are held on a regular basis	50 (47.6%)	35 (33.3%)	10 (9.5%)	6 (5.7%)	4 (3.8%)	105(100%)
I am satisfied with the frequency of project team meetings	48 (45.7%)	38 (36.2%)	9 (8.6%)	6 (5.7%)	4 (3.8%)	105(100%)
Thorough checks of projects are done during project team meetings	52 (49.5%)	32 (30.5%)	8 (7.6%)	7 (6.7%)	6 (5.7%)	105(100%)

Source: Researcher, (2024).

Additionally, 45.7% strongly agreed and 36.2% agreed that they are satisfied with the frequency of these meetings, reflecting overall contentment with the team's communication and coordination practices. Furthermore, 49.5% of respondents strongly agreed, and 30.5% agreed that thorough checks of projects are conducted during these meetings, which helps in maintaining the project’s progress and making necessary adjustments. These results suggest that regular team meetings and project evaluations are seen as key elements of adaptability, helping to ensure that projects remain responsive to emerging needs and challenges, ultimately supporting their

sustainability.

4.3.2 To Analyze the Impact of a Result-based M&E Approach on the Sustainability of Water and Sanitation Projects in Mbeya

To achieve this objective two, the researcher designed questionnaire with 5-point Likert scale responses, where the respondents required to rate their level of agreement with the statements scales ranges as; Strong Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strong Disagree (SD). Hence the descriptions of the results obtained from this objective are presented in the following sections:

4.3.2.1 Planning

The findings on the planning process in a result-oriented approach highlight the significance of having structured and well-organized plans for water and sanitation projects. A large majority of respondents (50.5% strongly agree, 33.3% agree) affirmed that all projects have a clear plan showing the expected results, ensuring that the objectives are well-defined from the beginning. Furthermore, 52.4% strongly agree and 30.5% agree that the planning process is handled by project experts, indicating a high level of technical expertise and competence in the development of these plans. Satisfaction with the planning process is also evident, with 47.6% strongly agreeing and 34.3% agreeing that the planning process meets their expectations. These results suggest that thorough planning, conducted by knowledgeable experts, is seen as critical to achieving the sustainability and success of water and sanitation projects in Mbeya.

Table 4.8: Planning

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
All projects have a plan which shows the expected results	53 (50.5%)	35 (33.3%)	8 (7.6%)	6 (5.7%)	3 (2.9%)	105(100%)
The planning process is done by project experts	55 (52.4%)	32 (30.5%)	9 (8.6%)	5 (4.8%)	4 (3.8%)	105(100%)
I am satisfied with the level of the project planning process	50 (47.6%)	36 (34.3%)	10 (9.5%)	6 (5.7%)	3 (2.9%)	105(100%)

Source: Researcher, (2024).

4.3.2.2 Result Framework

The findings on the result framework show a strong consensus among respondents regarding its significance and clarity in water projects. A majority (51.4% strongly agree and 32.4% agree) confirmed that all water projects have a results framework that outlines what is expected upon project completion. This reflects the importance of having a structured framework that guides project goals. Additionally, 49.5% strongly agreed, and 34.3% agreed that the result frameworks are clear, indicating that the objectives and expected outcomes are well-defined and easily understood. Regarding satisfaction, 47.6% of respondents expressed strong satisfaction with the formulated result frameworks, while 33.3% agreed. This indicates that most respondents are confident in the effectiveness and quality of the result frameworks in guiding the projects toward successful outcomes.

Table 4.9: Result Framework

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
All water projects have a results framework	54 (51.4%)	34 (32.4%)	8 (7.6%)	6 (5.7%)	3 (2.9%)	105(100%)
The results framework in water projects is always clear	52 (49.5%)	36 (34.3%)	10 (9.5%)	5 (4.8%)	2 (1.9%)	105(100%)
I am satisfied with the formulated results framework	50 (47.6%)	35 (33.3%)	9 (8.6%)	7 (6.7%)	4 (3.8%)	105(100%)

Source: Researcher, (2024).

4.3.2.3 Implementation Matrix

The findings on the implementation matrix reveal that it plays a crucial role in organizing and facilitating the execution of water projects. A significant majority of respondents (50.5% strongly agree, 35.2% agree) confirmed that project managers consistently develop an implementation matrix for each project, highlighting its integral role in project management. Additionally, 48.6% of respondents strongly agree and 34.3% agree that the implementation matrix simplifies the execution process, indicating its effectiveness in helping teams navigate the complexities of project implementation. In terms of satisfaction, 49.5% of respondents expressed strong satisfaction with the quality of the implementation matrix, while 31.4% agreed, suggesting that the majority are confident in its usefulness and quality in ensuring smooth project execution and contributing to the overall success of the projects.

Table 4.10: Implementation Matrix

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Project managers always develop an implementation matrix	53 (50.5%)	37 (35.2%)	8 (7.6%)	5 (4.8%)	2 (1.9%)	105(100%)
The implementation matrix makes the implementation easier	51 (48.6%)	36 (34.3%)	9 (8.6%)	6 (5.7%)	3 (2.9%)	105(100%)
I am satisfied with the quality of the implementation matrix	52 (49.5%)	33 (31.4%)	10 (9.5%)	6 (5.7%)	4 (3.8%)	105(100%)

Source: Researcher, (2024).

4.3.2.4 Expectations

The findings on project expectations reveal a mixed but insightful perspective on how well water projects align with their original plans. A majority of respondents (45.7% strongly agree, 33.3% agree) indicated that project outcomes generally meet the expected results, reflecting overall satisfaction with the end goals of these

projects. However, nearly half of the respondents (47.6%) also strongly agreed that most water projects tend to overrun their budget expectations, with additional costs incurred during implementation. Furthermore, 49.5% strongly agreed that some projects take longer than anticipated to complete, indicating challenges with timeline management. These responses suggest that while the outcomes are generally satisfactory, issues related to budget overruns and delays remain significant areas for improvement in the execution of water projects.

Table 4.11: Expectations

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Project outcome is always in line with the project expectations	48 (45.7%)	35 (33.3%)	10 (9.5%)	7 (6.7%)	5 (4.8%)	105(100%)
Most of the water projects overrun the budget expectations	50 (47.6%)	32 (30.5%)	12 (11.4%)	7 (6.7%)	4 (3.8%)	105(100%)
Some projects take more time to be completed than expected	52 (49.5%)	33 (31.4%)	8 (7.6%)	6 (5.7%)	6 (5.7%)	105(100%)

Source: Researcher, (2024).

4.3.3. To Investigate The Influence of Regular M&E Cycles on the Operational Functionality and Maintenance of Water and Sanitation Facilities in Mbeya

To achieve this objective third, the researcher designed questionnaire with 5-point Likert scale responses, where the respondents required to rate their level of agreement with the statements scales ranges as; Strong Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strong Disagree (SD). Hence the descriptions of the results obtained from this objective are presented in the following sections.

4.3.3.1 Effects of Regular M&E

The findings on the effects of regular Monitoring and Evaluation (M&E) clearly demonstrate its positive impact on the sustainability and performance of water and sanitation projects. A majority of respondents strongly agreed that regular M&E plays a critical role in identifying maintenance needs (53.3%), improving project facility maintenance (51.4%), and increasing the efficiency of project performance (50.5%). Additionally, regular M&E was recognized as enhancing service delivery (52.4%) and promoting greater accountability (54.3%) within projects. Moreover, regular M&E was also seen as significantly improving project sustainability (53.3%) and enhancing user satisfaction (55.2%) with water and sanitation services. These results indicate that regular M&E practices are widely perceived as essential tools for ensuring the long-term success and effectiveness of projects by providing continuous oversight and timely interventions.

Table 4.12: Effects of Regular M&E

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Regular M&E has a positive effect on identifying maintenance needs	56 (53.3%)	34 (32.4%)	8 (7.6%)	4 (3.8%)	3 (2.9%)	105(100%)
Regular M&E helps to improve maintenance of project facilities	54 (51.4%)	35 (33.3%)	7 (6.7%)	5 (4.8%)	4 (3.8%)	105(100%)
Regular M&E increases efficiency of project performance	53 (50.5%)	36 (34.3%)	9 (8.6%)	4 (3.8%)	3 (2.9%)	105(100%)
Regular M&E enhances service delivery in water and sanitation projects	55 (52.4%)	33 (31.4%)	8 (7.6%)	5 (4.8%)	4 (3.8%)	105(100%)
Regular M&E emphasizes greater project accountability	57 (54.3%)	32 (30.5%)	6 (5.7%)	6 (5.7%)	4 (3.8%)	105(100%)
Regular M&E helps to improve project sustainability	56 (53.3%)	34 (32.4%)	7 (6.7%)	5 (4.8%)	3 (2.9%)	105(100%)
Regular M&E enhances user satisfaction of water and sanitation projects	58 (55.2%)	30 (28.6%)	7 (6.7%)	6 (5.7%)	4 (3.8%)	105(100%)

Source: Researcher, (2024).

4.3.4 To Identify and Evaluate the Key Economic, Health, Environmental, and Social Benefits derived from the Sustainability of Water and Sanitation Projects in Mbeya

To achieve this objective fourth, the researcher designed questionnaire with 5-point Likert scale responses, where the respondents required to rate their level of agreement with the statements scales ranges as; Strong Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strong Disagree (SD). Hence the descriptions of the results obtained from this objective are presented in the following sections.

4.3.4.1 Benefits of Sustainable Water and Sanitation Projects

The findings in Table 4.17 indicate a strong consensus among respondents regarding the numerous benefits of sustainable water and sanitation projects. A majority of respondents strongly agreed that these projects help reduce contamination and improve health and well-being (57.1%), incorporate environmentally friendly practices (52.4%), and improve productivity and economic opportunities (55.2%). Additionally, sustainable projects were seen as promoting social equity, particularly for marginalized communities (54.3%), and contributing to the improvement of communities through investment in infrastructure (57.1%).

Furthermore, these projects were reported to increase household income, reduce education and healthcare costs, and mitigate waterborne diseases. Finally, a significant proportion of respondents agreed that sustainable water and sanitation projects boost overall productivity (57.1%). These results emphasize the wide-ranging and substantial impact that such projects have on public health, economic development, and community well-being.

Table 4.13: Benefits of Sustainable Water and Sanitation Projects

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
Sustainable water projects reduce contamination and improve health and well-being	60 (57.1%)	30 (28.6%)	8 (7.6%)	4 (3.8%)	3 (2.9%)	105(100%)
Sustainable projects incorporate environmentally friendly practices	55 (52.4%)	32 (30.5%)	9 (8.6%)	6 (5.7%)	3 (2.9%)	105(100%)
Access to safe water improves productivity and economic opportunities	58 (55.2%)	33 (31.4%)	7 (6.7%)	5 (4.8%)	2 (1.9%)	105(100%)
Sustainable projects promote social equity for marginalized communities	57 (54.3%)	32 (30.5%)	8 (7.6%)	5 (4.8%)	3 (2.9%)	105(100%)
Investing in sustainable infrastructure improves communities	60 (57.1%)	29 (27.6%)	7 (6.7%)	6 (5.7%)	3 (2.9%)	105(100%)
Sustainable projects increase household income	58 (55.2%)	31 (29.5%)	9 (8.6%)	4 (3.8%)	3 (2.9%)	105(100%)
Sustainable projects reduce education costs	56 (53.3%)	32 (30.5%)	7 (6.7%)	6 (5.7%)	4 (3.8%)	105(100%)
Sustainable projects reduce waterborne diseases	59 (56.2%)	31 (29.5%)	8 (7.6%)	4 (3.8%)	3 (2.9%)	105(100%)

Source: Researcher, (2024).

4.3.5 Project Sustainability

This section examines the sustainability of water projects in the county, focusing on key factors such as value for resources, adherence to budget targets, project durability, and stakeholder ownership. Project sustainability is essential to ensuring long-term success and the continued delivery of services, particularly in water and sanitation projects that directly affect community well-being. The analysis includes

an assessment of how effectively resources are utilized, whether projects stay within budget, the durability of project infrastructure, and the role of stakeholder ownership in maintaining these initiatives. The findings reveal overall positive perceptions of the sustainability of water projects, although some challenges, such as budget overruns and timeline delays, still exist. However, the emphasis on project quality and stakeholder involvement plays a critical role in overcoming these challenges and ensuring the long-term viability of the project

4.3.5.1 Value for Resources

The findings in Table 4.18 highlight the perceived value of water projects in terms of resource utilization. A significant majority of respondents (55.2% strongly agree, 31.4% agree) believe that the water projects provide high economic value to the county, reflecting the projects' positive impact on the local economy and community well-being.

Table 4.14: Value for Resources

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
The water projects have a high economic value to the county	58 (55.2%)	33 (31.4%)	7 (6.7%)	5 (4.8%)	2 (1.9%)	105(100%)
Projects are completed within the stipulated timeline	50 (47.6%)	30 (28.6%)	12 (11.4%)	7 (6.7%)	6 (5.7%)	105(100%)
Projects being implemented achieve the intended purpose	55 (52.4%)	32 (30.5%)	9 (8.6%)	6 (5.7%)	3 (2.9%)	105(100%)

Source: Researcher, (2024).

However, only 47.6% strongly agree and 28.6% agree that projects are completed within the stipulated timeline, indicating that delays in project completion are relatively common. Despite these delays, 52.4% strongly agree and 30.5% agree that

the projects achieve their intended purpose, suggesting that, overall, the projects meet their goals and contribute to long-term sustainability, even if the timeline expectations are not always met.

4.3.5.2 Budget Targets

The findings in Table 4.19 reveal a mixed perception of budget management in water projects within the county. While a substantial number of respondents (45.7% strongly agree and 30.5% agree) believe that water projects are completed within the targeted budget, a notable portion expressed concerns about budget overruns, as 7.6% disagreed and 6.7% strongly disagreed. Despite these budget challenges, the respondents showed a strong consensus regarding the quality of the projects, with 54.3% strongly agreeing and 32.4% agreeing that project managers ensure project quality is maintained. This suggests that while staying within budget is sometimes difficult, maintaining high standards and quality remains a priority for project managers, ensuring long-term project sustainability.

Table 4.15: Budget Targets

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
The water projects are completed within the targeted budget	48 (45.7%)	32 (30.5%)	10 (9.5%)	8 (7.6%)	7 (6.7%)	105(100%)
The project managers ensure project quality is maintained	57 (54.3%)	34 (32.4%)	7 (6.7%)	4 (3.8%)	3 (2.9%)	105(100%)

Source: Researcher, 2024.

4.3.5.3 Durability of the Project

The findings in Table 4.20 highlight a generally positive perception of the durability and performance of water projects in the county. A significant majority of respondents (52.4% strongly agree and 33.3% agree) believe that the water projects continue providing services for an extended period, indicating their long-term reliability. Additionally, 47.6% of respondents strongly agree and 30.5% agree that there are few complaints concerning the durability of the projects, suggesting a general satisfaction with the quality and maintenance of these projects. Furthermore, over half of the respondents (55.2% strongly agree and 29.5% agree) expressed satisfaction with the services offered by the completed water projects, reinforcing the idea that these projects are not only durable but also meet the needs and expectations of the communities they serve. This demonstrates the overall success of the projects in terms of longevity and service delivery.

Table 4.16: Durability of the Project

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
The water projects continue providing services for a long period	55 (52.4%)	35 (33.3%)	8 (7.6%)	4 (3.8%)	3 (2.9%)	105(100%)
There are few complaints concerning the durability of the projects	50 (47.6%)	32 (30.5%)	10 (9.5%)	7 (6.7%)	6 (5.7%)	105(100%)
I am satisfied with the services offered by the finished water projects	58 (55.2%)	31 (29.5%)	7 (6.7%)	6 (5.7%)	3 (2.9%)	105(100%)

Source: Researcher, (2024).

4.3.5.4 Stakeholder Ownership

The findings in Table 4.21 highlight the importance of stakeholder ownership in the sustainability of water projects. A significant majority of respondents (55.2%

strongly agree, 29.5% agree) believe that the water projects are capable of ensuring service delivery well into the future, indicating strong confidence in the durability and long-term impact of these initiatives. Additionally, 54.3% of respondents strongly agree, and 30.5% agree that they are satisfied with the level of stakeholder ownership in the projects. This suggests that active participation and involvement of stakeholders, including local communities, contribute to the successful implementation and sustainability of the water projects, ensuring their continued operation and benefit to the community.

Table 4.17: Stakeholder Ownership

Statement	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	Total
The water projects ensure service delivery well into the future	58 (55.2%)	31 (29.5%	7 (6.7%)	6 (5.7%)	3 (2.9%)	105(100%)
I am satisfied with the level of stakeholder ownership in the water projects	57 (54.3%)	32 (30.5%	8 (7.6%)	5 (4.8%)	3 (2.9%)	105(100%)

Source: Researcher, (2024).

4.4 Correlation Analysis

This section presents the correlation analysis between the key variables of the study, which include monitoring and evaluation (M&E) practices, the result-oriented approach, regular M&E, and the sustainability of water and sanitation projects in Mbeya. Correlation analysis is used to determine the strength and direction of the relationship between two continuous variables. The analysis helps to assess whether improvements in M&E systems are associated with enhanced sustainability

outcomes in water and sanitation projects.

4.4.1 Pearson Correlation Coefficient

The Pearson correlation coefficient (r) was used to measure the strength of the relationship between the independent variables (M&E practices, result-oriented approach, and regular M&E) and the dependent variable (sustainability of water and sanitation projects). The correlation coefficient ranges from -1 to 1, where:

i. $r = 1$ indicates a perfect positive correlation.

ii. $r = -1$ indicates a perfect negative correlation.

iii. $r = 0$ indicates no correlation between the variables.

4.4.2 Correlation Matrix

The table 4.22 shows the correlation matrix between the variables. The matrix presents the values of the Pearson correlation coefficients for each pair of variables.

Table 4.18: Correlation Matrix

Variables	M&E Practices	Result-Oriented Approach	Regular M&E	Sustainability
M&E Practices	1.000	0.732	0.681	0.784
Result-Oriented Approach	0.732	1.000	0.689	0.801
Regular M&E	0.681	0.689	1.000	0.755
Sustainability of Projects	0.784	0.801	0.755	1.000

Note: $p < 0.01$ indicates statistical significance at the 1% level.

4.4.3 Interpretation of Results

M&E Practices and Sustainability of Projects ($r = 0.784$, $p < 0.01$): The correlation between M&E practices and the sustainability of water and sanitation projects is positive and significant. This suggests that effective M&E practices are strongly associated with improved sustainability outcomes in the projects.

Result-Oriented Approach and Sustainability of Projects ($r = 0.801$, $p < 0.01$): The result-oriented approach also shows a strong and positive correlation with the sustainability of projects. This indicates that focusing on outcomes and results contributes significantly to the long-term success of water and sanitation projects.

Regular M&E and Sustainability of Projects ($r = 0.755$, $p < 0.01$): Regular M&E activities demonstrate a positive and significant correlation with project sustainability. This implies that consistent monitoring and evaluation efforts help in maintaining the functionality and effectiveness of water and sanitation projects.

Inter-Variable Correlations: The analysis also highlighted strong correlations between M&E practices, the result-oriented approach, and regular M&E activities, suggesting that these elements are closely related and interdependent. This implies that improving one aspect, such as M&E practices, is likely to have a positive impact on the others, further enhancing the sustainability of water and sanitation projects. For example, a project with a strong result-oriented framework will benefit from effective M&E practices that track progress toward outcomes, while regular evaluations will provide ongoing feedback to ensure that the project stays on course.

In the context of Mbeya, integrating these elements ensures a comprehensive approach to project management, where all components work together to support the long-term success and sustainability of water and sanitation initiatives. The correlation analysis shows that all the independent variables (M&E practices, result-oriented approach, and regular M&E) are positively and significantly correlated with the sustainability of water and sanitation projects in Mbeya. This suggests that

strengthening M&E systems, adopting a result-oriented approach, and conducting regular evaluations play a crucial role in ensuring the long-term success and sustainability of these projects. These results support the hypothesis that improving the M&E framework contributes directly to the effectiveness and sustainability of water and sanitation initiatives. Consequently, policy recommendations should focus on enhancing M&E capacity, ensuring result-oriented project planning, and maintaining continuous evaluation mechanisms to optimize project outcomes.

4.5 Discussion of the Study Findings

The discussion of the finding of the study was based on the specific objectives of the study. Such that to examine the effectiveness of M&E practices in ensuring the sustainability of water and sanitation projects in Mbeya. To determine the effect of result-oriented approach on sustainability of water and sanitation projects. To evaluate the effects of regular M&E on the functionality of water and sanitation facilities in Mbeya. To determine the benefits of sustainable water and sanitation projects in Mbeya.

4.5.1 Effectiveness of M&E Practices in promoting the Sustainability of Water and Sanitation Projects in Mbeya

The study found that M&E practices play a significant role in the sustainability of water and sanitation projects in Mbeya. This finding aligns with prior research, which highlights that robust M&E systems are essential for identifying project challenges early, tracking progress, and making timely adjustments to ensure the long-term success of initiatives (Weber et al., 2019). In Mbeya, the positive

correlation between M&E practices and sustainability suggests that continuous assessment and feedback mechanisms enhance the functionality and durability of water projects, thereby reducing the risk of failure. This is supported by Matyoko (2019), who found that water and sanitation projects with integrated M&E systems tend to have higher rates of success and community impact.

The study also emphasized the importance of stakeholder engagement in the M&E process, with a majority of respondents agreeing that involving the community and other stakeholders helps to build relationships and manage risks. This is consistent with findings from Mgoba et al. (2020), who argued that participatory M&E leads to better decision-making and fosters a sense of ownership among stakeholders, which is crucial for the sustainability of community-based water projects. Engaging stakeholders not only helps in monitoring project implementation but also in maintaining transparency, which further enhances accountability and project longevity.

Moreover, the study revealed that capacity building is an important component of M&E practices. Regular training and workshops for project teams help enhance their skills and knowledge, which is vital for effective project implementation. This is corroborated by Waweru and Kimathi (2022), who demonstrated that continuous training of M&E staff contributes to more effective monitoring and evaluation, ultimately improving project outcomes. Therefore, improving the technical capacity of project teams in Mbeya will likely contribute to the sustainability of water and sanitation projects by equipping staff with the necessary skills to address project challenges proactively.

4.5.2 The Impact of a Result-based M&E Approach on the Sustainability of Water and Sanitation Projects in Mbeya

The study found that the result-oriented approach significantly impacts the sustainability of water and sanitation projects in Mbeya. This is in line with research by Kasule (2016), who highlighted that focusing on clear outcomes and long-term goals during project planning and implementation helps ensure that projects remain aligned with their objectives. In the context of Mbeya, a result-oriented approach emphasizes the achievement of key milestones such as increased access to clean water and improved sanitation, which are crucial indicators of sustainability. By focusing on results, projects are better positioned to deliver tangible benefits to the community.

Planning and the use of result frameworks were found to be critical elements of the result-oriented approach in Mbeya. According to Nyamupachitu (2018), projects that implement clear result frameworks tend to achieve better outcomes because they provide a structured path toward the project's goals. The findings of this study echo this, as water and sanitation projects in Mbeya that utilized result-oriented planning were more likely to meet their sustainability objectives. This approach ensures that project activities are aligned with desired outcomes, and any deviations are identified and corrected through regular assessments.

Additionally, the study found that while the result-oriented approach contributes to sustainability, there are challenges such as budget overruns and project delays. This finding is consistent with Tienhaara, Haltia, and Pouta (2019), who noted that even well-planned result-oriented projects can face obstacles related to resource

management. Therefore, while the result-oriented approach enhances sustainability, there is a need for improved budget management and timeline adherence to ensure that projects in Mbeya can achieve their long-term objectives without exceeding financial constraints.

4.5.3 The Influence of Regular M&E Cycles on the Operational Functionality and Maintenance of Water and Sanitation Facilities in Mbeya

The study found that regular M&E activities have a significant positive effect on the functionality of water and sanitation facilities in Mbeya. This is consistent with findings from Hancharou and Danilenko (2018), who demonstrated that regular monitoring and evaluation help to maintain the functionality of water projects by providing ongoing assessments of facility performance. In Mbeya, the regular evaluation of water and sanitation facilities allows for the early detection of operational issues, which can then be addressed before they escalate into larger problems that could disrupt service delivery.

Moreover, regular M&E was found to enhance service delivery and user satisfaction in water and sanitation projects. This is in line with the research of Oladipo and Oyediran (2016), who found that projects with continuous monitoring systems tend to offer higher levels of service delivery and are better equipped to meet the needs of their beneficiaries. Regular M&E ensures that facilities are well-maintained and operate efficiently, which directly impacts the quality of services provided to the community. In the case of Mbeya, this has led to improvements in user satisfaction and trust in the services provided by the water and sanitation authority.

However, the study also highlighted that while regular M&E improves project functionality, there are challenges related to the technical capacity of staff and resource constraints. Alemu, Tadesse, and Wolde (2017) emphasized that M&E systems require adequate resources and trained personnel to function effectively. Therefore, while regular M&E has a positive impact on the sustainability of water and sanitation projects in Mbeya, there is a need to invest in capacity building and ensure that sufficient resources are allocated for continuous monitoring and evaluation activities.

4.5.4 The Key Economic, Health, Environmental, and Social Benefits Derived from the Sustainability of Water and Sanitation Projects in Mbeya

The study confirmed that sustainable water and sanitation projects have numerous socio-economic and health benefits for the communities in Mbeya. These findings are consistent with Bartram, Corrales, and Davison (2018), who demonstrated that access to sustainable water and sanitation services leads to improved health outcomes by reducing waterborne diseases such as diarrhea and cholera. In Mbeya, the sustainability of water and sanitation projects has led to a significant reduction in contamination, improving the overall health and well-being of the community. Sustainable water and sanitation projects also contribute to economic growth by improving productivity and creating economic opportunities.

According to Medlicott, et al., (2016), sustainable projects free up time that would otherwise be spent collecting water, allowing community members to engage in income-generating activities. The findings of this study align with this, showing that access to clean water closer to home has enabled many residents in Mbeya to pursue

livelihoods, ultimately contributing to higher household incomes and reduced healthcare costs.

Furthermore, sustainable water and sanitation projects promote social equity by providing marginalized communities with access to essential services. Howard et al. (2017) found that projects that focus on sustainability help to reduce social inequalities, particularly in rural and underserved areas. In Mbeya, the study revealed that sustainable water projects have improved access to clean water for vulnerable populations, thereby fostering social inclusion and contributing to broader community development. By investing in sustainable infrastructure, these projects have a long-lasting positive impact on the economic and social well-being of the region.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Chapter Overview

This chapter provides a summary of the research findings, conclusions drawn from the study, recommendations for stakeholders, and an outline of the study's implications. Additionally, it discusses the limitations of the research and suggests areas for future study based on the findings and research gaps identified.

5.2 Summary of the Study

The main objective of this study was to assess the impact of the Monitoring and Evaluation (M&E) system on the sustainability of water and sanitation projects in Tanzania, with a focus on the Mbeya Water Supply and Sanitation Authority. The study was structured around four specific objectives: examining the effectiveness of M&E practices in ensuring project sustainability, determining the effect of a result-oriented approach on project sustainability, evaluating the effects of regular M&E on project functionality, and determining the benefits of sustainable water and sanitation projects in Mbeya.

The study found that effective M&E practices play a critical role in ensuring the long-term sustainability of water and sanitation projects. Stakeholder engagement, capacity building, and performance monitoring emerged as key factors in enhancing project outcomes. The result-oriented approach was also found to have a positive impact on project sustainability, particularly in terms of planning and achieving targeted outcomes. However, challenges such as budget overruns and timeline delays were identified as potential obstacles to achieving sustainable results. Regular M&E

activities were shown to significantly improve the functionality and maintenance of water and sanitation facilities, while sustainable projects provided substantial socio-economic and health benefits to the community.

5.3 Conclusion

Based on the findings, the following conclusions are drawn:

Effectiveness of M&E Practices: The study concluded that well-structured M&E practices are integral to the sustainability of water and sanitation projects in Mbeya. Effective stakeholder engagement and regular capacity building were shown to improve project management, while continuous performance monitoring ensures that projects remain aligned with their objectives. Without robust M&E systems, projects face a higher risk of failure due to a lack of oversight and timely intervention. Result-Oriented Approach: The adoption of a result-oriented approach positively influences the sustainability of water and sanitation projects. By focusing on clear objectives and outcomes, project managers can ensure that resources are used efficiently and that project activities are directed toward achieving long-term goals. However, to maximize the benefits of this approach, better budget management and adherence to project timelines are necessary.

Regular M&E and Functionality: Regular M&E activities contribute significantly to the functionality and success of water and sanitation projects. By continuously assessing the performance of facilities and services, project managers can address maintenance issues and operational challenges in a timely manner. This ensures that water and sanitation services remain reliable and efficient, contributing to project sustainability.

Benefits of Sustainable Projects: Sustainable water and sanitation projects provide substantial benefits to the community, including improved health outcomes, economic growth, and social equity. The reduction in waterborne diseases, improved productivity, and enhanced access to clean water in marginalized communities all contribute to the long-term development of the region.

5.4 Recommendations

Based on the findings and conclusions, the following recommendations are made:

5.4.1 Enhancement of M&E Systems

The Mbeya Water Supply and Sanitation Authority should strengthen its M&E systems by increasing investment in training and capacity-building programs for M&E staff. This will ensure that the personnel involved in M&E activities have the necessary skills to carry out their duties effectively.

5.4.2 Adoption of a Result-Oriented Approach

Water and sanitation project managers should prioritize the adoption of a result-oriented approach by developing clear result frameworks and ensuring that project activities are aligned with expected outcomes. Additionally, better budget management practices should be implemented to avoid cost overruns and project delays.

5.4.3 Regular Monitoring and Evaluation

Regular M&E activities should be conducted throughout the project lifecycle to maintain the functionality of water and sanitation facilities. This includes routine assessments of infrastructure performance, user satisfaction, and service delivery to

ensure that projects remain responsive to community needs.

5.4.4 Stakeholder Engagement and Ownership

Efforts should be made to involve stakeholders, including local communities, in the planning, implementation, and evaluation of water and sanitation projects. This will foster a sense of ownership and responsibility, which is essential for long-term project sustainability.

5.5 Implications of the Study

The findings of this study have several implications for policymakers, development agencies, and project managers. First, the study highlights the critical role of M&E systems in the sustainability of water and sanitation projects, suggesting that more attention should be given to improving M&E frameworks in similar projects across Tanzania and other developing countries. Second, the study emphasizes the importance of adopting a result-oriented approach, which can lead to more efficient use of resources and better project outcomes. Finally, the positive impact of regular M&E on project functionality underscores the need for continuous oversight to ensure the long-term success of development projects.

5.6 Limitations of the Study

While the study provides valuable insights into the impact of M&E systems on the sustainability of water and sanitation projects, it is not without limitations. First, the study was limited to the Mbeya region, which may affect the generalizability of the findings to other regions in Tanzania or other countries. Second, the study relied on self-reported data from respondents, which may introduce bias or inaccuracies.

Lastly, the study focused on a limited number of completed projects, and a broader sample may provide more comprehensive results.

5.7 Areas for Further Study

Future research should explore the impact of M&E systems on the sustainability of water and sanitation projects in other regions of Tanzania to assess whether similar patterns and challenges exist. Additionally, studies could examine the long-term effects of M&E practices on the sustainability of projects in other sectors, such as education and healthcare. Finally, further research is needed to explore the role of innovative technologies in enhancing M&E systems, particularly in resource-constrained settings.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

I am Christian Nkwama, a student of OPEN UNIVESTY OF TANZANIA (OUT) Planning undertaking a study on **"*The Impacts of Monitoring and Evaluation System on Sustainability of Water And Sanitation Projects in Tanzania: A Case of Mbeya Water Supply and Sanitation Authority*"**. You are kindly requested to honestly answer my questions. The information you provide, including digital recordings and transcripts, will be used for academic purposes and will be treated with maximum confidentiality. I hope you allow me to continue with the interview.

N/B: This questionnaire consists of two major parts; Part A on general information and Part B on the Impacts of Monitoring and Evaluation on Sustainability of Water and Sanitation Projects in Tanzania: A Case of Mbeya Water Supply and Sanitation Authority.

Part 1: General Information

1. Gender of the respondent

   A. Male [ ] B. Female [ ]

2. How old are you? ..... (years)

3. What is your marital status?

   A. Single [ ]

   B. Married [ ]

   C. Separated [ ]

   D. Widow / Widower [ ]

4. What is your education level?

   A. Primary education [ ]

B. Secondary education [ ]

C. Diploma education [ ]

D. Bachelor degree [ ]

E. Master Degree [ ]

F. PHD [ ]

5. Kindly indicate the length of time working in project work…….. (Years)

PART B: To assess the efficiency of M&E practices in promoting the sustainability of water and sanitation projects in Mbeya.

Section A: **M&E Practices**

Using the below Likert scale, state your agreement level on the below statements pertaining to the effectiveness of M&E practices in ensuring the sustainability of water and sanitation projects (1 denotes strongly disagree, 2 denotes Disagree, 3 denotes Neutral, 4 denotes Agree, 5 denotes strongly agree) Please mark with a CROSS (√) in applicable box.

	Statements	**1**	**2**	**3**	**4**	**5**
	Stakeholder engagement					
1	Stakeholder engagement is crucial for building relationships					
2	Stakeholder engagement is crucial for managing risks					
3	Stakeholder engagement is crucial for achieving long-term success and sustainability					
	Capacity building					
5	The is regular training of project teams to increase their skills on project implementation					
6	Am satisfied with the capacity building practices established					
7	Workshops and training seminars are frequently organized					
	Design built					
7	There are different designs built for each projects					
8	The project teams are capable of design water related projects					
9	Am satisfied with the types of project designs built by project teams					
	Performance monitoring					
10	Communicating performance results and progress to stakeholders and decision-makers.					
11	Regular monitoring of project performance is essential to ensure that sustainability goals are being met.					

12	Monitoring project sustainability performance impact the project's long-term success.					
	Accountability					
13	Project manager is accountable for ensuring that all project activities are carried out in a sustainable manner					
14	Project stakeholders are informed and engaged in sustainability efforts					
15	Project team members and partners to identify and implement best practices in sustainable resource management					
	Adaptability					
16	Project team meetings are held on regular basis					
17	Am satisfied with the frequency of project team meetings					
18	Thorough checks of projects is done during project team meetings					

Section C: To analyze the impact of a result-based M&E approach on the sustainability of water and sanitation projects in Mbeya.

Using the below Likert scale, state your agreement level on the below statements pertaining to result oriented approach on water and sanitation projects' sustainability (1 denotes Strongly disagree, 2 denotes Disagree, 3 denotes Neutral, 4 denotes Agree, 5 denotes Strongly agree)

	Statements	**1**	**2**	**3**	**4**	**5**
	Planning					
1	All project have a plan which shows the expected results					
2	The planning process is done by project experts					
3	Am satisfied with the level of project planning process					
	Result Framework					
5	All water projects have results framework which shows what to expect once the project is completed					
6	The result framework in water projects is always clear					
7	Am satisfied with the formulated result framework					
	Implementation Matrix					
7	The projects managers always develop an implementation matrix for each water project					
8	The implementation matrix developed makes the implementation work easy					
9	Am satisfied with the quality of implementation matrix developed					
	Expectations					
10	Project outcome is always in line with the project Expectations					
11	Most of the water projects overruns the budget expectations					
12	Some projects take more time to be completed than Expected					

Section C: To investigate the influence of regular M&E cycles on the operational functionality and maintenance of water and sanitation facilities in Mbeya

Using the below Likert scale, state your agreement level on the below statements pertaining to the effects of regular M&E on the functionality of water and sanitation facilities (1 denotes Strongly disagree, 2 denotes Disagree, 3 denotes Neutral, 4 denotes Agree, 5 denotes Strongly agree) Please mark with a CROSS (√) in applicable box.

	Statements	**1**	**2**	**3**	**4**	**5**
1	Regular M&E have positive effect on identifying maintenance needs					
2	Regular M&E help to improved maintenance of project facilities					
3	Regular M&E help to increases efficiency of project performance					
4	Regular M&E enhance service delivery in water and sanitation project					
5	Regular M&E emphasize greater project accountability					
6	Regular M&E help to improved project sustainability					
7	Regular M&E enhancing user satisfaction of water and sanitation projects					

Section D: To identify and evaluate the key economic, health, environmental, and social benefits derived from the sustainability of water and sanitation projects in Mbeya.

Using the below Likert scale, state your agreement level on the below statements pertaining to the benefits of sustainable water and sanitation projects (1 denotes Strongly disagree, 2 denotes Disagree, 3 denotes Neutral, 4 denotes Agree, 5 denotes Strongly agree) Please mark with a CROSS (√) in applicable box.

	Statements	1	2	3	4	5
1	Sustainable water and sanitation projects help to reduce the risk of contamination and improving health and well-being					
2	Sustainable water and sanitation projects often incorporate environmentally friendly practices					
3	Access to safe water and sanitation can improve productivity and economic opportunities for communities					
4	Sustainable water and sanitation projects can promote social equity by ensuring that marginalized communities					
5	Investing in sustainable water and sanitation infrastructure can improve communities					
6	Sustainable water and sanitation projects often increase household Income					
7	Sustainable water and sanitation projects often reduce education costs					
8	Sustainable water and sanitation projects often reduce waterborne diseases					
9	Sustainable water and sanitation projects often reduce healthcare costs					
10	Sustainable water and sanitation projects often increase productivity					

Section E: Project sustainability

Using the below Likert scale, state your agreement level on the below statements pertaining to water and sanitation projects' on sustainability in Mbeya Water Supply and Sanitation Authority (1 denotes Strongly disagree, 2 denotes Disagree, 3 denotes Neutral, 4 denotes Agree, 5 denotes Strongly agree) Please mark with a CROSS (√) in applicable box.

	Statements	1	2	3	4	5
	Value for resources					
1	The water projects have a high economic value to the county					
2	Projects are completed within the stipulated timeline					
3	Projects being implemented achieve the intended purpose					
	Budget targets					
5	The water projects in the county are completed within the targeted budget					
6	The project managers ensures project quality is maintained					
	Durability of the project					
7	The water projects are able to continue providing water services for a long period of time					
8	There are few complaints concerning durability of the projects					
9	Am satisfied with the services offered by the finished water projects in the county					
	Stakeholder ownership					
10	The water projects are capable of ensuring service delivery in to a far near future					
11	Am satisfied with the level of stakeholder ownership in the water projects					

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT/ PG202187131 **9th July, 2024**

Managing Director Director,

Mbeya Water Supply and Sanitation Authority,

P.O Box 2932,

MBEYA.

Dear, District Managing Director ,

RE: RESEARCH CLEARANCE FOR A STUDENT CHRISTIAN CLIFORD NKWAMA REG NO: PG202187131

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1stJanuary 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief background, the purpose of this letter is to introduce to you **Mr. Christian Chriford**

Nkwama , Reg.No:PG202187131), pursuing **Masters of Monitoring and Evaluation (MAME)** We here by grant this clearance to conduct a research titled **"Impact of Monitoring and Evaluation System on Sustainability of Water and Sanitation Projects in Tanzania: A case of Mbeya Water Supply Sanitation Authority ".** He will collect his data at your office from July 10th , 2024 to 30th August 2024.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820.We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

THE OPEN UNIVERSITY OF TANZANIA

Prof.Gwahula Raphael Kimamala

For: VICE CHANCELLOR

Kinondoni Biafra, Kawawa Road; P.O 23409; Dar es Salaam; Tel: +255 22 2668 445;
E-Mail:vc@out.ac.tz|| Website:www.out.ac.tz

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WATER

MBEYA WATER SUPPLY AND SANITATION AUTHORITY

When reply please quote:

Ref.No. OUT/PG202187131 15th July, 2024

DEPUTY VICE CHANCELLOR (ACADENIC) OF
THE OPEN UNIVERSITY OF TANZANIA
P.O.BOX. 23409
DAR ES SALAAM.

RE: REQUEST FOR DATA COLLECTION AND RESEARCH

Reference is made to your letter with Ref. No. OUT/PG202187131 Dated 09/07/2024, regarding to data collection and research for your student.

2. I hereby inform you that your request has been accepted.

3. The student is advised to contact/visit our Human Resource Office at Mbeya Water supply and Sanitation Authority (WSSA) Headquarters for more detailed clarifications at a time of his/her convenience.

4. Thank you for your continued cooperation

A. Alex
For, MANAGING DIRECTOR

MBEYA URBAN
MBEYA WATER SUPPLY AND
SANITATION AUTHORITY
P.O. BOX 2932
MBEYA

Sabasaba Road Mbeya, P.O. BOX. 2932 Mbeya, Tel: +255 25 2504298, Toll: 0800110088,
Email:md@mbeyawssa.go.tz