Monitoring And Evaluation Planning And Performance Of Water And Sanitation Projects In Langata Sub County, Nairobi County

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Abstract
The provision of clean water and adequate sanitation is essential for sustaining human life, health, happiness, and decency. In all environments where individuals live, learn, play, work, rest, and seek medical attention, a gradual strategy is needed to ensure that sanitation and drinking water operations are safe, equitable, accessible, available, and affordable for everyone. Approximately 13,000 kids under the age of five die every year from illness linked to a lack of access to clean water, inadequate sanitation, and poor hygiene, adding up to an estimated 484,000 children worldwide who are affected by these conditions. This study aims to assess the effect of monitoring and evaluation planning and performance of water and sanitation projects in Langata Sub County, Nairobi County in Kenya. The study used a descriptive study design. The study was conducted in Langata Sub County, Nairobi County, targeting officers providing water and sanitation services. The study targeted all 245 officials managing several water and sanitation projects by the county government of Nairobi. The study used a semi-structured questionnaire and interview schedule to collect data. The questionnaire was tested to ascertain its validity and reliability before the data collection exercise. The collected data was analysed in SPSS.
Keywords: Monitoring, Evaluation, M&E Planning, Water, Sanitation
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I. Introduction

In order to attain a healthy population, contentment and dignity, clean water and sufficient sanitation must be provided. Everybody's fair access to sufficient amounts of clean drinking water and sanitation services is one of the fundamental human rights (United Nations, 2015). In order to make sanitation and drinking water operational processes secure, reasonable, convenient, available, and reasonably priced for every person in all settings where people live, learn, play, work, rest, and receive medical care, a gradual approach is required (United Nations, 2015; UN-Habitat & WHO, 2010). The Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development (2030 Agenda) place a strong emphasis on water (United Nations, 2015b).

The goal of vision 2030 is to guarantee that everyone has access to better water and sanitation (World Health Organization, 2009; Zolnikov, 2018). Even though some regions of the world are making positive strides toward achieving these objectives, significant disparities still exist. In large parts of Asia, where approximately 675 million individuals lack access to better drinking water sources, this issue is still very problematic (UNICEF et al. 2004). When population growth is taken into account, it is implied that to achieve the MDG for sanitation alone, 2.1 billion individuals must have access to sanitation between 2002 and 2015. It took at least 44,300 facilities per day for the following 13 years that deliver toilets for 2.1 billion persons. Order to achieve the most basic level of sanitary circumstances throughout the next 13 years would necessitate an investment of $4.4 million U.S. dollars each day, assuming that basic dry sanitation installations cost $100 each (UN Millennium Project 2005).

In Sub-Saharan Africa, only 36% of people have access to basic sanitation (UNICEF et al. 2004). Rapid urbanisation in these emerging economies is commonly accompanied by excessive water demand and unauthorised interconnection to distribution channels in underprivileged neighbourhoods. There are various leaks and fractures in processes; which could easily be attended to with the proper implementation of M&E practices. Around 45 million cubic metres of water per day, with a yearly economic value of over $3 billion, are lost in emerging economies (World Bank, 2016). Widespread power failures cause the pipes to have low or negative stresses, which makes it possible for water contamination or sewerage to enter the water lines through every fracture. Cross-contamination in the distribution network has been linked with several of the world's biggest substantiated waterborne illnesses in the past two decades, including typhoid and cholera (Pallavi, & Shivaraju, 2019; Ibrahim, & Ahmad Sabri, 2018). The challenges brought on by water contamination must be lessened with the aid of monitoring and evaluation of the water supply and sanitary conditions.

Today, only about 50% of Kenya's urban residents have access to water. Only 40% of Nairobi is associated with a sewer system and less than a third have access to better sanitation (World Bank, 2020). As Nairobi has expanded, an increasing number of urban poor individuals have been forced into low-income, informal housing with scant to no access to water and sanitation. Utilizing commercial and consumer funding to promote investment projects, the Nairobi Sewage treatment Project, funded by the World Bank and installed from 2012 to 2018, worked to improve the accessibility of sanitation and drinking water for individuals living in urban settlers. However, in several incidences, Langata Sub County has been one of the areas most affected by poor water and sanitation services over the last decade.

The M&E planning process is also essential to the success of the project. It is divided into relevant factors related to finances, capacity, viability, schedule, and ethics by Kissi et al. (2019). The M&E structural framework, which is the third practice, aims to identify the justification for evaluating the performance and project aspects, how they are connected, and their core assumptions (Abrahams, 2015). The fourth technique is the M&E budget (Kimaro, Fourie & Tshiyoyo, 2018). The program's cost estimate should contain a precise and adequate budget allocation for the operational processes to carry out proper M&E. (Abrahams, 2015). Planning effectively guarantees that residual resources are made available for the project, resources are obtained accurately, the workforce is trained for the task, practical and core objectives are set, and functional timelines for delivery are outlined, among other things (United Nations Evaluation Group [UNEG], 2017). According to UNDP (2016), ineffective monitoring and evaluation procedures are to blame for approximately 74% of project monitoring and evaluation failures.

Statement of the Problem

There are about 2.2 billion people without safe drinking water and proper sanitation and this number is likely not to have a significant change by 2030. It is estimated by 2030, 1.6 billion individuals may not have access to safe drinking water. Similarly, 2.8 billion will not have access to proper sanitation facilities (United Nations, 2022). Approximately 13,000 kids under the age of five die every year from illness linked to a lack of access to clean water, inadequate sanitation, and poor hygiene, adding up to an estimated 484,000 children worldwide who are affected by these conditions (United Nations Children's Fund) (2017). Only 36% of people in Sub-Saharan Africa have access to basic sanitation (UNICEF et al. 2004). The goal of vision 2030 is to guarantee that everyone has access to better water and sanitation (World Health Organization, 2009; Zolnikov, 2018). It will take at least 44,300 facilities per day for the following 13 years that provide toilets for 2.1 billion people. One of the crucial steps in the project management cycle is M&E the progress of the project. Successful international progressive projects depend on a routine or ongoing process of data collection to assess the extent of performance relative to targets and objectives. In controlled environments, M&E greatly enhance project outcomes (Westland, 2006). Limitations in the use of M&E as a part of a project's management cycle are responsible for poor organizational performance. Performance of water and sanitation projects is geared by the introduction of new instruments, methods, and strategies for project M&E. Conclusive proof of the project's success in meeting its objectives is required by interested parties. In response to this expectation, project management adopts different approaches to monitoring and evaluation to realize implementation or operational project performance.

In many cases, M&E procedures are enforced as a donor demand, with 10% of the total project budget set aside for M&E purposes. Only a few projects have examined particular facets of M&E practice and their impact on project effectiveness. The majority of studies on this idea are generic. Only Kenyan projects with donor funding are considered in the evaluation of specific M & E practises, including process planning, technical expertise, stakeholder participation, management participation, and impact on project achievement. To comprehend the successes or failures of addendum developments and to make decisions about how to enhance project outcomes, a review of these M & E practices is essential. This study seeks to fill the existing gap by analysing the effect of monitoring and evaluation practices and the performance of water and sanitation projects in Langata Sub County in Nairobi County, Kenya. To determine the effect of M& E planning on the performance of water and sanitation projects in Langata Sub County.

Justification of Study

According to UNICEF and WHO estimates, 1.1 billion people do not as of now have access to better water supplies, and 2.6 billion do not have enough sanitation. In order to achieve the MDGs, adequate financial resources, long-term technological advancements, and brave politics are needed. The United Nations (U.N.) estimates that more than 14,000 people per day pass away from diseases transmitted by water.

Children are especially at risk from polluted water and poor sanitation. There are twice so many related deaths and impairments among kids under the age of 14. As well as 90% of the 5,000 children who pass away each day from diseases caused by contaminated water and poor sanitation do so before turning five.

Due to poor data collection and inadequate study on several water and sanitation-related concerns, the WHO chooses to believe the influence of dirty water and unsanitary practices is understated. The WHO predicts

that global phenomena like climate change may increase deaths and morbidity linked to water and sanitation by fostering surroundings for disease-carrying pests and supporting the spread of water-related diseases, which can be discussed by enhancing access to clean water and proper sanitation. In several incidences, Langata Sub County has been one of the areas most affected by poor water and sanitation services over the last decade.

II. Literature Review

All project implementation processes begin with planning. A study by Etoori et al. (2020) revealed the significance of M&E planning for enhancing the success of government projects. Assessing the expenses, personnel needs, and special resources needed for M&E work is a crucial skill in the planning process. Fundamentally, M&E must discuss the need for M&E expenditure during the early stages of intervention. This will enable M & E to conduct significant M&E efforts because the funds will be specifically allocated for M & E. Abraham (2014) contends that M&E estimates must be made for the intent of organising organisations and uses, but several investigators have attained the planning stage for the project or intervention phase (Nyonje et al 2012).

The M&E planning enables you to monitor performance levels at particular points in time and gain insight into the program's status as it is being implemented. The selection of suitable performance measures and the development of an information-gathering strategy are both stated by Phiri (2015). M&E planning verifies project performance data. To ensure that project efficiency has been enhanced and managed within the context of M & E planning, these initiatives should be planned. Effective planning guarantees that various resources are available for projects, that components are provided accurately, that the workforce receives training for their jobs, that specific goals are set, and that actual deliveries are characterised, among other things (UNEG, 2017). An ineffective strategic plan for effective M&E execution is to blame for up to 74% of failed M&E observed in various initiatives, according to UNDP (2015). The majority of organisations don't even allocate funds for M&E planning; instead, they use M&E procedures that have been copied and pasted, which will have an adverse effect on the execution activities and result in the failure of the M&E execution process as a whole. According to Thai (2017), M&E through are completed in a project for success. This is backed up by Ling (2018), whose research in Singapore led to the development of successfully monitored and reviewed plans that produced favourable outcomes. Regardless of whether a project is funded by governmental or non-governmental organisations, this is crucial to its success. UNDP (2015) outlined the essential components of a thorough M&E plan. These comprise planning for M&E time or length of time, planning for monetary system and human capital, preparation for anticipated results and appropriate measures, and guidelines that suffer from process and guidelines.

Resource planning and resource distribution are also a part of M&E planning. Internal knowledge can be hampered and M&E system failures can result if fair resource allocation is not made for this component of project management (Njama, 2015). Evaluating the results attained and their influence on the goals, evaluating the success of the project strategy, appropriate use of resources, potential costs, and initiatives, as well as different profit groups' Influence (Njama, 2015). All of these procedures, data gathering, and improved analysis call for adequate cash flow to be properly accounted for, allocated, and used in the project during the M&E of the project's objectives.

Theoretical Framework

The arguments surrounding the M&E concept were examined in the context of two relevant theories, notably program theory and the results-based management (RBM) view theory.

Program theory

Program theory, as conceptualized by Patton, Chen, Rossi, Patton, and Weiss (2002), focuses on the effective implementation and management of change. It employs logical models to illustrate program theories and their link to assessments over the years. This approach utilizes the logic model technique, visually connecting it to showcase program elements, including input, processes, outputs, and overall results (Hosley, 2009). Program theory plays a critical role in resource allocation, organizational planning, and ensuring the establishment and maintenance of the intended service system (Rossi, 2012). The logical model within program theory aids in clarifying program goals, identifying causal links in result chains, and establishing performance indicators for tracking progress.

Results-Based Management (RBM) Theory

Originating in Australia during the 1980s and gaining prominence in the 1990s under the OECD, RBM is a management approach aimed at achieving sustainable outcomes. RBM places a strong emphasis on clearly defined responsibilities and continuous monitoring and self-evaluation to achieve sustainable outcomes (UNDP, 2012). This continuous process involves regular evaluations, adjustments to plans based on lessons learned, and a focus on monitoring throughout the project implementation cycle (Hwang and Lim, 2013). Evaluations in RBM serve as external validation of reported results, emphasizing intended and attained outcomes, causal chains, and

the incorporation of findings into decision-making processes (Robert, 2010). The theory encourages the participation of relevant parties in evaluations to enhance the value of findings and suggestions (Clarke, 2011).

III. Methodology

This study uses an explanatory study design as it aims to illustrate the practice of monitoring and assessment as well as the performance of the water and sanitisation projects by the Nairobi County government. Particularly, the study used an explanatory study design to describe association M&E planning and influence the performance of the water and sanitisation projects by the Nairobi County government. The investigation was carried out in the county of Nairobi. The Nairobi County, which immediately succeeded Nairobi's operational City Council, is the outcome of Kenya's 2010 Constitution. The target population for this study was 245 officials managing several water and sanitation projects by the county government of Nairobi (County Government, 2022). The unit of observation was the completed projects, while the unit of analysis was water and sanitation project management employees. The unit analysis for this study is the water and sanitisation projects. The respondents for the study were project officers. Also, secondary data was collected from the Nairobi County ministry of water and environment reports and periodically to supplement the primary data. The participants for this research were chosen using a simple random sampling method. A list of officers working in Langata Sub County was obtained.

A sample is a representation of the findings of the analyses performed using the investigator sampling units that are comparable to those found in the investigator analysed of the complete population. The researcher used Slovin's formula to estimate the sample size (Slovin, 1960).

$n = N / (1+Ne^2)$.

Whereas:

n = no. of samples N = total population

e = error margin/margin of error which is approximated at $\alpha=0.075$

$n = 245 / [1+245 (0.075^2)]$

$n = 103.022339 \sim 103$

This study used a questionnaire and interview schedule. The use of questionnaires in this study is significant in attaining data from the project officials managing water and sanitisation projects; these officials are ideally busy and therefore can answer them at their convenience. Interviews were used to target key government officials for an organisation affiliated with water and sanitation services in the County government of Nairobi; NEMA, UNEP, Athii River water board, the National government and the environment department for the county government. The pilot study was conducted targeting water and sanitation projects from the county government of Kiambu to assess the ability of the questionnaire to collect consistent data. Raw data was organised and cleaned after data collection. In order to enhance the quality of the reactions, data pre-processing comprised the assessment of any incorrect or incomplete reactions and correcting them. Statistical Package for Social Sciences was then used to codify and summarise the responses (SPSS). The field data was analysed using both quantitative and qualitative approaches. Continuous data was summarised using descriptive and inferential statistics. All parties involved were also informed of the study's intended conduct. Additionally, it was necessary to describe the study's purpose to each participant. The researcher informed participants of any advantages and disadvantages or results of their involvement in the research (Nachmias & Nachmias, 1996). The researcher verified that people involved in the study gave informed consent before proceeding with the study and did not in any way coerce respondents into providing information.

IV. Results

Out of the 103 questionnaires that were distributed, 78 questionnaires were returned and considered to have sufficient data, which gives a response rate of 76%. The majority of the respondents were male who accounted for 70.5% of all responses while the female accounted for 29.5% of the responses. Most of the respondents were aged between 36 and 45 years (39.7%) at the time of this study, the second largest proportion were participants aged between 26 and 35 years who accounted for 28.2% while those aged 46-55 accounted for 15.4%. Most participants reported that they had attained a diploma (46.2%) at the time of the study, 25.6% had attained a degree certificate, 23.1% had attained a certificate level of qualification and 5.1% reported having attained a master's level. Most participants who accounted for 67.9% reported that they had worked for 2 to 5 years in the organization. At least 23.1% had worked for 6-10 years while 7.7% and 1.3% had worked for less than 2 years and over 10 years respectively.

M & E Planning Practice and Perceived Performance of Water and Sanitation Projects

The table gives a thorough summary of respondents' perspectives on many aspects of strategies for monitoring activities inside organizations. The survey gathers information about the following topics: the suitability of monitoring plans for use in organizational functions; the level of employee training regarding effective monitoring planning techniques; the use of network diagrams and frameworks for project scheduling;

the inclusion of stakeholder analysis surveys in resource planning; the fit between stakeholders' roles and their qualifications and experience; the use of project management software for monitoring plans; and the application of rapid assessments in project monitoring. This comprehensive analysis provides insightful information about the attitudes and procedures related to monitoring plans in the examined organizational setting.

Table 4.1: Rating of M & E Planning Practice in Implementation of Water and Sanitation Projects in Langata Sub County

	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Monitoring plans are well applicable in organisational activities	2(2.6)	8(10.4)	9(11.7)	53(68.8)	5(6.5)	77(100)
Employees are well trained on effective monitoring planning practices in organization projects	1(1.3)	4(5.1)	19(24.4)	50(64.1)	4(5.1)	78(100)
Network diagrams and frameworks are used in scheduling organization projects	2(2.6)	3(3.8)	18(23.1)	51(65.4)	4(5.1)	78(100)
The organization conducts stakeholder analysis surveys on its resources before it plans.	1(1.3)	3(4.0)	17(22.7)	51(68.0)	3(4.0)	75(100)
Stakeholders' roles match their experience and qualifications in the organization.	3(3.8)	3(3.8)	13(16.7)	55(70.5)	4(5.1)	78(100)
The organization uses project management software for monitoring plans.	0(0.0)	5(6.5)	18(23.4)	50(64.9)	4(5.2)	77(100)
Rapid assessment is conducted in monitoring plans used in projects	1(1.3)	7(9.0)	19(24.4)	47(60.3)	4(5.1)	78(100)

In the assessment of M&E planning practices for water and sanitation projects, the majority of participants strongly agreed that monitoring plans are well applicable in organizational activities, constituting 68.8% of respondents. Additionally, a significant proportion, 64.1%, agreed strongly that employees are well-trained in effective monitoring planning practices in organizational projects. Furthermore, a substantial percentage, 65.4%, expressed strong agreement that network diagrams and frameworks are actively employed in scheduling organizational projects. The majority of participants, 68.0%, also agreed strongly that the organization conducts stakeholder analysis surveys on its resources before planning. Stakeholders' roles matching their experience and qualifications in the organization garnered a strong agreement from 70.5% of respondents. Additionally, 64.9% of participants strongly agreed that the organization utilizes project management software for monitoring plans, highlighting a technologically oriented approach to project management. Lastly, in the context of rapid assessment in monitoring plans for projects, 60.3% of participants provided a strong agreement. Overall, the responses indicate a positive perception and widespread acceptance of effective M&E planning practices in the implementation of water and sanitation projects in Langata Sub County.

Table 4.6, examines the relationship between Monitoring and Evaluation (M&E) planning and the perceived performance of water and sanitation projects.

Table 4.2: Relationship between M & E Planning and Perceived Performance of Water and Sanitation Projects

Correlations			
		Perceived performance	Planning
perceived performance	Pearson Correlation	1	.903**
	Sig. (2-tailed)		.000
	N	78	78
Planning	Pearson Correlation	.903**	1
	Sig. (2-tailed)	.000	
	N	78	78
**. Correlation is significant at the 0.01 level (2-tailed).			

The table indicates that the Pearson Correlation between perceived performance and planning is .903, and this correlation is statistically significant at the 0.01 level (2-tailed). The Pearson Correlation coefficient of .903 signifies a very strong positive correlation between perceived performance and planning. The p-value (Sig. or Significance) of .000, which is less than 0.01, further confirms the statistical significance of this correlation.

This implies that there is a highly significant relationship between M&E planning and the perceived performance of water and sanitation projects. The strong positive correlation suggests that as one variable (e.g., planning) increases, the other variable (e.g., perceived performance) also tends to increase. This finding indicates that effective M&E planning is associated with a higher perceived performance of water and sanitation projects.

V. Conclusion Of The Study

The study concludes that M&E planning practices significantly contributed to the performance of water and sanitation projects with a very strong positive correlation (Pearson Coefficient = .903) established between these practices and the perceived performance of water and sanitation projects.

VI. Recommendations Of The Study

The study recommends that water and sanitation projects consider standardizing the approach to baseline data collection before commencement to address the diverse opinions observed. Additionally, emphasis should be placed on the prompt and quality collection of baseline data to enhance project planning and evaluation.