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"The Role of Project Monitoring and Evaluation Practices on Sustainability of Drilled Community Water Point Projects in Lower Eastern Kenya"

The Role of Project Monitoring and Evaluation Practices on Sustainability of Drilled Community Water Point Projects in Lower Eastern Kenya

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Abstract

Water is a natural resource and a basic requirement for human, animal and plant life. Access to clean and safe drinking water is essential for human sanitation. There is uneven distribution of the water sources. In arid and semi-arid lands, people depend on rivers, streams, dams, springs and wells and boreholes to get water for both domestic and livestock use. Access to adequate and safe water for domestic use remains a perennial problem in Lower Eastern Kenya. To remedy the situation national government, county governments and NGOs resorted to drilling community water points. However, the drilling community water points become unsustainable in the long run by water drying up, stalling and even collapsing of the projects after the start. This study therefore sought to determine the effect of project monitoring and evaluation practices on sustainability of drilled community water-point projects in Lower Eastern Kenya. The study employed a concurrent triangulation research design. The scope of the study was limited to drilled community water-point projects in the lower Eastern Kenya. The unit of observation was one water executive committee chairperson manning the drilled community water projects in the selected regions. Thus, the target population were 1,308 water executive committee chairpersons. The sample size as obtained using Yamane formula was 306 water executive committee chairpersons who were selected through stratified random sampling. Primary data was used in the study with the questionnaire as the main data collection instrument. The study also involved interviews on the three county chief officers in the departments of water and sanitation in the three counties. Data was analyzed using SPSS Version 26.Data analyses involved descriptive and inferential statistics. The descriptive statistics comprised means and standard deviation while inferential statistics comprised Pearson correlation analysis and simple regression model. Test of hypothesis was done at 95% confidence interval. From the results, project monitoring and evaluation practices had positive and statistically significant relations with the sustainability of drilled water point projects. The study concluded that project monitoring and evaluation are significant determinants of the sustainability of drilled community water point projects in the counties of Kitui, Machakos and Makueni. The study recommended that the project managers ought to incorporate project monitoring and evaluation practices in any drilled community water point project they are undertaking. The practices enhance the success rate in project implementation. The project further recommended that the counties under study ought to formulate policies that ensures the strict adherence to the stipulated project monitoring and evaluation practices.

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Key Words: *Monitoring and Evaluation Practices, Sustainability and Drilled Community Water-Point Projects.*

1.0 Introduction

Water is a necessity for the survival of human beings. It is a source of life for every living thing (Feitelson, 2012). In 2020, 2.0 billion people globally lack access to safely managed drinking water (WHO, 2022). According to UN (2019), water scarcity affects more than 40 per cent of the global population and is projected to rise to 55% by 2050. Only 1% percent of the water on the Earth's surface is usable by humans and the remaining 99% of the usable quantity is situated underground (Balasubramanian, 2015).

Sustainability of drilled water is the continuous ability of the water points to provide short term, medium term and long-term social, environmental and economic benefits and be able to maintain high ecological and conservation systems for posterity (Bazaanah, 2019). UNEP (2015) also define sustainability as the ability to reduce long-term risks that are associated with the depletion of a resource, the fluctuations in the product liabilities, energy costs, waste and pollution management. The sustainable development goal number 6 provides a global effort for universal access to clean, equitable and affordable drinking water by the year 2030 (UNICEF, 2018).

The technique of bringing together several stakeholders with different points of view to decide how water should be handled is known as sustainability of the water sources (Morrison, 2003). Holistic management of water resources is required in order to ensure water sustainability. The sustainable use of surface water can be achieved by building dams properly, which would store water for later use (Oino, et al., 2015). If the amount of water entering and leaving the ground, as well as those being stored, is conserved, the ground water sources would be sustainable (Poff et al., 2016).

Water projects have been facing sustainability challenges including social, environmental and economic aspects. Presently, more than 99 percent of all water on Earth is not available for human use. This is because it is too saline or is frozen as glaciers, ice, or snow (Balasubramanian, 2015). Unsustainability on the social front is caused by the increasing population and increased poverty levels. Increasing human population diminishes the quantity of water that is available per person (Kativhu, *et al.,* 2022).Low-income persons are hard hit by the water scarcity more than high-income individuals. This is because the poor are not able to relocate anytime to seek clean water, unable to buy clean drinking water, unable to treat water and also unable to repair damaged water points (Schnoor, 2015).

In Kenya, water shortages have been a challenge that is experienced in most parts of the country. The water supply is less than the water demand by the growing population of the country. However, 56% of the Kenyan population have access to safe drinking water (Unicef, 2019) while 44 per cent of the Kenyans cannot access to safe water (WASREB, 2017). The natural renewable water resources of Kenya are mainly the catchments covered by the montane forests in the country's highland areas with a humid climate. The distribution of these water sources is said to be uneven both within and across. These catchments contribute over 75% of the surface water (Mulwa et al., 2021). This uneven distribution of the catchment areas in Kenya has led to adverse water shortage. Some of the other causes of water shortages included persistent droughts, forest degradation, poor management of water supply and contamination of water. The impact of this water shortage is greatly felt in the

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Arid and semi-Arid areas. The resultant effect of the shortage is poor sanitation and other health related risks in these areas (Marshall, 2011).

Because of the limited water sources, the supply of water to meet the needs of the country's population is critical (Musau, 2020). In order to enhance the sustainability of the water projects, effective project management practices should be encouraged. Furthermore, adequate funding, proper project management practices including monitoring and evaluation during the project cycle and carrying out community training is critical (Ochelle, 2012).

Lower Eastern parts of Kenya is located in an arid and semi-arid land. The region encompasses counties including Machakos, Makueni, Kitui and Kajiado. The rainfall in this region is both low and unreliable. The communities in this region largely depend on ground water for domestic, livestock and agricultural uses including irrigation purposes (Gevera et al, 2020). The major sources of water in this arid and semi-arid region are rivers, streams, dams, springs and wells. These sources have been supplemented by the drilling of boreholes by the local governments of these regions.

Access to adequate and safe water for domestic use remains a perennial problem in Lower Eastern Kenya. An estimated 69 percent of residents in Lower Eastern Kenyan cannot access adequate water for domestic use. In Makueni County, 64.3% households that use unimproved water sources, 35.7% access improved water sources and only 17.7% have access to piped water (Nema, 2020). In Makueni County, majority of the populations depend on surface and subsurface dams for water, which often do not hold sufficient water due to high evaporation rates during the dry seasons (Kamadi, 2020). In Machakos County, only 30% of the county residents can access adequate and safe water (Machakos County report, 2021), Institute of Economic Affairs (2013) indicated that 21 per cent main source of water was boreholes, 30 per cent water vendors and 15 per cent river sources and 22 per cent piped water connection largely in urban areas. In Kitui County, only 53 percent of households have access to safe water (Khalif, 2017).

To remedy the water problem, water drilling projects are being conducted in the region. The water drilling activity are supported by the Kenyan Government through the Ministry of Water, Sanitation and Irrigation, County governments and Nongovernmental organization. However, the sustainability of drilled water projects is faced with the issues relating to staling, completion out of budget and time scope. The failure is attributed to high recurrent costs, lack of interest by the local community, locating the project far from the community, mismanagement of the projects and inappropriate technology adopted. Furthermore, lack of community training and access to electricity have also been attributed to the borehole failure. Mulei and Gachengo (2021) indicated that 25-30 % of the drilled water projects in lower eastern are managed by the community become non-operational in the first three years after completion. These projects become unsustainable to the community over time. Unsustainable programs have a low impact on the community in the long term, thus wasting human, financial, and technical start-up investments.

2.0 Methodology

The study utilized a positivist research philosophy and a concurrent triangulation design. The target population was 1,308 water executive committee chairpersons of drilled community water-point projects in Lower Eastern Kenya. The study also targeted the 3 county chief officers in the departments of water and sanitation. Stratified random sampling was used to obtain a sample of the water management executive committee who participated in the study. The strata were the particular drilled community water-point projects in Kitui, Machakos and

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Makueni. Yamane, (1967) simplified formula was used to obtain 306 water management executive committee from the three counties. A census of all the 3 chief officers in the departments of water and sanitation was conducted. Primary data was collected using structured questionnaire for water management executive committee chairpersons and the interview guide for Chief Officers departments of water and sanitation. A pilot test was conducted on 10% of the sample size to determine the validity and reliability of data collection instrument. The study further conducted correlation and regression analysis. Person correlation was used to determine the strength of association between project monitoring and evaluation practices and sustainability of drilled community water-point projects. Linear regression analysis was done to determine the mathematical model that shows the relationship between project monitoring and evaluation practices and sustainability of drilled community water-point projects. The model estimated was presented as;

$Y = \beta_0 + \beta_1 X_1 + e$

Y = Sustainability of drilled water point projects

β_0, $\beta_1$are regression coefficients to be estimated.

X_1 = Monitoring and Evaluation Practices

e = error term

3.0 Literature Review

The study was anchored on the Theory of Change. Theory of Change (TOC) developed by Weiss, (1995) is a specific type of methodology for planning, participation, monitoring and evaluation that is used to promote social change. Theory of Change specifies long-term objectives and then maps in reverse to recognize needed preconditions. Theory of Change is essentially an extensive summary and image of exactly how and why a desired adjustment is expected to occur in a specific context. It is focused specifically on mapping out or "filling out" what has been called the "absent middle" between what a program or change initiative does (its activities or interventions) and also how these lead to preferred objectives being achieved (Davies, 2018). It does this by first identifying the desired long-lasting objectives and afterwards functions back from these to determine all the conditions (end results) that should be in place (and also just how these related to each other causally) for the goals to occur. These are all drawn up in an end results framework. The outcomes framework after that offers the basis for identifying what type of activity or intervention would certainly result in the end results recognized as prerequisites for attaining the lasting objective (McGilloway & O'Brien, 2017). With this approach, the precise link in between activities and the success of the long-lasting objectives is more completely understood. This results in better preparation, in that activities are connected to a detailed understanding of just how modification actually takes place. It likewise causes far better analysis, as it is feasible to determine progress in the direction of the accomplishment of longer-term objectives that surpasses the recognition of program outcomes.

A review of relevant empirical literature was also conducted. Ukato et al. (2024) studied on technical support as a catalyst for innovation and special project success in oil and gas. It was evident that technical support plays a pivotal role in driving innovation and ensuring the success of special projects within the oil and gas industry. Technical support teams provide essential expertise, resources, and support infrastructure to address operational challenges, optimize processes, and enhance asset sustainability. A research study was conducted by

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Minyiri and Muchelule (2018) on the influence of monitoring and evaluation on water project sustainability in Migori County, Kenya. The study applied descriptive approach through survey design. There is a significant relationship between monitoring and evaluation water project sustainability. The study however presented a contextual gap as the current study is focused on the sustainability of drilled water point projects in Lower Eastern Kenya.

Waweru and Kimathi (2022) carried out a study on project monitoring and evaluation practices on sustainability of national government water and sanitation projects in Machakos County, Kenya. The study concluded that project monitoring and evaluation planning has a positive and significant influence on the sustainability of National Government water and sanitation projects in Machakos County, Kenya. A study was conducted by Titomet(2017) on the influence of monitoring and evaluation and sustainability of water projects in Kenya with a focus on Mwala water project, Machakos. The study employed descriptive research design with a sample of 226 selected households. The results of the study revealed that financing of activities related to monitoring and evaluation had a significant effect on the sustainability of the water projects. The current study seeks to analyze the effect of project monitoring and evaluation on the sustainability of drilled water projects using concurrent triangulation design.

A research study was done by Muniu (2017) on monitoring and evaluation practices and sustainability of community water projects in Kenya with a focus on Nyeri County. The study employed mixed method research based on concurrent triangulation with a sample size of 290 respondents. The findings of the study indicated that project management practicesand decision making in the water projects had a significant impact on sustainability of water projects. In Embu County, a study was conducted by Mukaria (2021) on monitoring, evaluation practices and sustainability of community-based projects. The study used descriptive research design with a sample of 55 respondents. The results of the study showed that monitoring and evaluation practices when enhanced enhances the sustainability of the community projects in Embu County. A research was conducted by Muchelule (2018) on the influence of monitoring practices on projects sustainability of Kenya state corporations. The results revealed that monitoring and evaluation plays a key role not just in the sustainability of the government funded projects but also the other community projects and hence should be put into consideration. The current study seeks to analyze the effect of project monitoring and evaluation on the sustainability of drilled water projects.

4.0 Results

4.1 Descriptive Results

To determine the effect of project monitoring and evaluation on sustainability of drilled community water point projects in Lower Eastern Kenya, the researcher utilized primary data that was collected using questionnaires and interview guides and analyzed using SPSS. The descriptive results were presented in the form of frequencies, percentages, mean and standard deviations. The Likert scale used was 1 represented Strongly Disagree (SD), 2 for Disagree (D), 3 for Neutral (N), 4 for Agree (A) and 5 for Strongly Agree (SA). A mean of 1 indicates that the responses are strongly in disagreement, a mean of 2 indicates that the responses were in disagreement, a mean of 3 pointing out that the responses were neutral, a mean of 4 indicating that the responses were in agreement and a mean of 5 indicating that the responses were in strong agreement. The coefficients of variation ratings were determined as 0 to 25% very good, 26 to 50% good, 51 to 75% fair, and 76 to 100% poor. The descriptive results are presented in Table 1.

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Table 1: Descriptive Results for Project Monitoring and Evaluation

Statement	SD	D	N	A	SA	M	S Dev	CV (%)
I participate in ensuring that financial resources of the project are prudently used.	4.2%	11.2%	13.6%	65.9%	5.1%	3.6	0.9	25.00
The executive committee members are often updated by project sponsor when the financial resources of the water project will be availed.	2.8%	10.7%	16.8%	65.4%	4.2%	3.6	0.8	22.22
I am involved in overseeing the day-to-day use of the water project financial resources and equipment	7.9%	12.1%	59.3%	14.5%	6.1%	3.0	0.9	30.00
The executive committee members have designed project assessment schedule for regular project evaluation	7.9%	15%	64.5%	6.1%	6.5%	2.9	0.9	31.03
The stakeholders are always provided with regular assessment reports	2.3%	2.3%	22.9%	60.3%	12.1%	3.8	0.8	21.05
The executive committee members are involved in conducting baseline survey to monitor the progress of the drilled water project	2.3%	4.2%	20.6%	56.5%	16.4%	3.8	0.8	21.05
The executive committee members conduct regular meetings with the community to analyze the progress of the project work plan	2.8%	0.9%	27.6%	57%	11.7%	3.7	0.8	21.62
Adjustments are at times made on the work plan to enable the timely realization of the project objectives	2.3%	2.3%	23.8%	61.7%	9.8%	3.7	0.8	21.62
The executive committee members works with a set work schedule when monitoring and evaluating project progress	1.9%	5.1%	18.2%	63.6%	11.2%	3.8	0.8	21.05
Aggregate Mean and Standard Deviation						**3.5**	**0.8**	**23.85**

As per the results in Table 1, 65.9% of the respondents concurred that they participated in ensuring that financial resources of the project are prudently used. However, 5.1% recorded a strong agreement with the question while 13.6% did not take sides regarding the question with a mean of 3.6 and a respective standard deviation of 0.9 implying that on average, the respondents were in tandem. Regarding whether the respondents were often updated by

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project sponsor when the financial resources of the water project would be availed, 65.4% of the respondents concurred, 16.8% being neutral and 4.2% recording a strong concurrence with a mean and standard deviation of 3.6 and 0.8 respectively pointing out to an agreement among the responses on average. In an interview with one of the Chief Officers, the officer had this to say, "Monitoring a project is a recipe for its success. This is because it ensures that its implementation is done in accordance with the project scope."

Furthermore, 14.5% of the responses were in agreement with the question 'I am involved in overseeing the day-to-day use of the water project financial resources and equipment' while 6.1% recording strong concurrence and 59.3% did not take sides. The mean of the responses was 3.0 and a standard deviation was 0.9 implying that on average, the response was neutral. 64.5% of the study participants did take position with regards the statement 'The executive committee members have designed project assessment schedule for regular project evaluation'. However, 6.1% were in tandem with 6.5% strongly concurring with a mean and standard deviation of 2.9 and 0.9. This gives the implication the responses were neutral on average. In an interview with one of the Chief Officers, the officer had this to say, "Effective project monitoring enhances the success rate of the project. It ensures that the implementation of the project is done in accordance with the specifications as well as the set time limits."

On whether the stakeholders were always provided with regular assessment reports, 60.3% of the participants were of a moderate view, 12.1% recording a strong view with 22.9% being neutral. The mean and the standard deviation recorded by the question were 3.8 and 0.8 respectively implying that, on average the respondents were in agreement. 56.5% of the respondents indicated an agreement that they were involved in conducting baseline survey to monitor the progress of the drilled water project, while 16.4% strongly concurred in the question and 20.6% being neutral with a mean of 3.8 and a standard deviation of 0.8 indicating an agreement among the responses. In an interview with one of the Chief Officers, the officer had this to say, "Some of the challenges encountered during project monitoring include the lack of regular visit by the county officers to the field. However, before complete payments are made to the contractors, a thorough evaluation of the project is done to ascertain whether the project has met the set specifications."

With regards the statement 'The executive committee members conduct regular meetings with the community to analyze the progress of the project work plan,' 27.6% of the responses did not take sides, 57% indicated an agreement and 11.7% recording a strong agreement with a mean and standard deviation of 3.7 and 0.8 respectively. These results indicate an agreement among the responses on average. On whether adjustments are at times made on the work plan to enable the timely realization of the project objectives, 61.7% of the responses were in agreement, 9.8% in strong agreement and 23.8% taking a neutral position with a mean and SD of 3.7 and 0.8 in that order. This implies an on average the respondents were in concurrence.

Finally, 63.6% of the respondents agreed that work with a set work schedule when monitoring and evaluating project progress while 18.2% taking a neutral stand and 11.2% indicating a strong agreement with a mean of 3.6 and a standard deviation of 0.8 respectively. The aggregate mean and standard deviation for the statements on project monitoring and evaluation was 3.5 and 0.8 respectively implying overage the statements were in concurrence on average with project monitoring and evaluation practices of the drilled community water point projects in lower Eastern Kenya. The overall coefficient of variation the statements on project monitoring and evaluation practices was 23.85% implying that the variation was low and therefore very good. In an interview with one of the Chief Officers, the officer had this to

say, "To enhance the quality of monitoring, the county has incorporated measures including the involvement of the community in monitoring the project. The county also ensures that payments for the project are done once the officers and the community are satisfied that the project has med the specifications in place."

From the quantitative results, the respondents were in agreement that they participate in ensuring that financial resources of the project are prudently used and the executive committee members are often updated by project sponsor when the financial resources of the water project would be availed. The respondents were also in agreement that they were always provided with regular assessment reports and are involved in conducting baseline survey to monitor the progress of the drilled water project. There was also agreement among the respondents that at times, adjustments are at times made on the work plan to enable the timely realization of the project objectives and that the members work with a set work schedule when monitoring and evaluating project progress. The respondents were however neutral with regards whether they were involved in overseeing the day-to-day use of the water project financial resources and equipment and whether they have designed project assessment schedule for regular project evaluation. The results concur with the qualitative findings which indicated that the involvement of the community in monitoring the project. The county also ensures that payments for the project are done once the officers and the community are satisfied that the project has met the specifications in place. Before complete payments are made to the contractors, a thorough evaluation of the project is done to ascertain whether the project has met the set specifications.

4.2 Correlation Analysis

Correlation analysis is significant in determining the correlation among the variables in the study. The analysis is used to determine the strength and direction of correlation among the variables under review. The correlation values range from +1 to -1. A value of +1 implied perfect positive correlation, while -1 perfect negative correlation. 0.000 implied no correlation, 0.001 to 0.250 weak correlation, 0.251 to 0.500 moderately strong correlation, 0.501 to 0.750 strong correlation and finally 0.751 to 1.000 meant very strong correlation. The independent variable was project monitoring and evaluation while the dependent variable was the sustainability of the drilled community water point projects in Lower Eastern Kenya covering the counties of Kitui, Makueni and Machakos. The correlation results are presented in Table 2.

Table 2: Correlation Matrix

		Sustainability of drilled community water point projects	Project Monitoring and Evaluation
Sustainability of drilled community water point projects	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	214	
Project Monitoring and Evaluation	Pearson Correlation	.558**	1
	Sig. (2-tailed)	0.000	
	N	214	214

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

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From the results, the correlation between project monitoring and evaluation and sustainability of drilled community water point projects was strong, positive (0.558) and statistically significant (p=0.000<0.05) which lies between the range 0.501-0.750 an indication that the correlation was strong and positive.

4.3 Regression Analysis

A simple linear regression analysis was conducted to determine the relationship between project monitoring and evaluation and sustainability of drilled community water point projects. The hypothesis tested was,

H_{03}: Monitoring and evaluation practice has no statistically significant effect on sustainability of drilled community water-point projects in Lower Eastern Kenya.

The model summary results are presented in Table 3.

Table 3: Model Summary for Monitoring and Evaluation Practices and Sustainability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.558[a]	0.312	0.309	0.30851

a Predictors: (Constant), Project Monitoring and Evaluation
b Dependent Variable: Sustainability

From the regression findings, project monitoring and evaluation gives an explanation of31.2% of the total changes in the sustainability of drilled community water point projects in lower Eastern. An R Square of 0.312 supports this. Thus, project monitoring and evaluation is significant in explaining the sustainability of drilled community water point projects. Table 4 presents the ANOVA results.

Table 4: ANOVA for Monitoring and Evaluation Practices and Sustainability

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.146	1	9.146	96.094	.000b
	Residual	20.178	212	0.095		
	Total	29.324	213			

a Dependent Variable: Sustainability
b Predictors: (Constant), Project Monitoring and Evaluation

The significance of the model was tested using a two-tail approach. From the results, the overall model was statistically significant (0.000<0.05). The results posit that project monitoring and evaluation is an important component in the sustainability of drilled community water point projects. An estimated F value of 96.094, which is greater than the critical F value 3.8415 ($F_{1, 212}$) supports the results of this study. Table 5 presents the simple linear regression coefficient results.

Table 5: Regression Coefficients for Monitoring and Evaluation Practices and Sustainability

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.883	0.177		10.611	0.000
	Project Monitoring and Evaluation	0.555	0.057	0.558	9.803	0.000

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a Dependent Variable: Sustainability

$Y= 1.883+ 0.555X_1$

It is evident that the constant of the estimated simple regression model is positive implying that project monitoring and evaluation is not the only variable that can be used to explain the sustainability of drilled community water point projects. Thus, there are other variables significant in giving explanation to the sustainability of drilled community water point projects. Furthermore, the linear relationship between project monitoring and evaluation and sustainability of drilled community water point projects was both positive and statistically significant (β =0.555, p=0.000<0.05). Thus, a unit improvement in project monitoring and evaluation yields a significant 0.555 units improvement in the sustainability of drilled community water point projects.

The null hypothesis, project monitoring and evaluation has no statistically significant effect on sustainability of drilled community water-point projects in Lower Eastern Kenya was rejected, and the study failed to reject the alternative hypothesis that project monitoring and evaluation significantly affect the sustainability of drilled community water-point projects in Lower Eastern Kenya. Monitoring entails the systematic collection of data to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds (Béné, *et al.,* 2015). Evaluation refers to the process of determining the significance of a development activity, policy or program. Therefore, monitoring and evaluation are systematic (Tripathi, 2021).

Monitoring and evaluation help supporting the project implementation with accurate reports, contribute to knowledge sharing, helps in enhancing accountability and gives an opportunity for stakeholders feedbacks (Mgoba &Kabote, 2020). It also highlights the project's achievements, adjustment of objectives and build capacity, confidence and self-reliance (Hobson et al., 2016). Monitoring and evaluation allow judgement of the benefits of a programme against its costs and identifying which intervention has the highest rate of return. The results of the study are in concurrence with the findings of Titomet (2017) who revealed that financing of activities related to monitoring and evaluation had a significant effect on the sustainability of the water projects. Participatory data collection and the skills of the water project staff in the monitoring and evaluation had a strong and significant effect on the sustainability of water projects in Machakos County.

Additionally, the findings of Muniu (2017) indicated that project management practices and decision making in the water projects had a significant impact on sustainability of water projects. The participation of the community in resource mobilization including labour and the funds for operation and maintenance. The findings of Mukaria (2021) showed that project planning had a significant impact on the existence of community-based operations in Embu County. The monitoring and evaluation practices when enhanced enhances the sustainability of the community projects in Embu County. Community training on the community projects enhances sustainability of the water projects. Finally, Muchelule (2018) results revealed that the government's budgetary allocation on monitoring and evaluation activities influenced the sustainability of the projects funded by the government. Other than the adequate funding, the staff carrying the roles of the monitoring and evaluation roles are inadequate also affecting the sustainability of the government-funded projects. Monitoring and evaluation play a key

role not just in the sustainability of the government funded projects but also the other community projects and hence should be put into consideration.

4.4 Conclusion

The study concludes that project monitoring and evaluation is a significant determinant of the sustainability of drilled community water point projects in the counties of Kitui, Machakos and Makueni. A unit improvement in project monitoring and evaluation yields a significant improvement in the sustainability of drilled community water point projects. Therefore, the null hypothesis, project monitoring and evaluation has no statistically significant effect on sustainability of drilled community water-point projects in Kitui, Machakos and Makueni Counties was rejected, and the study concluded that project monitoring and evaluation significantly affect the sustainability of drilled community water-point projects in Kitui, Machakos and Makueni Counties. Monitoring and evaluation help supporting the project implementation with accurate reports, contribute to knowledge sharing, helps in enhancing accountability and gives an opportunity for stakeholders'feedbacks. It also highlights the project's achievements, adjustment of objectives and build capacity, confidence and self-reliance. Monitoring and evaluation allow judgement of the benefits of a programme against its costs and identifying which intervention has the highest rate of return.

4.5 Recommendation

The study recommends that the project managers ought to incorporate project monitoring and evaluation practices in any drilled community water point project they are undertaking. Incorporating these practices enhances the success rate as well as the sustainability rate of the project and ensures that the resources including the financial resources dedicated to the project are well utilized to the maximum benefit of the community. The County governments of Kitui, Machakos and Makueni ought to formulate policies that ensures the strict adherence to the stipulated project monitoring and evaluation practices. The project managers should also be made known to the public. This enhances the level of transparency, accountability as well as the rate of success in the implementation of the drilled community water point projects.

References

Alin, A. (2010). Multicollinearity: *Computational Statistics*, *Wiley Interdisciplinary Reviews: 2*(3), 370-374.

Ba, A. (2021). How to measure monitoring and evaluation system effectiveness?. *African Evaluation Journal*, *9*(1), 953.

Balasubramanian, A. (2015). *The World's Water,* Mysore: University of Mysore.

Bazaanah, P. (2019). Sustainability of Rural Communities Drinking Water Systems and Local Development Projects in the Bole, West and Central Gonja Districts of the Savannah Region, Ghana. *Review of Social Sciences*, *4*(1), 16-25.

Béné, C., Frankenberger, T., & Nelson, S. (2015). Design, monitoring and evaluation of resilience interventions: conceptual and empirical considerations. *Institute of Development Studies*, 1(459), 1-26.

Davies, R. (2018). Representing Theories of Change: Technical Challenges with Evaluation Consequences. *Journal of Development Effectiveness*, *10*(4), 438-461.

Feitelson, E. (2012). What is Water? A Normative Perspective. *Water Policy*, *14*(S1), 52-64.

Gevera, P. K., Cave, M., Dowling, K., Gikuma-Njuru, P., &Mouri, H. (2020). Naturally Occurring Potentially Harmful Elements in Groundwater in Makueni County, Southeastern Kenya, *Geosciences Journal*, *10*(2), 1-22.

Gevera, P. K., Dowling, K., Gikuma-Njuru, P., &Mouri, H. (2022). Public knowledge and perception of drinking water quality and its health implications: an example from the Makueni County, South-Eastern Kenya. *International Journal of Environmental Research and Public Health*, *19*(8), 4530.

Hobson, K., Hamilton, J., & Mayne, R. (2016). Monitoring and Evaluation in UK Low-Carbon Community Groups: Benefits, Barriers and the Politics of the Local. *Local EnvironmentJournal,* 21(1), 124-136.

Institute of Economic Affairs. (2013). A Paper Presented at County Government of Machakos on *Integrity in Water Supply Service Delivery in the Public Sector*. Retrieved on 27th September 2022 from https://ieakenya.or.ke/download/integrity-in-water-supply-service-delivery-in-the-public-sector-in-machakos-county/.

Kamadi, G. (2020). *Kenyan County Tackles Water Woes with Locally Led Climate Fund.* Retrieved August 29th, 2022 from www.reuters.com.

Kativhu, T., Madzivanyika, T. T., Nunu, W. N., Macherera, M., &Chinyama, A. (2022). Sustainability of water facilities under community based management in Zimbabwe. *AQUA—Water Infrastructure, Ecosystems and Society*, *71*(1), 19-30.

Khalif, A. (2017). *How a rock solved water shortage problem in a Kenyan village*. Retrieved August 29th 2022 from https://next.blue/articles/how-a-rock-solved-water-shortage-problem-in-a-kenyan-village.

Kim, Y., Han, M., Kabubi, J., Sohn, H. G., & Nguyen, D. C. (2016). Community-based rainwater harvesting (CB-RWH) to supply drinking water in developing countries: lessons learned from case studies in Africa and Asia. *Water Science and Technology: Water Supply*, *16*(4), 1110-1121.

Kitui County (2021). *Capital Works Completed, Ongoing and Stalled Projects*. Retrieved on August 30th 2022 from https://tanathi.go.ke/preports/Kitui-County-Projects.pdf.

Machakos County Comprehensive Water Program, (2020), *Machakos County List of Boreholes*. Retrieved August 31st 2022 from https://machakosgovernment.co.ke/download/machakos-county-list-of-boreholes/

Machakos County report (2021). *Water, Irrigation, Environment and Natural Resources*. Retrieved August 29th 2022 from https://machakosgovernment.co.ke/water-and-irrigation-2/.

Makueni County Government report, (2017). *Water Agenda*. Retrieved August 31st 2022 from https://makueni.go.ke/2017/departments/environment/water-agenda/

Makueni County Government, (2019): *Kaunguni residents urge government to prioritize water projects*. Retrieved August 26th 2022 from https://makueni.go.ke/2019/departments/water

Marshall, S. (2011). The water crisis in Kenya: Causes, effects and solutions. *Global Majority E-Journal*, *2*(1), 31-45.

McGilloway, S. (2017). Evaluating complex community change initiatives: Credible evidence is what counts. In Research and Evaluation in Community, *Health and Social Care Settings*. London: Routledge.

Mgoba, S. A., &Kabote, S. J. (2020). Effectiveness of participatory monitoring and evaluation on achievement of community-based water projects in Tanzania. *Applied Water Science*, *10*(8), 1-13.

Minyiri, A. C., &Muchelule, Y. (2018). Influence of Monitoring and Evaluation on Water Project Performance in Migori County, Kenya. *Africa International Journal of Multidisciplinary Research*, *2*(6), 1-18.

Morrison, Karen. (2003). Stakeholder involvement in water management: Necessity or luxury? Water science and technology. J*ournal of the International Association on Water Pollution Research.* 47(1), 43-51. 10.2166/wst.2003.0354.

Muchelule, Y. W. (2018). *Influence of monitoring practices on projects performance of Kenya state corporations*. Unpublished Doctoral dissertation, JKUAT, Kenya.

Mukaria, E. M. (2021). *Monitoring, Evaluation Practices and Sustainability of Community-Based Projects in Embu County, Kenya.* Masters dissertation, Nairobi, Kenya.

Mulei, B. M., &Gachengo, L. (2021). Community capacity development and sustainability of county government-funded water projects in Makueni County, Kenya. *International Academic Journal of Information Sciences and Project Management*, *3*(6), 419-442.

Mulwa, F., Li, Z., &Fangninou, F. F. (2021). Water scarcity in Kenya: current status, challenges and future solutions. *Open Access Library Journal*, *8*(1), 1-15.

Muniu, F. N. (2017). *Monitoring and evaluation practices, community participation and sustainability of community water projects in Kenya: a case of Nyeri county*. Doctoral dissertation, University of Nairobi, Kenya.

Musau, J. K. (2020). *Project management practices influence levels on successful implementation of borehole water projects in Makueni County, Kenya*. Unpublished Doctoral dissertation, JKUAT, Nairobi, Kenya.

Nema (2020). *Makueni County*. Retrieved August 29th 2022 from https://www.nema.go.ke/index.php?option=com_content&view=article&id=257&catid=2&Itemid=410.

Ochelle, G. O. (2012). *Factors influencing sustainability of community water Projects in Kenya: A case of water projects in Mulala division, Makueni County*. Doctoral dissertation, University of Nairobi, Kenya.

Oino, P. G., Towett, G., Kirui, K. K., &Luvega, C. (2015). The dilemma in sustainability of community-based projects in Kenya. *Global Journal of Advanced Research, 2(4), 757-768.*

Poff, N. L., Brown, C. M., Grantham, T. E., Matthews, J. H., Palmer, M. A., Spence, C. M. &Baeza, A. (2016). Sustainable water management under future uncertainty with eco-engineering decision scaling. *Nature Climate Change*, *6*(1), 25-34.

Schnoor, J. L. (2015). Water unsustainability. *Daedalus*, *144*(3), 48-58.

Titomet, P. K. (2017). *Influence of Monitoring and Evaluation on the Performance of Water Projects in Kenya: A Case of Mwala Water Project, Machakos County*. Unpublished Doctoral dissertation, University of Nairobi, Kenya).

Tripathi, Agyeya. (2021). Monitoring and Evaluation of Development Projects - Introduction. 10.13140/RG.2.2.18568.96003.

Ukato, A., Sofoluwe, O. O., Jambol, D. D., &Ochulor, O. J. (2024). Technical support as a catalyst for innovation and special project success in oil and gas. *International Journal of Management & Entrepreneurship Research*, *6*(5), 1498-1511.

UNEP, (2015). Sustainable Consumption and Production. Retrieved July 22nd 2022 from https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-consumption-and-production-policies/.

Unicef, (2019). *Water Sanitation and Hygiene*. Retrieved July 22nd 2022 from https://www.unicef.org/uganda/what-we-do/wash/.

Unicef, (2019). *Water Sanitation and Hygiene*. Retrieved July 22nd 2022 from https://www.unicef.org/drcongo/en/what-we-do/water-sanitation-and-hygiene/.

Unicef, (2022). *Clean Drinking Water*. Retrieved July 22nd 2022 from https://www.unicef.org/india/what-we-do/clean-drinking-water/.

Unicef, (2022). *Water*. Retrieved July 22nd 2022 from https://www.unicef.org/ghana/water

WASREB, (2017). *Water Services Regulatory Board.* Retrieved July 21st 2022 from www.wasreb.go.ke.

Waweru, S. W., & Kimathi, D. (2022). Project Monitoring and Evaluation Practices on Performance of National Government Water and Sanitation Projects in MachakosCounty, Kenya. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, *6*(2).

Weiss, C.H. and Connell, J.P. (1995) Nothing as Practical as Good Theory: Exploring Theory-Based Evaluation for Comprehensive Community Initiatives for Children and Families. In: New Approaches to Evaluating Community Initiatives: Concepts, Methods, and Contexts, *The Aspen Institute, 65-92.*

WHO, (2022). *Drinking Water*. Retrieved July 22nd 2022 from https://www.who.int/news-room/fact-sheets/detail/drinking-water/.