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Participatory Strategic Planning and Performance of Water Projects in Machakos County, Kenya

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Abstract

Purpose: The purpose of this study is to assess how participatory strategic planning influences performance of water projects in Machakos County, Kenya.

Methodology: The study made use of the pragmatism research paradigm, correlational research design and descriptive cross-sectional survey research design. The target population comprised of 70 water projects located within Machakos County. The unit of observation included the beneficiaries of the water projects represented by five members of the Water management committee, Ministry of water employees, and project managers in Machakos County. Stratified random sampling was used to select 216 respondents and divided into smaller sub-groups referred to as strata which had three groups of respondents, including the ministry of water employees, project managers and water management committee members.

Findings: Correlation results indicated that there is a positive linear relationship between participatory strategic planning and the performance of water projects in Machakos County (r =0.578, p-value=0.000). Regression results showed that participatory strategic planning had a positive and significant influence on performance of water projects in Machakos County, Kenya (β_1=0.883, p-value=0.000).

Contribution to Theory, Policy, and Practice: From the findings, the study provides findings that contribute to policy and practice by providing recommendations on how participatory strategic planning can be institutionalized by governments, organisations and communities to improve planning and management of water projects. This study provides insights on the strategic planning process that should include engagement of key relevant stakeholders, including community members, local leaders, and technical experts, from the initial stages of project design through to implementation and evaluation The Study contributes to how participatory management contributes to enhance participation (E04.2) of key stakeholders leads to sustainability of water projects (E04.4) which contributes to improved water access (E01.0) and better health outcomes (G01) grounded on adaptive learning (L02)

Keywords: *Participation, Project Performance and Adaptive Learning, Water Access*

1.Introduction

The performance of water projects, specifically in adhering to scope, time, and budget constraints, remains a significant challenge for managers overseeing projects funded by governments and multilateral organizations such as the World Bank, International Non-Governmental Organizations (INGOs), and the United Nations (UN) globally (Bassanetti, 2021). These projects often face complex issues such as unexpected technical difficulties, logistical constraints, and fluctuating financial resources, which can lead to delays and cost overruns. Moreover, managing stakeholder expectations and ensuring the alignment of project goals with community needs can further complicate project execution (Arias & Friðriksdóttir, 2022). The intricate nature of water projects, which typically involve extensive planning, coordination, and compliance with regulatory frameworks, exacerbates these challenges. According to Lainjo (2019), Results-Based Management (RBM) plays a crucial role in improving the performance of projects by stressing accountability, transparency, and efficiency throughout the project lifecycle. One of the elements of RBM is project strategic planning.

Participatory strategic planning is a critical component of Results-Based Management (RBM) as it sets the foundation for achieving desired outcomes by defining clear objectives, establishing measurable targets, and outlining the steps necessary to reach those goals (Jabarzadeh & Mazlumi, 2019). This process involves identifying stakeholders' needs, conducting situational analyses, and developing a coherent strategy that aligns resources and activities with the intended results (Evers & Phi, 2019). Effective strategic planning ensures that all project components are interconnected and focused on delivering impact, while also facilitating proactive risk management and resource allocation. Brinkerhoff (2020) indicates that by integrating strategic planning into RBM, organizations can ensure that projects are managed systematically, performance is tracked against defined goals, and adjustments are made as needed to enhance overall effectiveness and achieve successful outcomes.

In Estonia, Täks and Vadi (2019) indicate that effective project strategic planning profoundly influences the performance of water projects by ensuring they are completed on time and within budget. Papke-Shields (2017) asserts that through meticulous planning, clear timelines and cost estimates are established, allowing for better resource allocation and timely adjustments. In addition Täks and Vadi's (2019) indicate that strategic planning aligns project activities with specific objectives, enhancing the likelihood of achieving desired outcomes and ensuring that the project meets its goals. Additionally, it incorporates sustainability considerations, promoting practices that support long-term benefits and environmental stewardship. In Tanzania, Ndomba (2022) indicate that by addressing stakeholder needs and expectations from the outset, strategic planning contributes to greater satisfaction and engagement. Furthermore, Njeru (2018) observed that project strategic planning includes strategies for managing environmental and social impacts, ensuring that the project adheres to regulatory standards and minimizes negative effects, thereby supporting overall project success and effectiveness.

Water projects' performance in Machakos County shows a mixed picture, characterized by both achievements and challenges (Nzomo, 2022). While some projects have successfully increased access to clean water, others have faced significant issues such as poor quality, cost overrun, time overrun, failure to achieve objectives, and lack of sustainability (Muema & Ngugi, 2021). These challenges often stem from inadequate planning, resource constraints, and limited capacity for project management and implementation. Project strategic planning as a component of RBM is essential for tackling these challenges, offering a structured approach to define clear objectives, track progress, and assess outcomes using established indicators (Kosgei, 2021). According to Brinkerhoff (2019), project strategic planning is crucial as it provides a clear roadmap for achieving objectives, optimizing resource use, and ensuring successful project execution within time, budget, and scope constraints.

1.1 Problem Statement

Participatory strategic planning, as a component of Results-Based Management (RBM), is crucial for improving the performance of water projects by defining clear objectives and measurable outcomes (Arias & Friðriksdóttir, 2022). It ensures effective allocation of resources and alignment of activities with desired results. Strategic planning also facilitates monitoring and evaluation, allowing for timely adjustments and improvements (Lainjo, 2019). Khan, Begum, and Razak (2020) found that participatory strategic planning significantly and positively impact the performance of social development and humanitarian programs. However, Mayne (2017) and Smith and Eyben (2019) observed that participatory strategic planning leads to a narrow focus on short-term, easily measurable outcomes, neglecting broader and more complex impacts. Critics argue that project strategic planning can be rigid, hindering flexibility and adaptability. It may also create complexity and increase overhead costs, leading to bureaucratic delays.

In Machakos County, 67 percent of water projects experience stagnation, time and cost overruns and activities stop functioning immediately after the construction once the donors and contractors hand over the projects to communities (Lillian & Mutiso, 2019). Some of the water projects break down and cannot continue to operate due to lack of spare parts, inability of community water management committees to cover operation costs, and inadequate operation and maintenance. In addition, Kosgei (2021) observed that only 60% of the stakeholders were satisfied with the water projects after their completion. This is because these projects fail to achieve their goals of providing safe water, thereby becoming social and environmental hazards to the host communities.

Different studies have been conducted around the world on participatory strategic planning in projects. For instance, In Malaysia, Jabarzadeh and Mazlumi (2019) examined the effect of participatory strategic planning on the implementation of the strategy in small and medium industries; Täks and Vadi (2019) evaluated stakeholder involvement in strategic planning throughout project implementation among Estonian companies; and Papke-Shields (2017) examined the strategic planning attributes employed in project management in the United States. However, various countries exhibit distinct macroeconomic environments and legal frameworks

that govern project implementation. In addition, these studies were limited to infrastructure development projects and community-based water projects.

In Kenya, Njeru (2018) examined participatory strategic planning and slum development projects' success within Korogocho informal settlements, Kenya; Alubisia (2022) examined the relationship between strategic planning and performance of public secondary schools in Kakamega South Sub-county, Kenya; Ndukhu (2020) examined the influence of participatory strategic planning on performance of commercial banks in Kenya. However, these studies were limited to slum development projects in Korogocho informal settlements, public secondary schools and commercial banks. Different types of projects have different project objectives, resources requirements and technical expertise. This study therefore seeks to answer the research question: how does participatory strategic planning influence the performance of water projects in Machakos County?

The researcher sought to test the following null hypotheses:

H_{01}: Participatory strategic planning has significant influence on and water projects performance in Machakos County, Kenya

2. Literature Review

2.1 Participatory Strategic Planning and Performance of Water projects

In Estonia, Täks and Vadi (2019) evaluated stakeholder involvement in strategic planning throughout project implementation using data from 204 Estonian companies. To analyze the associations between variables, Bayesian and dynamic networks were chosen to illustrate the relationship between the variables in study findings. This kind of research allows for evaluating probabilistic relationships between different combinations of strategic planning participants and management tool usage. The findings indicate that participatory strategic planning in design, implementation planning, and budgeting significantly influenced implementation and projects' performance. Moreover, the research findings in Estonia may not apply to Kenya due to disparity in the legal frameworks governing the implementation of projects. In addition, this research used Bayesian networks to analyze relationships between variables, but the current study will use correlation and regression analysis.

In the United States, Papke-Shields (2017) examined the strategic planning attributes employed in project management. The research employed a systematic review of related literature and found that project management applies differing degrees of logical adaptive approaches, which is correlated positively with project management performance and usage of project management techniques or tools. In addition, strategic planning characteristics such as formality, comprehensiveness, intensity and participation affected the performance of projects. The findings are similar to Täks and Vadi's (2019) findings that involvement in strategic planning affects the performance and implementation of projects. Nonetheless, besides the study focusing on United States, a developed country, the researcher failed to use primary data. This research will collect

primary data to fill in knowledge gaps in studies conducted by Papke-Shields and Boyer-Wright in the United States.

Njeru (2018) examined participatory strategic planning and slum development projects' success within Korogocho informal settlements, Kenya. The researcher deployed secondary and also primary data from senior managers. The results found that participation directly contributes to organizational performance and projects' performance in strategic planning. The findings suggest that successful participatory strategic planning integrates national contexts and global agendas to shape strategies, ensuring alignment and relevance to both local and international priorities. These findings conform to Täks and Vadi (2019) arguments that participatory strategy planning positively influences project performance. However, the researcher was limited to one type of project, and hence findings do not apply to other types of projects due to differences in resource and legal requirements.

In an earlier study, Arasa et al. (2010) examined the elements of participation within the strategic planning process. The study adopted the positivism approach. Primary data on strategic planning, employee involvement and expected outcomes of strategic planning was collected. Employee engagement has a strong influence on strength and direction of nexus between strategic planning and results of strategic planning (leadership involvement, workers involvement from throughout the business, and engagement in diverse strategic planning activities). Findings agree with Täks and Vadi (2019) observation that participatory strategic planning is an essential component in realizing outcomes of strategic planning. As earlier mentioned, performance is composed of many aspects, including realizing the outcomes of strategic planning. The dependent variable was strategic planning outcomes, a component of water projects' performance used in this study.

2.2 Theoretical Framework

The Results-Based Management (RBM) theory emerged in the mid-1980s, initially adopted by the Australian government, and later embraced by organizations such as the OECD in the 1990s. RBM focuses on aligning resource allocation with clearly defined, measurable outcomes to enhance project accountability and efficiency (Dempster, 2017). This approach emphasizes setting specific targets, effective planning, and rigorous monitoring and evaluation (M&E) to ensure that resources are used optimally and that desired results are achieved. Effective M&E is vital for assessing progress and deriving insights from past experiences, which helps in refining strategies and improving future project outcomes (Try & Radnor, 2017). By focusing on results rather than just inputs or activities, RBM ensures that projects are managed with a clear focus on achieving impactful and sustainable outcomes, thus driving continuous improvement and greater overall effectiveness.

RBM aims to drive substantial improvements in both public and private sectors by enhancing performance and achieving more effective outcomes. It incorporates several critical components, including stakeholder participation, situational analysis, result definition, risk management, performance information gathering, and performance reporting (Dempster, 2017). These elements collectively contribute to a comprehensive approach to managing projects, where stakeholder

engagement ensures that the needs and expectations of all parties are addressed. Effective situational analysis and result definition guide the strategic planning process, while robust risk management practices mitigate potential challenges. Performance information gathering and reporting are vital for monitoring progress and making informed decisions. Management learning and decision-making processes are central to RBM, as they enable continuous improvement and adaptation (Rivenbark, 2016). As such, RBM enhances the relevance, efficiency, and impact of interventions, ensuring that projects are managed effectively and resources are allocated optimally.

RBM theory emphasizes participatory strategic planning to ensure that project objectives are aligned with stakeholder needs and priorities, thereby enhancing both relevance and effectiveness (Lainjo, 2019). By involving a diverse range of stakeholders in the planning process and utilizing participatory monitoring and reporting mechanisms, RBM enables real-time tracking of progress and timely adjustments (Sumadi & Ma'ruf, 2020). The selection of relevant Key Performance Indicators (KPIs) is crucial for objective performance assessment and accountability (Borodiyenko, 2020). However, critics of RBM argue that it may oversimplify complex issues by focusing predominantly on quantifiable results, face challenges in accurate measurement, and potentially foster short-termism at the expense of long-term sustainability (Sumadi & Ma'ruf, 2020; Lainjo, 2019). Borodiyenko (2020) suggests that to address these issues, RBM's implementation should incorporate contextual considerations, flexibility, and qualitative assessments to ensure sustainable development outcomes.

2.3 Conceptual Framework

The study sought to assess the influence of participatory strategic planning on performance of water projects in Machakos County, Kenya. A shown in Figure 1, the dependent variable was performance of water projects and the independent variable was participatory strategic planning.

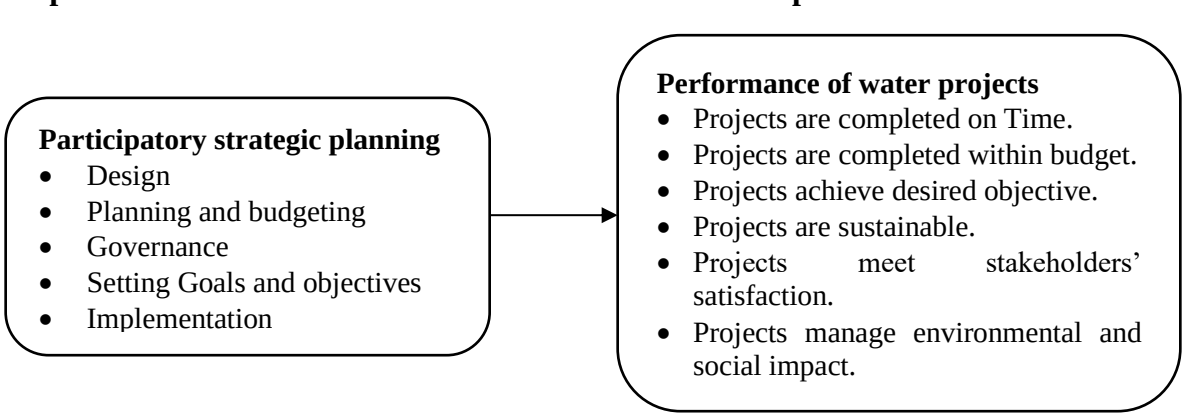

Figure 1: Conceptual Framework

3. Research Methodology

This study adopted the pragmatism paradigm and combined qualitative and quantitative research approaches. In addition, the study employed a correlational approach and a descriptive cross-sectional survey approach. The target population comprised of 70 water projects located within

Machakos County. The unit of observation included the beneficiaries of the water projects represented by five members of the Water management committee, Ministry of water employees, and project managers in Machakos County. Water projects comprise five members of the water management committee, and hence the total members in the 70 water projects were 350 members. The project managers were 70, and the Ministry of water employees was 54. The target population therefore, consisted of 474 individuals.

Sample size determination in this study adopted the Slovin's Formula. This formula was adopted as it puts into consideration margin of error, target population and sample size.

$$n = \frac{N}{1 + NE^{-2}}$$

Where:

N =entire population

n =sample size

E =Error margin (0.05)

$$n = \frac{474}{1 + (474 * 0.05^2)}$$

=216

The study employed stratified random sampling to select 216 respondents and divided into smaller sub-groups referred to as strata which had three groups of respondents, including the ministry of water employees, project managers and water management committee members.

Table 1: Sample Size

Category	Target Population	Sample Size
Ministry of water personnel	54	25
Project managers	70	32
Water management committee members	350	159
Total	**474**	**216**

The study used primary data collected through semi-structured questionnaires and in-depth interviews with key informants. A preliminary pilot study was conducted to evaluate the reliability and validity of the research instruments. Project managers and members of the water management committee took part in the pre-test, including 21 respondents (10% of sample size) from Makueni County. Makueni County was used to test the research instruments due to proximity to Machakos County and similarity in characteristics including culture, environment, and water needs.

The research instruments generated both qualitative and quantitative data. Qualitative data from key informant interviews and unstructured questionnaires was analyzed thematically. The quantitative data analysis was done using both inferential and descriptive statistics with the help of Statistical Package for the Social Sciences (SPSS Version 25). Descriptive statistics included mean, standard deviation, percentages, and frequency distribution. Inferential analysis was conducted using Pearson correlation coefficient analysis and univariate regression analysis. The univariate regression models were employed to examine the relationship between the study variables. The regression model used was as follows:

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

Where;

Y = County governments' water projects Performance

β_0 =Intercept (Constant)

β_1 =Coefficients of determination

X_1 = Participatory strategic planning

ε = Error term

4. Research Findings and Discussions

Out of 216 questionnaires that were administered, the researcher obtained 157 responses, conducted 18 KII with staff from the ministry of water and 23 KII with project managers. This represents a response rate of 91.67%. Babbie (2017) argues that 50% response rate is generally considered good for analysis, inferences as well as reporting purposes whereas 70% response rate is considered excellent. Therefore, in this study response rate of 91.67% is adequate for conducting analysis as well as making inferences. There was 8.33% non-response rate, which came as results of unavailability of some participants.

4.1 Performance of Water Projects

In this study, the performance of water projects served as the dependent variable, assessed through indicators such as projects completed on time, within budget, achieving objectives, sustainability, stakeholder satisfaction, and managing environmental and social impacts. A five-point Likert scale was employed to measure respondents' level of agreement with statements concerning the indicators within Machakos County.With mean of 4.089, particicpants agreed that sometimes they have cost overrun when implementing water projects in Machakos County. Additionally, they agreed that there are few complaints on the quantity of water supplied in the county government and they have experienced cost over runs at completion of some county water projects as indicated by a means of 4.051 and 4.038. participants also agreed that County water projects are completed within schedule and that there are several complaints on the quality of the water supplied in the county government as shown by means of 3.981and 3.822, respectively. Respondents expressed overall satisfaction with the quality of water supplied in their communities, as indicated by an

average rating of 3.669. However, they also reported experiencing delays in the completion of some county water projects, with a mean score of 3.592. Respondents expressed a neutral opinion towards the services provided by county water projects, as indicated by a mean score of 2.803. Similarly, their views on the cost-effectiveness of these projects were neutral, with a mean rating of 2.745.

Table 2: Performance of Water Projects

Statements	Mean	Std. Deviation
County Water projects are completed within schedule	3.981	0.711
I have experience delay in completion of some county water projects	3.592	0.891
The costs for water projects in my community is always within the budget	2.745	1.092
I have experience cost over runs at completion of some county water projects	4.038	0.275
Sometimes we have cost overrun when providing water supply services in the county	4.089	0.414
I am satisfied with the services of county water projects in my community	2.803	1.083
I am satisfied with quality of the water supplied in my community	3.669	0.812
There are several complaints on the quality of the water supplied by the county government	3.822	0.693
There are few complaints on the quantity of the water supplied in the county government	4.051	0.372
Composite mean and composite standard deviation	**3.643**	**0.705**

4.2 Participatory Strategic Planning and Performance of Water Projects

The aspects of participatory strategic planning and performance of water projects include design, planning and budgeting, Governance, setting goals and objectives, and implementation. This approach facilitated an analysis of respondents' perceptions regarding water projects performance in the County. Participants were asked to assess their level of agreement with statements related to participatory strategic planning on a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). From the findings, as shown I Table 3, the participants agreed with a mean of 4.217 that that project leaders are responsible to set the direction for their team during project work. Also, participants agreed with a mean of 4.121 that participatory development of the

strategic plan involves key stakeholders including beneficiaries in setting the strategic direction to the project at design stage. Additionally, respondents agreed with a mean of 4.108, respondents agreed that the roles and responsibilities in project management are shared among team members during participatory strategic planning. This finding implies that team members acknowledge and endorse the practice of distributing tasks and obligations among themselves during the strategic planning phase. Such shared responsibilities likely foster a sense of ownership, accountability, and collective commitment to project objectives, potentially leading to improved project coordination, efficiency, and effectiveness.

The respondents strongly agreed that participatory strategic planning serves as a roadmap for project implementation and outcome achievement, as indicated by a mean score of 4.096.This finding implies that the structured and collaborative nature of participatory strategic planning helps in setting clear objectives, defining action steps, and establishing accountability mechanisms, thereby facilitating effective project execution. Additionally, they agreed with a mean of 4.026 that the community members are involved in project implementation and further agreed with mean of 3.879 that the project managers ensure meaningful involvement of the stakeholders including beneficiaries in project design. The findings indicate that robust stakeholder participation throughout the project lifecycle significantly enhances project outcomes. By involving beneficiaries and other key stakeholders, project ownership, relevance, and sustainability are strengthened, ultimately leading to improved project performance.

Despite the overall positive sentiment towards participatory strategic planning, respondents expressed a neutral view on the involvement of stakeholders, including community members, in developing project goals and objectives, as indicated by a mean score of 3.414. They also disagreed that there is adequate participation of community members in development of the projects' budget by a means of 2.414. The findings indicate a mixed level of stakeholder involvement in project planning and implementation, with some aspects showing satisfactory participation while others lack consensus or adequate engagement. Specifically, there appears to be uncertainty regarding the extent of stakeholder involvement in setting project goals and objectives, and disagreement regarding the adequacy of community participation in budget development.

Table 3: Aspect of Participatory Strategic Planning and Performance of Water Projects

Statements	Mean	Std. Deviation
The project managers ensure the involvement of the stakeholders including beneficiaries in project design	3.879	0.414
The community members are involved in project implementation planning	4.026	0.530
There is adequate participation of community members in development of the projects' budget	2.414	0.785
The stakeholders including community members are involvement in development of project goals and objectives	3.414	0.906
The development of the project's strategic plan gives strategic direction to the project	4.121	0.381
Participatory strategic planning guides the implementation of the project with a focus into the future	4.096	0.336
Project leaders are responsible to set the direction for their team during project work	4.217	0.443
Roles and responsibilities in project management are shared among team members	4.108	0.368
Composite mean and composite standard deviation	**3.784**	**0.520**

A key informant emphasized that strategic planning is crucial for aligning water project design and implementation with the specific needs of key stakeholders, particularly project beneficiaries. The process ensures the views of community members and stakeholders are part of every process and every stage of the project, hence improving ownership, performance, and accountability. Moreover, participatory strategic planning ensure roles and responsibilities are understood and shared among the key stakeholders. Strategic planning helps in outlining an appropriate governance structure and budget to support implementation of the project. The strategic planning process also outlines the monitoring and evaluation framework for data collection and analysis to support management decision making and continuous improvements of water projects.

> "*Strategic planning helps ensure that water projects are designed and implemented in response to the needs of key stakeholders, especially project beneficiaries. The process ensures that the views of community members and stakeholders are*

> *incorporated at every stage, improving ownership, performance, and accountability*" KII01

Key informants highlighted that the inclusion of stakeholders in strategic planning processes guarantees that their perspectives are integrated into the design, planning, and implementation phases of water projects. The stakeholders' views are sort to outline the goals, objectives, and activities of the water projects. This involvement of stakeholders ensures realistic budgeting and scheduling of activities based on a better understanding of internal and external project operating context. Moreover, stakeholders' involvement in strategic planning strengthens context analysis, identification of needs, and mapping of potential risks to the implementation of the water project. The context analysis and needs assessments ensures all stakeholders are aligned around a shared community needs, purpose of the project and clarity on the roles and responsibilities. This level of detailed awareness by key stakeholders ensures all aspects of the project are designed and implemented based on the context and needs of the stakeholders. This process leads to effective and efficient management supported with more accountability among stakeholders which results in improved performance of water projects.

> "*Stakeholder involvement in strategic planning ensures their perspectives are integrated into the design, planning, and execution of water projects, outlining clear goals, objectives, and activities. This engagement enables realistic budgeting and scheduling based on a thorough understanding of project context and risks. Moreover, involving stakeholders strengthens context analysis, needs identification, and risk mapping, aligning all parties around shared community needs and project purpose, enhancing accountability and ultimately improving water project performance*" KII04

The key informants noted that some of the strategies used by the county government to ensure participation of key stakeholders in the strategic planning in water projects include: organizing Barraza's, nyumba-kumi initiatives, home to home visits to consult residents, intelligence gathering through county administrative structures at local levels, conducting meetings with stakeholders to build consensus on community needs while identifying roles and responsibilities for key stakeholders in the water projects.

> "*County authorities employ various strategies like Barraza's and nyumba-kumi initiatives to engage stakeholders in strategic planning for water projects. They conduct home visits and leverage local administrative structures for intelligence gathering and consensus-building on community needs. Stakeholder meetings are held to delineate roles and responsibilities, ensuring effective project implementation*" KII02

Also, key informants indicated that the county government has been providing stakeholders with regular reports based on their level's accountabilities, roles, and responsibilities to improve their involvement in the strategic planning process. The county government motivates stakeholders to be involved effectively in strategic planning for water projects through allowances. County

governments also ensure consistent involvement of key stakeholders in the implementation of water projects through regular joint monitoring and site visits to collect information for decision making and continuous improvement.

> "*County authorities furnish stakeholders with periodic reports tailored to their roles, fostering engagement in strategic planning. Stakeholders are incentivized to participate actively in planning through allowances, ensuring consistent involvement in project implementation. Regular joint monitoring and site visits by stakeholders aid data collection for decision-making and project enhancement*" KII03

4.3 Correlation Analysis

The study used correlation analysis to investigate the relationship between participatory strategic planning and water project performance in Machakos County. Table 4 demonstrates a positive linear relationship between participatory strategic planning and the performance of water projects in Machakos County, with a correlation coefficient (r) of 0.578 and a statistically significant p-value of 0.000. This indicates that as the level of Participatory Strategic Planning increases, there is a corresponding improvement in water projects performance in Machakos County.

Table 4: Correlation Coefficient

		Performance of Water Projects	**Participatory Strategic Planning**
Performance of Water Projects	Pearson Correlation	1	
	Sig.(2-tailed)		
	n	157	
Participatory Strategic Planning	Pearson Correlation	.578**	1
	Sig. (2-tailed)	.000	
	n	157	157

4.4 Regression Analysis

The study used univariate regression analysis to assess how participatory strategic planning influences performance of water projects in Machakos County, Kenya. The null hypothesis was:

$H_0$1: No statistically significant relationship between participatory strategic planning and water projects performance in Machakos County, Kenya

The R-squared for variation in the performance of county governments' water projects that can be attributed to participatory strategic planning. As shown in Table 5, the model explains approximately 33.5% of the variation in water project performance. This indicates that while participatory strategic planning is a significant factor influencing performance, other variables not included in the model also play a role. This suggests that 33.5 % of performance of Water Projects in Machakos County can be attributed to participatory strategic planning.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.578[a]	.335	.330	.35578

a. Predictors: (Constant), Participatory Strategic Planning

The analysis of variance assesses the suitability of a model for data. As depicted in Table 6, the calculated F-value (77.919) exceeds the critical F-value (3.94), indicating that the model is suitable for predicting the influence of participatory strategic planning on water projects performance in Machakos County. Additionally, the p-value (0.000) has not exceeded 0.05significance level, confirming that the model fits the data well.

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.863	1	9.863	77.919	.000[b]
	Residual	19.619	155	.127		
	Total	29.482	156			

a. Dependent Variable: Performance of Water Projects

b. Predictors: (Constant), Participatory Strategic Planning

From the results, the regression equation can be presented as;

Y= 0.301 + 0.883 (participatory strategic planning)

The results indicate a strong positive relationship between participatory strategic planning and water project performance in Machakos County. A one-unit increase in participatory strategic planning is associated with a 0.883 unit increase in water project performance, controlling for other factors. This relationship is statistically significant (p-value < 0.05), supporting the conclusion that participatory strategic planning significantly contributes to improved water project performance.

Table 7: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.301	.380		.793	.429
	Participatory Strategic Planning	.883	.100	.578	8.827	.000

a. Dependent Variable: Performance of Water Projects

5. Discussion of the Findings

Results from both correlation and regression analysis indicate a strong positive association between participatory strategic planning and water project performance in Machakos County. These findings corroborate those of previous studies by Täks and Vadi (2019) and Papke-Shields and Boyer-Wright (2017), which also demonstrated a positive impact of participatory strategic planning on project outcomes. Moreover, they are consistent with Njeru (2018) findings, indicating that an involvement in strategic planning directly enhances both organizational and project performance.

The study found that project leaders play a pivotal role in establishing and maintaining the project's direction throughout its lifecycle. This aligns with Córdoba's (2017) assertion that project leaders are instrumental in defining the project's mission and vision within the broader organizational or community context during participatory strategic planning. Additionally, the study revealed that development of the project strategic plans provides much needed focus on strategic outcomes, and impact results. The findings concur with Musyoki, Kisimbii and Kyalo (2020) findings that participatory Strategic Planning helps communities and organizations to build clear ideas, shared commitment, and consensus about the vision and build project ownership. The study also found that through participatory strategic planning, project management roles and responsibilities are identified and shared among key stakeholders. Additionally, the study found that participatory strategic planning focuses the implementation of project on results, desired objectives, and goals. Furthermore, it is important to ensure the involvement of target beneficiaries in project design, planning and implementation of projects. The findings align with Papalardo, Tomé and Braga (2015) argument that participatory strategic planning in public universities encompasses community members involvement in design, implementation planning, budgeting, risk management and defining the governance structure. The study further established that project managers have a duty to facilitate the involvement of the beneficiaries in project life cycle.

Nonetheless, the study established that community members are involved moderately in the development of goals and objectives in most water projects in Machakos County. The moderate involvement of key stakeholders has resulted in projects not achieving the desired goals and objectives. The findings agree with Täks and Vadi (2019) observations that both the community and decision-makers should build consensus on the systems and tools that will facilitate them to surmount the obstacles as they work towards the vision of their projects. The study also found that that there is inadequate participation of community members in development and monitoring of the project budgets which diminishes community participation and affects the performance of water projects.

6. Conclusion and Recommendations

The study sought to assess how participatory strategic planning influences performance of water projects in Machakos County, Kenya. The study concludes that participatory strategic planning

has a positive and significant effect on water projects' performance in Machakos County. The findings indicate aspects of participatory strategic planning, such as design, planning, budgeting, governance, implementation, and goal setting, play crucial roles in influencing water projects performance in the county. These results suggest that an improvement in participatory strategic planning leads to a subsequent improvement in water projects' performance in Machakos County.

Based on the study findings, the study recommends that the County Government of Machakos institutionalizes participatory strategic planning as a standard practice across all water projects. This process should involve engaging all relevant stakeholders, including community members, local leaders, and technical experts, from the initial stages of project design through to implementation and evaluation. By ensuring that key aspects such as design, planning, budgeting, governance, and goal setting are collectively determined, the County can enhance the alignment of project objectives with community needs, leading to improved project outcomes and sustainable water resource management. Furthermore, establishing clear communication channels and regular feedback mechanisms will ensure ongoing stakeholder engagement, fostering a sense of ownership and accountability that is crucial for the success and longevity of water projects.

7. Suggestions for Further Research

This research was limited Machakos County, Kenya. The findings of these studies cannot be applied to other counties in Kenya because the country has 47 other counties with different and diverse geographical, socio-economic, and political contexts. The research also recommends further studies on effect of participatory strategic planning on performance of other types of projects like health care projects and construction projects among others. The research revealed that participatory strategic planning only explains 33.5% of performance of water projects in Machakos County. As such, further studies should be carried out to determine what other factors affecting the performance of water projects in Machakos County. In addition, further analysis should be conducted to determine how management skills of project managers and political leadership in the county influence performance of water projects.

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