



ROLE OF PROJECT COMMUNICATION ON PERFORMANCE OF WATER AND SANITATION PROJECTS IN SIAYA COUNTY, KENYA

¹ Musotsi Anne Amaya, ² Dr. Muchelule Yusuf

¹ Masters Student (Project Management), Jomo Kenyatta University of Agriculture and Technology

² Lecturer, Jomo Kenyatta University of Agriculture and Technology

ABSTRACT

Despite the importance of water and sanitation projects in improving public health and overall well-being, many areas in Kenya still face numerous challenges. Siaya County, located in Western Kenya, has been grappling with water and sanitation challenges for years. Despite the importance of communication, there need to be more studies investigating the role of project communication in improving the performance of water and sanitation projects. Therefore, there is a need for a study that examines the role of project communication on the performance of water and sanitation projects in Siaya County, Kenya. The following specific objectives guided the study: to establish the role of communication implementation on the performance of water and sanitation projects in Siaya County, Kenya; and to determine the role of communication policy on the performance of water and sanitation projects in Siaya County, Kenya. A descriptive design was used in this research. The study targeted all five water and sanitation projects in Siaya County by national and county governments. The unit of observation was ten project managers, 20 representatives of community members, and five government officials. They are forming a target population of 35 individuals. Due to the small size of the study population, the study used a census sampling approach. The primary data for this analysis was collected via a questionnaire. The data obtained was quantitative as well as qualitative. The Statistical Package for Social Scientists (SPSS) version 25 generated frequencies and descriptive and inferential statistics from the quantitative data; the findings were presented in tables and figures. Qualitative data was analyzed using content analysis and presented in prose form. The study concludes that communication implementation has a positive and significant effect on performance of water and sanitation projects in Siaya County, Kenya. The study also concludes that communication policy has a positive and significant effect on performance of water and sanitation projects in Siaya County, Kenya. From the findings, this study recommends that projects managers should develop a detailed communication plan for each water and sanitation project, outlining clear objectives, target audiences, key messages, communication channels, resources and a timeline. In addition, they should prioritize timely and accurate dissemination of project information to all relevant stakeholders. Set up a regular communication schedule to ensure that updates, progress reports, and important announcements are shared promptly.

Key Words: Project communication, Communication implementation, Communication policy, Water and sanitation projects

Background of the Study

Access to safe water and proper sanitation facilities is crucial to ensuring public health and preventing the spread of water-borne diseases. In many developing countries, including Kenya, inadequate access to clean water and sanitation facilities remains a significant public health challenge. According to UNICEF, in 2017, approximately 33 million people in Kenya lacked access to safe water, while 37 million lacked access to basic sanitation facilities (UNICEF, 2017).

In response to this challenge, various water and sanitation projects have been initiated in Kenya to provide clean water and improved sanitation facilities to communities in need. However, despite these efforts, many projects have faced challenges that have negatively impacted their success. These challenges range from inadequate funding and lack of appropriate technology to inadequate communication and stakeholder engagement (Torgerson, 2017).

According to research, effective communication is positively associated with project success (Turner & Cochrane, 2017). Effective communication is essential for the success of any project, including water and sanitation projects. Communication helps project teams to identify and address potential issues and risks, establish expectations, build trust, and manage stakeholder relationships. In the context of water and sanitation projects, effective communication is critical, as these projects involve multiple stakeholders, including government agencies, non-governmental organizations, community groups, and individual households.

Siaya County in Kenya is one of the regions where several water and sanitation projects have been initiated to improve access to clean water and sanitation facilities. However, the success of these projects has varied, and inadequate communication has been identified as a significant challenge (Nzuki & Kibwana, 2019). Therefore, this study aims to investigate the role of project communication in the performance of water and sanitation projects in Siaya County, Kenya.

Statement of the Problem

Despite the importance of water and sanitation projects in improving public health and overall wellbeing, many areas in Kenya still face numerous challenges in this regard (Ondieki et al., 2017). Siaya County, located in Western Kenya, faces significant challenges in providing access to clean water and improved sanitation facilities to its residents. According to a study conducted by the Kenya National Bureau of Statistics (KNBS) in 2019, only 46% of households in Siaya County have access to clean drinking water, which is significantly lower than the national average of 58%. Moreover, the same study found that only 23% of households in the county have access to improved sanitation facilities such as flush toilets or ventilated improved pit latrines (VIPs), which is also lower than the national average of 30%. The lack of access to these basic needs has resulted in a high incidence of waterborne diseases in Siaya County. For instance, the Siaya County Government reported 4,652 cases of cholera in the county between January and December 2019.

In Siaya County, water and sanitation projects have been hampered by communication challenges among stakeholders, as identified by a study by the Water Governance Institute (WGI) in 2018. The study highlighted the lack of effective communication channels, coordination, and collaboration as key challenges. To address this, a communication framework that ensures regular and effective communication among stakeholders is recommended, as effective communication and stakeholder engagement are critical to the success of development projects, according to a report by the United Nations Development Programme (UNDP, 2018).

Oyoo et al. (2020) found that the lack of access to clean water and improved sanitation facilities contributed significantly to the prevalence of waterborne diseases in Siaya County. Poor communication and community participation were also identified as barriers to the success of water and sanitation projects in the county. Given the importance of communication in enabling

stakeholders to collaborate towards achieving project goals, it is considered an essential component of water and sanitation projects.

As per the previous studies that include K'omwenga et al. (2020) who examined the impact of infrastructure and funding on the implementation of water and sanitation projects in Kisumu County. Nganga et al. (2020) investigated the role of management in the implementation of water and sanitation projects in rural Kenya. Odoyo et al. (2019) examined the impact of funding and institutional arrangements on the implementation of water and sanitation projects in urban Kenya. Ayugi (2020). This study will bridge a gap from previous studies by assessing the role of project communication on performance of water and sanitation projects in Siaya County, Kenya.

Objectives of the Study

The main objective of this study was to assess the role of project communication on performance of water and sanitation projects in Siaya County, Kenya.

The study was guided by the following specific objectives: -

- i. To establish the role of communication implementation on performance of water and sanitation projects in Siaya County, Kenya.
- ii. To determine the role of communication policy on performance of water and sanitation projects in Siaya County, Kenya.

LITERATURE REVIEW

Theoretical Review

Stakeholder Theory

Freeman's stakeholder theory guided this research. According to Freeman (1994), this theory is focused on organizational management and ethical concerns in the industry, and it illustrates organizational culture in management. When making decisions and achieving organizational objectives, organizations must consider individual matters and groups that can affect their operations, according to the theory (Gibson, 2000).

Stakeholder theory explores the relationship between the organization and its micro and macro environment, as well as the consequences of how the organization's operations are carried out (Filippone, 2012). Stakeholders may come from inside or outside the organization, according to Bourne (2009). Clients, workers, vendors, contractors, NGOs, government, and the local community, to name a few, are all stakeholders on a given project.

Stakeholder theory, according to Hill and Jones (2012), can be used to gain community trust in a project. Walumbao (2011) supports this viewpoint, stating that the stakeholder theory provides principles for identifying, analyzing, and fulfilling group needs as a stakeholder. According to Danny (2014), depending on how community needs are defined and evaluated, a firm may make decisions that benefit the community or at the very least avoid harm from occurring. These choices could include following the rules of the game, adhering to communication channels, or responding to concerns or pressure brought to bear on the company. The study employs stakeholder theory to clarify the stakeholder participation component of the communication implementation aspects that helps in influencing performance of the desired projects.

Structuration Theory

Structuration theory is a 1970s organizational communication model founded by Anthony Giddens that looked at structures and social processes as inseparable. Over the last century, the relevance of human communication has been a major research topic (Richmond and McCroskey, 2009). According to Giddens, the term structure in social analysis refers to "interaction rules and resources," and more specifically to the structure's properties that enable the 'binding' of time and

space in social structures. The structure of expectations can be symbolically incorporated as long as the communication codes are ordered hierarchically (Leydesdorff, 2010).

Structuration is a method based on structural properties that are "both the medium and the product of the activities they recursively organize." Agents in the set-up of an organization are governed by structures in society's "constitution." Structures can also shift, either gradually or dramatically, as a result of structuration. When it comes to group decision-making, this ensures that the decision is influenced not only by the group's mechanisms, but also by the same rules and tools. The organization's structure represents the interdependence between input and output in any implementation phase. Organizations and other social actors are related to a social system, which is a network that organizes their actions. (Sharma & Lutchman, 2016).

This theory is relevant to this study, as it deposits that communication structures are an important entity in terms of project performance; thus being relevant to the ongoing study.

Conceptual Framework

A conceptual framework is a research tool that helps a researcher build and convey knowledge and understanding of the situation under investigation. In research, a conceptual framework is used to offer a preferred approach to an idea or thought, or to outline alternative courses of action.

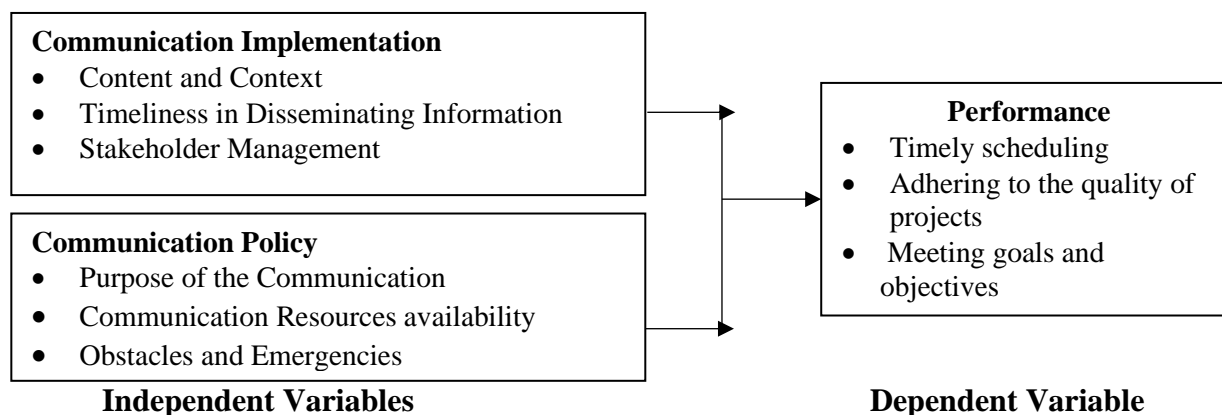


Figure 1: Conceptual Framework

Communication Implementation

Communication is crucial for project managers (Müller & Turner, 2010), as it is how they establish relationships with stakeholders. Stakeholders are known as partners rather than collaborators (Gregory, 2007). According to Vasanthi R. Perumal and Abu Hassan Abu Bakar (2011), communication entails not only the exchange of information but also the provision of what is actually needed. The significance of communication instruments (estimation, cost schedule, payment advice, and cost report, escalation costing presentation, final account, standard system records, drawings, contract condition, and preliminary documentation) is discussed in this literature.

Communication Policy

Communication policy refers to the set of rules, principles, and guidelines that govern the communication practices of an organization or government agency (Deetz, 2017). Communication policy is significant because it influences the way communication is conducted within an organization or agency and how the public perceives it (Papa, Daniels, & Spiker, 2018).

One important aspect of communication policy is the scope of coverage. This refers to the range of topics, issues, and situations that are covered by the policy. A broad scope of coverage may include internal communication, external communication, crisis communication, social media

policy, and others. A narrow scope of coverage may only include a few topics, such as email etiquette or use of certain communication tools (e.g., Slack, Zoom) (Barton & Wilson, 2018).

Another important aspect of communication policy is its enforcement measures. These measures can range from informal reminders and coaching to formal disciplinary action, including termination. The effectiveness of enforcement measures depends on the organization's culture, leadership, and communication climate. Some organizations may have a culture that supports open and honest communication, while others may have a culture of fear or distrust (Bordia & DiFonzo, 2018).

Flexibility is another important aspect of communication policy. This refers to the ability of the policy to adapt to changing circumstances or contexts. A flexible policy allows for experimentation, innovation, and creativity in communication practices. It also recognizes that communication needs may differ across departments, units, or teams within an organization. A rigid policy, on the other hand, may stifle creativity and impede effective communication (Volkmer, 2018).

Performance of Water and Sanitation Projects

Stakeholders of every project are concerned about project performance and delivery. Many stakeholders expect projects to perform well in terms of meeting their goals. A project's progress is determined by its ability to meet its goals. Project performance is linked to project success, which is linked to project goals, according to Chan and Chan (2004). Project success can be evaluated in a variety of ways, including project effectiveness, customer effect, company success, and future readiness. Time, cost, and quality are the three basic goals that bind project success together. Any project's total output is invariably a sum of the individual performance of each project goal.

Improved project output is dependent on the project team's managerial capacity. Project managers who are able to exert managerial control over their projects have a greater chance of success. The organizational structure used for project management can have a significant impact on administrative capacity and managerial power. According to Bryde (2003), the structure of a project plays a major role in the project's progress. Project management tasks that aid project progress are divided into two categories, each of which necessitates the creation of an organizational structure (Loo, 2004). Functional (planning, monitoring, and procedures) as well as human aspects are included (leadership, participation, communication).

Project performance is described by Thomas et al. (2018), Ling and Chan (2018), and Ling et al. (2018) as the measurement of project achievement using objective criteria such as time, expense, and quality targets, as well as subjective variables such as the assessment of partners' satisfaction. Time and cost overwhelm, level of time invades to the underlying project time span, and level of cost overwhelm to the underlying contract entirety were the four target variables in this study.

Empirical Review Related to the study

Communication Implementation and Project Performance

The role of stakeholder communication on project success was studied by Naqvi and Aziz (2018). A total of seventy information technology projects were chosen at random from twenty-four software houses. Data was collected in a sectional manner using questionnaires focused on the quality of stakeholder communication used by project managers and its impact on IT projects. Frequency distribution, Pearson correlation, and linear regression were used in the data analysis. The findings of the study indicated that project result dependence and stakeholder communication have a strong relationship.

Hill (2020) proposed the establishment of a project management office to facilitate the implementation of feasible communication in projects and information management. Since different stakeholders want different information, communication must be put together and delivered effectively to all key individuals. (Cataldo & Ehrlich, 2017). Implementation and effort ensure that each audience receives all of the information they need, in the format they want, and at the appropriate time.

Adan (2018) examined the role of stakeholder communication on the success of constituency development fund projects in the Kenyan constituency of Isiolo North. The study used a descriptive research design. In the Isiolo North Constituency, the analysis focused on those who served 155 CDF ventures. Data was collected using semi-structured questionnaires and interview schedules. The researchers used descriptive and inferential analysis. The communication practice of project managers and government officials in project execution led to better project results, according to this report.

According to Herbst (2016), upward communication is a necessary component of any company. Its primary goal is to transfer data from workers to managers. Internal upward communication is more than just a procedure for disseminating knowledge from the employees. People, with their own feelings, behaviors, and relationships, are the most important part. As a result, upward communication should be viewed as motivating, encouraging participation and the development of mutual confidence. Managers should encourage their workers to speak with them about their work, behaviors, thoughts, and frustrations on a regular basis. It is not enough to simply disseminate information. It is recommended that the "knowledge distribution" be minimized, and increase the amount of time spent working together, demonstrating an interest in workers and job responsibilities (Welch, 2017).

Communication Policy and Project Performance

Kyereboah-Coleman (2016) conducted a study in Ghana to examine the relationship between communication policy and project performance in public construction projects. The study used a survey research design and collected data from 120 respondents comprising of project managers, project coordinators, and communication officers of the Ghanaian government. A structured questionnaire was used to gather data on communication policy and project performance, and data was analyzed using descriptive statistics, correlation analysis, and regression analysis. The study found that the development and implementation of effective communication policies positively influence project performance. The study further revealed that effective communication policies lead to better project planning, collaboration, stakeholder involvement, and problem-solving.

Babatunde et al. (2016) investigated the impact of communication policy on the performance of construction projects in Nigeria. The study used a cross-sectional survey research design to collect data from 152 respondents from different public and private organizations involved in water supply and sanitation projects in Nigeria. A structured questionnaire was used to gather data on communication policy and project performance, and data was analyzed using descriptive statistics and multiple regression analysis. The study found that communication policies significantly affect project performance, particularly in terms of project delivery, cost, and quality. The study also revealed that communication policies improve stakeholder involvement, risk management, and decision-making.

Sogbanmu (2018) examined the relationship between communication policy and project performance in the Nigerian construction industry. The study used a mixed-methods research design that involved both quantitative and qualitative data collection and analysis. Data was collected from 10 purposively selected water supply and sanitation projects in Lagos state, Nigeria. A structured questionnaire was used to gather quantitative data on communication policy and project performance, and semi-structured interviews were conducted to gather qualitative data.

Data was analyzed using descriptive statistics and content analysis. The study found that effective communication policies significantly improve project performance, particularly in terms of time, cost, and quality. The study also revealed that communication policies lead to better stakeholder engagement, problem-solving, and decision-making.

Ololade and Afolabi (2019) investigated the impact of communication policy on project success in the Nigerian construction industry. The study used a cross-sectional survey research design to collect data from 174 respondents involved in water supply and sanitation projects in Nigeria. A structured questionnaire was used to gather data on communication policy, project performance, and project success factors, and data was analyzed using descriptive statistics and multiple regression analysis. The study found that effective communication policies have a positive impact on project success, particularly in terms of stakeholder involvement, project planning, problem-solving, and decision-making. The study also revealed that communication policies lead to better collaboration and coordination among project stakeholders.

RESEARCH METHODOLOGY

A descriptive design was used in this research. The alignment of project communication practices is linked to performance of water and sanitation projects. A descriptive survey research design, according to Lavrakas (2008), is a comprehensive research method for gathering data from a representative sample of people using instruments such as closed-ended and/or open-ended questions, observations, and interviews.

All five water and sanitation projects in Siaya County were implemented by both the national and county government. Three of these projects were implemented by the Lake Victoria South Water Works Development Agency (LVSWWDA), while the other two were implemented by the Siaya county government. These five projects formed the unit of analysis. The unit of observation was 10 project managers, specifically two project managers per project responsible for the implementation of these five projects, two donor representatives, as well as five government officials involved in the planning and oversight of the projects. The inclusion of project managers, government officials and donors provided insights into the communication strategies and policies that guide project implementation.

Therefore, the target population consisted of 10 project managers, 20 Multistakeholders forum community representatives selected from the five project areas, two donors and five government officials. This forms a target population of 37 individuals. By targeting these individuals, the study was able to gather relevant data on the communication policies and strategies that guide water and sanitation project implementation in Siaya County, Kenya. Due to the small size of the study population, the study used census sampling approach. According to Ngechu (2018), an appropriate sampling technique for a small sample size is census because it allows representation of the population.

The primary data for this analysis was collected via a questionnaire. A questionnaire is a study tool that consists of a set of questions and other prompts designed to collect data from respondents (Lumpkin & Dess, 2001). The collection of data was conducted by use of the drop and pick-up later method and the questionnaires were collected after one week by the research assistants. A pilot study may reveal areas where the main research project may stagnate, such as where research procedures may not be followed or if proposed methods or instruments are inadequate or overly complicated (Nassiuma, 2010).

To improve dependability of investigation tools, the questionnaire was pilot tested on 10% of study sample size. This therefore translates to a pilot test of 4 individuals. Because projects in Siaya and Migori County have similar characteristics, pilot test was conducted in Migori County. Both Migori and Siaya county boarder Lake Victoria and their demographics have similar

characteristics according to (UNICEF, 2018). The data obtained was quantitative as well as qualitative. The Statistical Package for Social Scientists (SPSS) version 25 was used to generate frequencies, descriptive and inferential statistics, as well as to draw conclusions and make recommendations based on the results of the analysis. Regression and correlation analysis was used to calculate the inferential statistic. The overall significance of the model was determined using a critical p value of 0.05.

FINDINGS AND DISCUSSIONS

From the 37 questionnaires 35 were completely filled and returned hence a response rate of 94.5%. The response rate was considered as suitable for making inferences from the data collected. As indicated by Metsamuuronen (2017), a response rate that is above fifty percent is considered adequate for data analysis and reporting while a response rate that is above 70% is classified as excellent. Hence, the response rate of this study was within the acceptable limits for drawing conclusions and making recommendations.

Descriptive Statistics Analysis

Communication implementation and Project Performance

The first specific objective of the study was to establish the role of communication implementation on performance of water and sanitation projects in Siaya County, Kenya. The respondents were requested to indicate their level of agreement on communication implementation and performance of water and sanitation projects in Siaya County, Kenya. The results were as shown in Table 1. From the results, the respondents agreed that the project team effectively communicates project goals and objectives to all stakeholders. This is supported by a mean of 3.996 (std. dv = 0.861). In addition, as shown by a mean of 3.819 (std. dv = 0.945), the respondents agreed that regular project updates are provided to the local community through appropriate channels. Further, the respondents agreed that progress reports on projects being implemented are released on time. This is shown by a mean of 3.798 (std. dv = 0.611).

The respondents also agreed that stakeholder analysis influences performance of water and sanitization projects. This is shown by a mean of 3.731 (std. dv = 0.908). With a mean of 3.711 (std. dv = 0.776), the respondents agreed that different communication channels are used to deliver project reports to key stakeholders. The respondents agreed that they are satisfied with the effectiveness of communication implementation process. This is shown by a mean of 3.675 (std. dv = 0.897). With a mean of 3.613 (std. dv = 0.786), the respondents agreed that the process of communication implementation is clear and flexible.

Table 1: Communication implementation and Project Performance

	Mean	Std. Dev.
The project team effectively communicates project goals and objectives to all stakeholders.	3.996	0.861
Regular project updates are provided to the local community through appropriate channels	3.819	0.945
Progress reports on projects being implemented are released on time	3.798	0.611
Stakeholder analysis influences performance of water and sanitization projects	3.731	0.908
Different communication channels are used to deliver project reports to key stakeholders	3.711	0.776
Am satisfied with the effectiveness of communication implementation process	3.675	0.897
The process of communication implementation is clear and flexible	3.613	0.786
Aggregate	3.732	0.841

Communication Policy and Project Performance

The second specific objective of the study was to determine the role of communication policy on performance of water and sanitation projects in Siaya County, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to communication policy and performance of water and sanitation projects in Siaya County, Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 2.

From the results, the respondents agreed that the communication policy is clearly defined. This is supported by a mean of 4.168 (std. dv = 0.905). In addition, as shown by a mean of 3.959 (std. dv = 0.885), the respondents agreed that the communication policy is effectively communicated to all stakeholders. Further, the respondents agreed that the communication policy is regularly reviewed and updated. This is shown by a mean of 3.920 (std. dv = 0.605). The respondents also agreed that the communication policy aligns with project goals and objectives. This is shown by a mean of 3.915 (std. dv = 0.981).

Table 2: Communication Policy and Project Performance

	Mean	Std. Dev.
The communication policy is clearly defined	4.168	0.905
The communication policy is effectively communicated to all stakeholders	3.959	0.885
The communication policy is regularly reviewed and updated	3.920	0.605
The communication policy aligns with project goals and objectives	3.915	0.981
The communication policy addresses cultural and linguistic diversity among stakeholders	3.911	0.873
The communication policy includes mechanisms for feedback and evaluation	3.897	0.786
Am satisfied with the effectiveness of the adopted communication policy	3.789	0.896
Aggregate	3.890	0.867

The respondents agreed that the communication policy addresses cultural and linguistic diversity among stakeholders. This is supported by a mean of 3.911 (std. dv = 0.873). In addition, as shown by a mean of 3.897 (std. dv = 0.786), the respondents agreed that the communication policy includes mechanisms for feedback and evaluation. Further, the respondents agreed that they are satisfied with the effectiveness of the adopted communication policy. This is shown by a mean of 3.789 (std. dv = 0.896).

Performance of Water and Sanitation Projects

The respondents were requested to indicate their level of agreement on various statements relating to performance of water and sanitation projects in Siaya County, Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 3.

From the results, the respondents agreed that Water and sanitization projects are delivered within budget. This is supported by a mean of 4.084 (std. dv = 0.997). In addition, as shown by a mean of 3.917 (std. dv = 0.831), the respondents agreed that water and sanitization projects are implemented as per the specified quality standards. Further, the respondents agreed that the level of stakeholder satisfaction on implemented water and sanitization projects is high. This is shown by a mean of 3.858 (std. dv = 0.563). The respondents also agreed that water and sanitization projects are implemented within specified timeline. This is shown by a mean of 3.831 (std. dv =

0.851). Further, the respondents agreed that there are few complaints on the quality of completed projects. This is shown by a mean of 3.822 (std. dv = 0.832).

Table 3: Performance of Water and Sanitation Projects

	Mean	Std. Dev.
Water and sanitization Projects are delivered within budget	4.084	0.997
Water and sanitization projects are implemented as per the specified quality standards	3.917	0.831
The level of stakeholder satisfaction on implemented water and sanitization projects is high	3.858	0.563
Water and sanitization projects are implemented within specified timeline	3.831	0.851
There are few complaints on the quality of completed projects	3.822	0.832
Aggregate	3.836	0.818

Inferential Statistics

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (communication implementation, projects in Siaya County, Kenya) dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients. The current study employed Taylor (2018) correlation coefficient ratings where by 0.80 to 1.00 depicts a very strong relationship, 0.60 to 0.79 depicts strong, 0.40 to 0.59 depicts moderate, 0.20 to 0.39 depicts weak.

Table 4: Correlation Coefficients

		Project Performance	Communication Implementation	Communication Policy
Project Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	35		
Communication Implementation	Pearson Correlation	.856**	1	
	Sig. (2-tailed)	.001		
	N	35	35	
Communication Policy	Pearson Correlation	.859**	.189	1
	Sig. (2-tailed)	.000	.081	
	N	35	35	35

Moreover, the results revealed that there is a very strong relationship between communication implementation and performance of water and sanitation projects in Siaya County, Kenya ($r = 0.856$, p value = 0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings conform to the findings of Adan (2018) that there is a very strong relationship between communication implementation and project performance.

The results also revealed that there was a very strong relationship between communication policy and performance of water and sanitation projects in Siaya County, Kenya ($r = 0.859$, p value = 0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the results of Kyereboah-Coleman (2016) who revealed that there is a very strong relationship between communication policy and project performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (communication implementation, and communication policy) and the dependent variable (performance of water and sanitation projects in Siaya County, Kenya)

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921	.848	.849	.10120

a. Predictors: (Constant), communication implementation, and communication policy

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.848. This implied that 84.8% of the variation in the dependent variable (performance of water and sanitation projects in Siaya County, Kenya) could be explained by independent variables (communication implementation, and communication policy).

Table 6: Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	12.027	4	3.018	58.038	.000 ^b
Residual	1.568	30	.052		
Total	13.595	34			

a. Dependent Variable: Performance of water and sanitation projects

b. Predictors: (Constant), communication implementation, and communication policy

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 58.038 while the F critical was 2.690. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of communication implementation, and communication policy on the performance of water and sanitation projects in Siaya County, Kenya.

Table 7: Regression Coefficients

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	0.341	0.089		3.831	0.000
Communication implementation	0.387	0.095	0.386	4.074	0.001
Communication policy	0.398	0.102	0.399	3.902	0.001

a Dependent Variable: Project Performance

The regression model was as follows:

$$Y = 0.341 + 0.387X_1 + 0.398X_2$$

The results also revealed that communication implementation has significant effect on performance of water and sanitation projects in Siaya County, Kenya, ($\beta_1=0.387$, p value= 0.000). The relationship was considered significant since the p value 0.000 was less than the significant level of 0.05. The findings conform to the findings of Adan (2018) that there is a very strong relationship between communication implementation and project performance.

In addition, the results revealed that communication policy has significant effect on performance of water and sanitation projects in Siaya County, Kenya ($\beta_1=0.398$, p value= 0.002). The relationship was considered significant since the p value 0.002 was less than the significant level of 0.05. The findings are in line with the results of Kyereboah-Coleman (2016) who revealed that there is a very strong relationship between communication policy and project performance

Conclusions

the study concludes that communication implementation has a positive and significant effect on performance of water and sanitation projects in Siaya County, Kenya. The study revealed that content and context: content review, video conferencing and team collaboration, timeliness in disseminating information and stakeholder management influence performance of water and sanitation projects in Siaya County, Kenya.

The study also concludes that communication policy has a positive and significant effect on performance of water and sanitation projects in Siaya County, Kenya. The study revealed that participatory approach, clear objectives, availability of resources, obstacles and emergency plan and feedback reporting influence performance of water and sanitation projects in Siaya County, Kenya.

Recommendations

Based on the findings, this study makes the following recommendations;

Develop a detailed communication plan for each water and sanitation project, outlining clear objectives, target audiences, key messages, communication channels, communication resources, obstacle and emergency plan and a timeline. Regularly update and review the plan to ensure its relevance throughout the project lifecycle.

Develop a robust stakeholder engagement strategy that identifies key stakeholders and outlines their roles, interests, and communication preferences. Maintain open channels of communication with stakeholders to address concerns, gather feedback, and keep them informed about project developments.

Suggestions for Further Studies

This study focused on assessing the role of project communication on performance of water and sanitation projects in Siaya County, Kenya. Having been limited to water and sanitation projects in Siaya County, Kenya, the findings of this study cannot be generalized to performance of other projects. The study therefore suggests further studies on assessing the role of project communication on performance of the other projects in Kenya.

Further, the study found that the independent variables (communication implementation, and communication policy) could only explain 84.8% of the performance of water and sanitation projects in Siaya County, Kenya. This study therefore suggests research on other factors affecting the performance of water and sanitation projects in Siaya County, Kenya. More studies on factors affecting performance of water and sanitation are discussed by Tukamuhabwa et al. (2023), secondary data sources; Looking back: The long-term impacts of water and sanitation projects, USAID Kenya Integrated Water, Sanitation and Hygiene Project Quarterly progress report 5 for January to March 2017.

REFERENCES

Adan, I. H. (2018). *Influence of stakeholders role on performance of constituencies development fund projects a case of Isiolo North Constituency, Kenya*. Unpublished Masters in project planning and management, University of Nairobi.

- Affare, M. A. W. (2018). *An assessment of project communication management on Construction projects in Ghana* (Doctoral dissertation).
- Freeman, R.E. (1994). The Politics of Stakeholder Theory. *Business Ethics Quarterly*, 4, 409-421. <https://doi.org/10.2307/3857340>
- Goldratt, E.M. (1990). *What is this thing called theory of constraints and how should it be implemented?*. North river press.
- Hargie, O. E., & Tourish, D. E. (2009). *Auditing organizational communication: A handbook of research, theory and practice*. Routledge/Taylor & Francis Group.
- Ike, L. A., Diallo, A. & Thuillier, D., (2016). Critical Success Factors: An Empirical Investigation. *International Journal of Project Management*, 30 (2012) pp 105.
- Jiang, D., & L. Pretorius (2017). Cross-cultural communication behavior in international engineering projects: Chinese and South African Perspectives. *South African Journal of Industrial Engineering*, 22(2), 54-67
- Karolina, M. (2015). Communication management in project teams – practices and patterns. A paper presented on *International Conference on Managing Intellectual Capital and Innovation for Sustainable and Inclusive Society*, May 27-29, 2015, Bari, Italy
- Kenya Integrated Water, Sanitation, and Hygiene Project (KIWASH). (n.d.). *About KIWASH*. Retrieved from <https://www.kiwash.org/about>
- Kiihio L. K. (2015). *Influence of Project Management Leadership on Performance of Information Technology Projects: A Case Study of Fintech Kenya*.
- Kisia, S., Ondimu, K., & Mureithi, S. (2019). Communication challenges and prospects for the water, sanitation and hygiene (WASH) sector in Kenya: A systematic review. *International Journal of Environmental Research and Public Health*, 16(11), 1997.
- Kisia, S., Ondimu, K., & Mureithi, S. (2019). Communication challenges and prospects for the water, sanitation and hygiene (WASH) sector in Kenya: A systematic review. *International Journal of Environmental Research and Public Health*, 16(11), 1997.
- K'omwenga, J. M., Onditi, A. L., & Otiende, J. E. (2020). The Impact of Infrastructure and Funding on the Implementation of Water and Sanitation Projects in Kisumu County, Kenya. *Journal of Water and Health*, 18(3), 376-384.
- Kotaska, J. (2019). Indigenous water governance and the role of communication in water and sanitation projects in Canada. *Journal of Environmental Policy & Planning*, 21(6), 721-735.
- Kothari, C. (2004). *Research Methodology: Methods & Techniques*. 2nd Ed. New Delhi, India: New age International Publishers.
- Ksenija Culo (2020), "Communication management is critical for project success" *International Journal for Project Management*. 64, 20-32
- Kuusisto, J., Varjopuro, R., & Salmivaara, A. (2016). Communication challenges in environmental policy integration: Water management in Finland. *Environmental Science & Policy*, 60, 82-89.
- Lavrakas, P. J. (2018). *Encyclopedia of survey research methods*. Sage Publications.
- Leydesdorff, L., (2010). The Communication of Meaning and the Structuration of Expectations: Giddens' "structuration theory" and Luhmann's "self-organization." *Journal of the American Society for Information Science & Technology*.
- Ling, F., & Chan, S. (2002). *Performance Evaluation of alternative Project Procurement Methods*. Research brief. National University of Singapore.
- Mankad, A., Bekessy, S. A., & Gordon, A. (2019). Stakeholder engagement in recycled water projects: Insights from Melbourne, Australia. *Journal of Environmental Planning and Management*, 62(7), 1272-1289.
- Ministry of Water and Sanitation. (2019). *Siaya County Water and Sanitation Master Plan 2019-2030*. Retrieved from <https://www.water.go.ke/wp-content/uploads/2019/10/Siaya-Water-and-Sanitation-Master-Plan-2019-2030.pdf>

- Ministry of Water and Sanitation. (2019). *Siaya County Water and Sanitation Master Plan 2019-2030*. Retrieved from <https://www.water.go.ke/wp-content/uploads/2019/10/Siaya-Water-and-Sanitation-Master-Plan-2019-2030.pdf>
- Monette, D.R., Sullivan, T.J. & De Jong, C.R. (2020). *Applied social research: A tool for the human services*. Thomson Brooks/Cole, London.
- Ondieki, C. M., Okotto-Okotto, J., Okotto, L. G., & Olago, D. O. (2017). Factors influencing the implementation of the Kenya Rural Water and Sanitation Program in Nyando District. *Journal of Water, Sanitation and Hygiene for Development*, 7(3), 433-441.
- Phiri, B. (2015). *Influence of monitoring and evaluation on project performance* (Master's thesis, University of Nairobi, Nairobi).
- Prüss-Üstün, A., Wolf, J., Bartram, J., Clasen, T., Cumming, O., Freeman, M. C., ... & Hunter, P. R. (2019). Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: An updated analysis with a focus on low- and middle-income countries. *International Journal of Hygiene and Environmental Health*, 222(5), 765-777.
- Richmond, V., & McCroskey, J., (2019) *Organizational Communication for Survival: Making Work, Work*, 4th Edition; University of Alabama, Birmingham
- Sekaran, U. (2006). *Research Methods for Business: A Skill Building Approach*. 4th edition, New Delhi-India: John Willey and Sons, Ltd.
- Siaya Water and Sanitation Company (SIWASCO). (n.d.). *About Us*. Retrieved from <http://www.siwasco.co.ke/about-us/>
- Thomas, J., Delisle, C. L., & Jugdev, K. (2018). *Selling project management to senior executives*. Project Management Institute Inc., Newtown Square.
- Torgerson, J. (2017). *The impact of stakeholder communication on the success of community water projects in Kenya (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (Accession No. 10625926)
- Tukamuhabwa, B., Mutebi, H., Akandwanaho, E., Kabagambe, L., & Tumukunde, I. (2023). Enhancing water and sanitation project performance in a developing economy: Role of governance mechanisms and risk management practices. *Cogent Business & Management*, 10(3). <https://doi.org/10.1080/23311975.2023.2263994>
- Turner, R., & Cochrane, R. (2017). Goals-and-methods matrix: Coping with projects with ill-defined goals and/or methods of achieving them. *International Journal of Project Management*, 11(2), 93-102.
- UN. (2019). *Sustainable Development Goal 6: Ensure availability and sustainable management of water and sanitation for all*. Retrieved from <https://www.un.org/sustainabledevelopment/water-and-sanitation/>
- UNICEF. (2018). Water, Sanitation and Hygiene (WASH) Global Thematic Report.
- UNICEF. (2017). *Water, sanitation and hygiene (WASH) in Kenya*. Retrieved from <https://www.unicef.org/kenya/water-sanitation-and-hygiene-wash-kenya>
- United Nations Development Programme (UNDP). (2021). *Kenya*. Retrieved from <http://hdr.undp.org/en/countries/profiles/KENYA>
- Wang'ombe, J. K., Ondari-Okenwa, E., & Okech, R. A. (2016). Communication challenges in water and sanitation projects in peri-urban areas of Tanzania. *Journal of Development and Communication Studies*, 5(2), 61-80.
- Whitaker, J., Mohtadi, S., & James, R. (2019). Communication challenges in large-scale infrastructure projects: The case of California WaterFix. *Environmental Communication*, 13(2), 177-191.
- Whitaker, J., Mohtadi, S., & James, R. (2019). Communication challenges in large-scale infrastructure projects: The case of California WaterFix. *Environmental Communication*, 13(2), 177-191.
- Zikmund, G.W., Babin, B.J., Carr, C.J. & Griffin, M. (2010). *Business Research Methods*. 8th edition. South-Western, Cengage Learning.