

Monitoring and Evaluation Budget and Performance of Water and Sanitation Projects in Nakuru County, Kenya

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Abstract: *Water and sanitation services in Nakuru County suffers from a host of problems including inadequate water production and weak institutional capacity. These challenges persist despite the county government's efforts to alleviate them. Therefore, the effectiveness of the monitoring and evaluation budget raises major concerns. The current study evaluated the influence of monitoring and evaluation budget on the performance of water and sanitation projects in Nakuru County. The study was anchored by participatory monitoring and evaluation theory. The study adopted a cross-sectional research design. The target population was the 192 project managers, monitoring and evaluation officers, and property management agencies. A sample of 130 respondents was obtained through stratified random sampling. Data was collected through a structured questionnaire. Descriptive and inferential analysis methods were used. The data analysis was aided by Statistical Packages for Social Sciences (SPSS). Descriptive findings established that monitoring and evaluation budget influence the performance of water and sanitation projects. The inferential findings showed a significant relationship between monitoring and evaluation budget and performance as depicted by a correlation coefficient ($r=0.270$; $p=0.003$). This means that water and sanitation projects' performance was influenced by monitoring and evaluation budget. As per regression analysis results, the coefficient of determination was 0.073, hence monitoring and evaluation budget explained 7.3% of the variation in the performance of water and sanitation projects in Nakuru County. Therefore, the performance of water and sanitation projects was dependent on monitoring and evaluation budget. The study recommend the Nakuru County Government to embed monitoring and evaluation budget in policy frameworks and institutional guidelines to improve the performance of water and sanitation projects.*

Keywords: *Monitoring and Evaluation Budget, Performance, Water and Sanitation Projects*

1. Introduction

Water and sanitation projects vitally promote access to clean and safe water sources, along with appropriate sanitation amenities and services (Callistus & Clinton, 2018). These projects focus on creating or restoring water supply systems, boreholes, and water treatment infrastructure. As such, they are integral to improving public health and living conditions of the people. Effective project management relies significantly on the crucial role of monitoring and evaluation practices (Kissi, Agyekum, Baiden, Tannor, Asamoah, & Andam, 2019). These practices encompass structured methodologies and procedures aimed at monitoring, assessing, and analyzing different facets of a project's entire lifecycle. Furthermore, these practices enhance both accountability and transparency by furnishing data-driven insights into the project's advancement and outcomes. Ultimately, the incorporation of monitoring and evaluation into project management procedures nurtures ongoing enhancements and enhances the probability of achieving project success (Mbithi, 2020). The budget for monitoring and evaluation encompasses a dedicated portion of financial resources within the overall project budget (Kabeyi, 2019). This is specifically reserved for activities associated with monitoring and evaluation procedures. These funds are allocated to facilitate the organized tracking, evaluation, and analysis of the project development. Moreover, the M&E budget plays a pivotal role in ensuring the effectiveness, sustainability, and impact of water and sanitation projects. However, millions of people in poor nations still lack access to clean water and adequate sanitation facilities despite enormous efforts by governments and international organizations to improve water and sanitation (Baumeister, 2019). According to the Nakuru County Government, (2019); only 59.4% of the population have access to improved sanitation facilities; and only 73.2% have access to safe drinking water. These issues result in insufficient water production, with only 38% of the population being served by piped water systems and the majority of the population relying on unimproved water sources. Also, there are considerable financial obstacles to operating and maintaining the water supply and sanitary facilities, as

well as insufficient institutional ability. These difficulties have had an adverse effect on poverty levels and health, with diarrhea alone accounting for 1000 annual fatalities according to World Health Organization (WHO, 2019).

The strategic plan for water and sanitation projects in Nakuru has also fallen short of expectations; despite having M&E in place to monitor project performance, sabotage has prevented M&E from serving its intended function and purpose (UNICEF & WHO, 2021). Additionally, the position and function of M&E in these projects intended to advance water and sanitation development have not yet been determined. The usage of M&E has been made mandatory for donors and the government to support projects, but its placement, function, and importance have never been considered throughout project execution (Owiti & Onyango, 2020). Any water and sanitation project must include monitoring and evaluation (M&E) to evaluate the efficacy and efficiency of the applied measures (Kariuki, 2022). It is unknown, nevertheless, how much M&E operations affect how well water and sanitation projects in Nakuru County operate. The goal of this study was to determine how monitoring and assessment budget affect the performance of water and sanitation projects in Nakuru County, Kenya.

2. Objective of the Study

The objective of the study was to determine the influence of monitoring and evaluation budget on performance of water and sanitation projects in Nakuru County.

3. Literature Review

The Monitoring and Evaluation budget plays a crucial role in shaping the performance of water and sanitation projects (Diale & Nethengwe, 2019). A well-funded M&E budget ensures that adequate resources are allocated for the continuous monitoring and evaluation of project activities, allowing for effective tracking of progress and identification of areas that require improvement (Abdi & Kimutai, 2018). With a robust M&E budget, project managers can implement rigorous monitoring systems, gather accurate data, and conduct timely evaluations, enabling them to make informed decisions and take corrective measures promptly. Additionally, a well-funded M&E budget allows for the employment of skilled personnel and the use of advanced technologies, enhancing the efficiency and accuracy of data collection and analysis. By providing the necessary financial resources, the M&E budget empowers water and sanitation projects in Nakuru County to optimize their performance, improve accountability, and deliver sustainable outcomes for the community (Gibson & Brittain, 2018).

The performance of water and sanitation projects refers to the extent to which these projects are achieving their intended goals and objectives (Kepkemoi, Kwasira, & Muigai, 2018). It includes evaluating the initiatives' efficacy, efficiency, sustainability, and effects on the target population. The quality and quantity of water supplied, the affordability and accessibility of sanitation facilities, the dependability and durability of the infrastructure, and the social and economic advantages of the projects to the community are all factors that affect how well water and sanitation projects perform. Performance evaluations are essential for identifying project management and implementation strengths and shortcomings as well as for creating plans to deal with any potential problems (Jackson & Ben, 2019). To make sure that water and sanitation initiatives are improving public health and socioeconomic development in the communities they serve, it is crucial to measure their effectiveness.

Project stakeholders actively participate in the monitoring and evaluation of projects according to the Participatory Monitoring and Evaluation (PM & E) theory (Ahmed & Abdullahi, 2017). This methodology places a strong emphasis on involving community people, project beneficiaries, and other stakeholders in the M&E procedure to make sure that the assessment is accurate and pertinent to community needs. PM&E is especially important for the performance of water projects since it enables the monitoring of project goals while including the community (Phiri, 2019). The PM&E approach can be particularly useful in the context of water projects for assessing progress toward project objectives and finding areas where improvements in terms of budget can be made. For instance, the PM&E approach can be used to track changes in water quality over time, evaluate the efficacy of water management practices, and monitor access to sanitary facilities and clean water (Oluwadare & Adeniji, 2019).

According to participatory monitoring and evaluation theory, the PM & E strategy can help to guarantee that the evaluation is pertinent to the needs and priorities of the community (Quashie-Sam & Adu, 2020). Figure 1 shows the relationship between monitoring and evaluation budget and performance of water and sanitation projects. The key indicators of monitoring and evaluation budget comprised budget allocation, adequacy and utilization. On the other hand, the indicators of project performance (response variable) included efficiency, timeliness and stakeholder satisfaction.

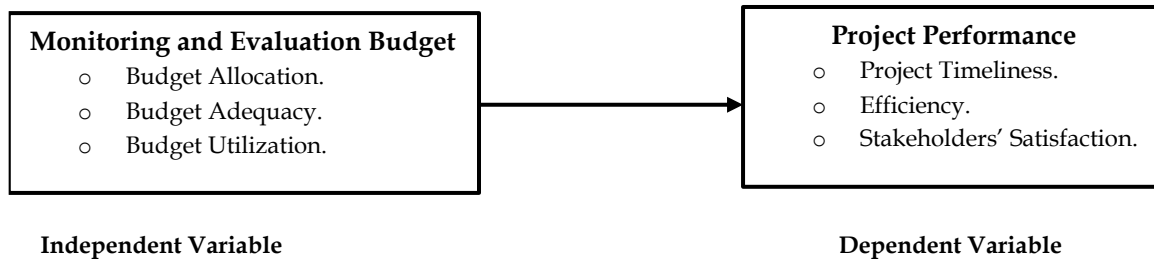


Figure 1: Conceptual Framework

Empirical studies related to monitoring and evaluation budget have been conducted in the past. Rotich, Mukulu, and Paul (2021) conducted a study on the influence of budget planning on implementation of water construction projects in Bomet County. The findings indicated that the sufficiency of funds and budget plans affect the water project activities. Budget planning had a significant effect on the implementation of water projects. The study also revealed that the technology integration had a moderating effect on the relationship between budget planning and implementation of water projects. Uwiragiye and Mulyungi (2019) undertook a study on the influence of budgeting on project success in water for Life Project in Rwanda. The study's findings indicated that ineffective implementation of planned activities and resources resulted in project failure. It was also observed that inadequate budget implementation hampers the project's potential for success, leading to the failure of achieving project objectives. A study by Amai and Ruguru (2022) assessed the effects of budgetary allocation on monitoring and evaluation of nature-based enterprises projects in Kenyan water towers. The results established that budgetary allocation had a statistically significant effect on monitoring and evaluation of nature-based projects in the Kenyan water towers. Another research conducted by Smith and Johnson (2019) found a positive correlation between the allocation of adequate financial resources to the M&E budget and the overall success of such projects. The study revealed that a well-funded M&E budget enabled project managers to track progress, identify bottlenecks, and improve project implementation strategies. Furthermore, the study emphasized the importance of timely evaluations facilitated by sufficient budgetary provisions for M&E activities.

Research gaps were identified from the empirical studies. While the study by Rotich et al (2021) highlighted the significance of budget planning on implementation of water construction projects, there appears to be a research gap related to other aspects of monitoring and evaluation budget. These aspects include budget adequacy and efficiency and have been discussed in the current study. Further, the research took a generalist approach to project budget while the current study focused on budget for monitoring and evaluation activities. In the study by Amai and Ruguru (2022), budgetary allocation was a predictor for monitoring and evaluation of projects. However, the present study looked into the two variables as a predictor for project performance.

4. Methodology

The study applied a cross-sectional research design. Under this design, the researcher examines the data that been gathered at a specific moment in time from a sample population or a predetermined subset (Fan, Breslin, Callahan, & Iszatt-White, 2022). The study's objective was to describe how the monitoring and evaluation budget affected the performance of water and sanitation projects in Nakuru County, hence this design was appropriate. The target population was the 47 project managers and M&E officers working with Nakuru Rural Water and Sanitation Company (NARUWASCO) and Nakuru Water and Sanitation Services Company (NAWASSCO), and 145 property management agencies. Therefore, the total population was 192 respondents. A sample of 130 respondents was obtained from the population using stratified random sampling. The questionnaire was employed in data collection. Data was analyzed through descriptive and inferential methods. Under inferential analysis, correlation, and regression analysis were adopted to establish the relationship between monitoring and evaluation budget and performance of water and sanitation projects. Statistical Packages for Social Sciences (SPSS) aided data analysis. The model below was applied in regression analysis:

$$Y = \beta_0 + B_1X_1 + \epsilon$$

Where;

Y = Performance of Water and Sanitation Projects

β_0 = Constant

B_1 = Beta Coefficient

X_1 = Monitoring and Evaluation Budget

ϵ = Error of margin

5. Results

This section contains the descriptive and inferential results of the study. The results are based on the responses of 117 participants who completed the questionnaires in their entirety, out of the 130 questionnaires that were distributed.

5.1 Descriptive Statistical Results

The study sought to examine the effect of monitoring and evaluation budget on performance of water and sanitation projects. Descriptive statistical results are presented in Tables 1 and 2.

Table 1: Effect of Monitoring and Evaluation Budget on Performance of Water and Sanitation Projects

	n	SA 5	A 4	N 3	D 2	SD 1	Mean	Std. Dev
The allocated M&E budget adequately supports the monitoring and evaluation activities.	117	40.2%	32.5%	10.3%	11.1%	6%	3.90	1.220
The M&E budget allows for regular data collection and analysis	117	41.9%	32.5%	16.2%	3.4%	6%	4.01	1.126
The M&E budget allows for the hiring of skilled personnel with expertise	117	53.8%	21.4%	16.2%	8.5%	0%	4.21	1.005
The M&E budget supports the establishment of robust monitoring systems to track the progress and implementation of water and sanitation projects	117	50.4%	29.9%	13.7%	3.7%	2.6%	4.22	0.984
The M&E budget allows for the inclusion of beneficiary feedback and participation in the monitoring and evaluation processes	117	57.3%	18.8%	12.8%	6.8%	4.3%	4.18	1.157

The findings shows that 40.2% of the respondents agreed that allocated M&E budget adequately supports the monitoring and evaluation activities. The mean responses were 3.90 with standard deviation of 1.220. This implies that budget allocation increases the effectiveness M&E activities, which the performance of water and sanitation projects in Nakuru County. Based on the findings, 41.9% strongly and 32.5% also concurred, hence 74.4% of the respondents at least agreed (Mean=4.01; Std. Dev.=1.126) that the M&E budget allows for regular data collection and analysis. Regular data analysis assists project managers in making resource allocation more efficient. By gaining insights into resource utilization and pinpointing areas with the greatest need, they can enhance resource allocation to bolster project areas requiring additional support. Moreover, 53.8% of respondents strongly agreed (Mean=4.21; Std. Dev.=1.005) that the M&E budget allows for the hiring of skilled personnel with expertise. 50.4% of respondents strongly concurred (Mean=4.22; Std. Dev.=0.984) that the M&E budget supports the establishment of robust monitoring systems to track the progress and implementation of water and sanitation projects. The respondents strongly agreed (Mean=4.18; Std. Dev.=1.157) that The M&E budget allows for the inclusion of beneficiary feedback and participation in the monitoring and evaluation processes. Effective monitoring systems offer immediate insight into project advancements and undertakings. This prompt data accessibility enables project managers to detect any problems, obstacles, or deviations from the project schedule as they happen. As a result, necessary corrective measures can be swiftly implemented to maintain project alignment, reducing the likelihood of delays and budget overruns hence improving the performance of water and sanitation projects.

Table 2: Performance of Water and Sanitation Projects

	n	SA 5	A 4	N 3	D 2	SD 1	Mean	Std. Dev
The standard of the water and sanitation services is pleasing to the clients.	117	43.6%	30.8%	16.2%	3.4%	6%	4.03	1.133
The given water and sanitation services are dependable	117	53%	22.2%	17.7%	7.7%	0%	4.21	0.987
Reconnecting the water and providing other related services are done quickly	117	42.7%	33.3%	9.4%	9.4%	5.1%	3.99	1.171
Application and repair of new connections are completed quickly	117	44.4%	29.9%	16.2%	3.4%	6%	4.03	1.137
The project's implementation timeline is followed	117	53.8%	23.1%	16.2%	6.8%	0%	4.24	0.962
The money received is ring-fenced to be used to upgrade the services	117	53%	26.5%	13.7%	4.3%	2.6%	4.23	1.012
The project's efficiency in collecting money is great.	117	59%	18.8%	13.7%	6%	2.6%	4.26	1.068

The results in Table 2 established that 43.6% of respondents agreed (Mean=4.03; Std. Dev.=1.133) that the standard of the water and sanitation services is pleasing to the clients. This implies a positive outcome for the water and sanitation projects that is attributable to effective monitoring and evaluation budgets. 53% of the respondents also strongly agreed (Mean=4.21; Std. Dev.=0.987) that the given water and sanitation services are dependable. The dependability of the services is informed by the performance of the project. Moreover, the respondents agreed (Mean=3.99; Std. Dev.=1.171) that reconnecting the water and providing other related services are done quickly. Effective delivery of water reconnection and associated services play a vital role in enhancing the project's overall achievements. This results in elevated client contentment, subsequently leading to favorable project results. The respondents also noted that the project's implementation timeline is followed. The respondents strongly agreed (Mean=4.23; Std. Dev.=1.012) that the money received is ring-fenced to be used to upgrade the services. 59% of the respondents strongly agreed (Mean=4.26; Std. Dev.=1.068) that the project's efficiency in collecting money is great. The project's efficiency in collecting money is a critical component of project performance, particularly in terms of stakeholder satisfaction and timely execution.

5.2 Correlation Analysis Results

Correlation analysis was done to establish the relationship between monitoring and evaluation budget and performance of water and sanitation projects. The results are presented in Table 3.

Table 3: Correlation Analysis Results

		Project Performance
Monitoring and Evaluation Budget	Pearson Correlation	.270**
	Sig. (2-tailed)	.003
	n	117

** . Correlation is significant at the 0.01 level (2-tailed).

The results indicates the relationship between monitoring and evaluation budget and performance of water and sanitation projects was significant ($r=0.270^{**}$, $p=0.003$) at 1% significance level. The results underscores the integral role that monitoring and evaluation budget plays in shaping the successful execution and completion of water and sanitation projects. As such, the water and sanitation projects' performance was affected by monitoring and evaluation budget.

5.3 Regression Analysis Results

Regression analysis was conducted to determine the association between monitoring and evaluation budget and performance of water and sanitation projects. Results are presented in Tables 4, 5 &6.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.270 ^a	.073	.065	.83572

a. Predictors: (Constant), Monitoring And Evaluation Budget

The model summary shows that the coefficient of determination was $R^2=0.073$. This means that monitoring and evaluation budget accounted for 7.3% of variation in performance of water and sanitation projects. This means that monitoring and evaluation budget affected the performance of water and sanitation projects.

Table 5: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.333	1	6.333	9.068	.003 ^b
	Residual	80.319	115	.698		
	Total	86.652	116			

a. Dependent Variable: Performance

b. Predictors: (Constant), Monitoring and Evaluation Budget

The results in Table 5 shows that the ($F=9.068$; $p=0.003$) was significant at 95% confidence level. This shows that the regression model was significant. As such, the performance of water and sanitation projects was affected by monitoring and evaluation budget.

Table 6: Regression Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.884	.424		6.800	.000
	Monitoring and Evaluation Budget	.306	.102	.270	3.011	.003

a. Dependent Variable: Performance

The regression model $Y = \beta_0 + \beta_1 X_1 + \epsilon$ was interpreted as; $Y = 2.884 + 0.306 X_1 + \epsilon$. The beta coefficient ($\beta=0.306$; $p=.003 < 0.05$) was significant at a 95% confidence level. This implies that monitoring and evaluation budget affected the performance of water and sanitation projects in Nakuru County.

6. Conclusion

The study concludes that there a significant relationship between monitoring and evaluation budget and the overall performance of water and sanitation projects in Nakuru County. Adequate financial resources allocated for monitoring and evaluation activities streamlines the project process. This means that projects with adequate monitoring and evaluation budgets tend to achieve better outcomes in terms of quality, efficiency and stakeholder satisfaction.

7. Recommendation

The study recommend the Nakuru County Government to embed monitoring and evaluation budget in policy frameworks and institutional guidelines. They should allocate sufficient resources and support to ensure the sustainability of monitoring and evaluation efforts beyond the project's lifespan. This will lead to improved performance of water and sanitation projects.

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