

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Determinants of Performance of Water Projects in Chuka/Igambang'ombe Constituency, Tharaka Nithi County, Kenya

Sharon Kangai Mwathi

Student, Department of Management Science,
Kenyatta University, Kenya

Dr. Paul Sang

Senior Lecturer, Department of Management Science,
Kenyatta University, Kenya

Abstract:

Performance and success of any given project is pegged to key result areas that are put in place revolving around time, scope and cost. Organizations are realizing the impact that projects and further project management can have on their success. Most water projects implemented in the rural areas to address the problem of water accessibility are observed to be non-operational. The purpose of this study was to assess the determinants of performance of water projects in Chuka/Igambang'ombe Constituency, Kenya. It aimed to establish the influence of stakeholder participation, effect of communication, and explore the effect of project leadership on the performance of the projects. The study was grounded on the stakeholder theory, theory of development communication and theory of constraints. The research employed descriptive research design and the study's target population was 218 people, who consisted of project teams, the local residents, local authority (ward administrators, assistants, chiefs, assistant chiefs) and the representatives of county government in the constituency. The research adopted stratified and systematic random sampling and the primary data was collected using a questionnaire that comprised of open and closed ended questions. SPSS (Statistical Package for the Social Sciences) was used to produce frequencies, descriptive and inferential statistics which was used to derive conclusions and generalizations regarding the population. Descriptive statistics such as percentages, mean, frequency, distribution and standard deviation were computed to describe the characteristics of the variables of interest while in inferential statistics, correlation, multiple regression analysis were used to establish the nature and magnitude of the relationships between the variables and to test the hypothesized relationships. The results of data analysis were presented using figures and tables and the findings showed that, for the water projects to be successful, there was need to involve stakeholders from the onset, have clear communication channels and enhance project leadership. The study therefore recommends that; all stakeholders should be accorded an opportunity to partake in each phase of the project cycle, proper communication should be boosted throughout the implementation of the projects and lastly introduction of effective controls by having clearly defined staff roles.

Keywords: Communication, determinant, participation, project, project leadership, project performance, stakeholder participation

1. Introduction

Water is an important natural resource to all forms of life and their existence and is an indispensable prerequisite for inclusive poverty reduction, sustainable socio-economic development and economic growth. Despite this importance, over three billion people (40% of the global population) continue to face inequitable access to water resources necessary for their survival and wellbeing (UNICEF, 2015). It is further estimated that, provision of adequate water resources fell short of the Millennium Development Goal (MDGs) of 2015. The analysis of the MDGs presented that in most of the world, a large portion of the rural populace is still in need of adequate and safe water supplies. This situation frustrates the current hard to live with circumstance to the locales especially in developing states, therefore pressing even harder the social financial headway of their existent economy.

Inequitable access to adequate water resources undermines the wellbeing and physical prosperity of the society. It has been evaluated that 13 million children under 5 years old annually pass away from poor hygiene and different infections connected to poor access to water resources (Redclift, 2014). Harvey and Reed (2013) contend that low supportability rates are identified with network problems. In addition, water supply undertakings have been unequivocally scrutinized and have concentrated unnecessarily on physical development and expanding inclusion targets. However, they have to a great extent overlooked what occurs at the sources of water after development (Lockwood, 2014).

The way to supportability is to include the clients in the arranging, execution, activity, assurance and upkeep of water supply frameworks as per necessity and possibility (Davis & Liyer, 2012).

Davies (2002) recognizes that a project's success is usually estimated against time, cost and quality and undertaking success is measured against the targets of the task. He further recognizes success criteria, as the measure against which achievement of a project is estimated while success components are the sources of information that lead either legally or in a roundabout way to the accomplishment of the project. Ashley, Lurie, and Jaselskis, (1987), characterized venture accomplishment as results superior to expected or typically saw as far as cost, plan, quality, well-being and member fulfillment. Their examination spearheaded an examination of the elements which were most compelling in effectively finishing development ventures.

As indicated by Olaf (2009), projects have recognizable stages and each stage has a lot of difficulties for the project managers. These stages can be recognized as central points for impacting the project's achievement. On the off chance that one of these stages is arranged or implemented erroneously, the project will have a high likelihood of failure. Olaf (2009) further distinguishes that picking the correct undertaking association as the first and presumably the most significant key to progress for venture the executives. In this manner substantive amount of time ought to be expended in thinking about the choice about arrangement, readiness and commencement of the project. Next, he takes note of that a project planning to start with is a basic arranging tool, however while taking a shot at the task, it will wind up one of the most significant control instruments and in the wake of consummation the venture it is an estimation of whether the task has reached its objective. Lastly, assessment and control keep the entire project within scope, on time and inside spending plan. Contingent upon the magnitude of the task, control will be either simple or multifaceted (Olaf, 2009).

It is estimated that almost 70 % of Kenya's territory coverage is either arid or semi-arid (Republic of Kenya, 2004). This area covers mostly parts of the Rift Valley, North Eastern, Eastern and Coastal regions. In addition, about 75% of Kenya's populace gains depend on rain-fed agriculture for their livelihoods. As such, climate change that reduces precipitation has the potential to impact negatively of their standard of living.

Water shortage and unusual precipitation are a common occurrence in Chuka/Igambang'ombe Constituency - Kenya. The area is marked as one of the Arid and Semi-Arid Lands (ASALs) in the country (Republic of Kenya, 2012). The area is characterized by low levels of rainfall averaging 600mm a year. The area is in need of sustainable water supply. In addition, a genuine worry for the residents is safe water supply especially during the dry seasons. It is estimated that area has about per capita water supply of 650m³. This is against the recommended level of 1000m³ by Wambongo, (2013).

Almost the entire Tharaka Nithi County is straddled by perpetual waterways that navigate the district from Mount Kenya before ending up into stream Tana. Regardless of the clear wealth of water assets, the Sub County keeps on being liable to dry spell and water supply instability. Little use is made of the accessible water asset in the area (Smucker & Wisner, 2008). Furthermore, there is damage of existing boreholes, dams and skillet and also limited water harvesting initiatives. More than 62% of families in Chuka/Igambang'ombe Constituency need to go for as much as ten kilometers to bring water. Water time at the source averages over two hours particularly in wells and boreholes. This further, subjects women and girls to psychological stress and loss of precious time that could be channeled into productive activities such as business, farming and schooling.

1.1. Statement of Problem

A Tana -Athi Water Services Board enquiry of water expert organizations, found that four out of 15 Water Service Points (WSPs) had the choice to fulfill their financial obligations (TSWB, 2016). Furthermore, the majority of the WSPs had poor administration structures, procedures and processes, poor frameworks for income gathering, and experienced diseconomies of scale in their operations (TSWB, 2016).

In Kenya, most water undertakings executed in the rustic zones to address the issue of water openness are seen to be non-operational. If the pattern of need of community proprietorship proceeds, regional water offices will be non-functional and this will render all the positive endeavors by the legislature and the non-governmental organizations towards accomplishing openness to clean water futile, inefficient and of no impact.

Evidence presented by Lockwood (2014), indicates that in Africa, most of the states operate at between 30 and 60 percent capacity. In Kenya, Tanzania and Uganda, it is evaluated that 55 percent of all provincial water supplies do not work (Baumann, 2009).

A few studies have been done on elements affecting venture execution. For example, Boru (2012) completed an examination on determinants of network responsibility for undertakings in Kenya with reference to Central Division in Isiolo County, Kenya. The study found that network contribution, innovation, separation, administration structures and preparing, impacts the degree of network responsibility for projects. Ochelle (2012) completed an evaluation on variables impacting supportability of network water extends in Kenya; an instance of water extends in Mulala division, Makueni County. Ali (2015) took a look at determinants of network responsibility for tasks in focal division, Isiolo County. The board of water focus is a significant part of practical conveyance of water assets to both the rural and urban population in Kenya. As of now, network interest in rustic water supply in Kenya appears to be small degrees of network level proprietorship. In Kieni East Division, Nyeri County, Rimberia (2012) considered the determinants of water ventures support. He further states that the rate of support on water projects in developing nations is alarmingly low. This is attributed to asset absence, lack of skill and abilities as well as extra support on administration and maintenance.

None of these studies has delved into water project execution in Chuka/Igambang'ombe Constituency, Tharaka Nithi County. Therefore, this study assessed the determinants of execution of water extends in Chuka/Igambang'ombe Constituency.

1.2. Purpose of the Paper

The overall purpose of this study was to assess the determinants affecting the performance of water projects in Chuka/Igambang'ombe Constituency, Kenya. Specifically:

- To establish the influence of stakeholder participation on the performance of water projects in Chuka/Igambang'ombe Constituency, Kenya
- To establish the impact of communication on the productivity of water projects in Chuka/Igambang'ombe Constituency, Kenya
- To explore the impact of project leadership on the productivity of water projects in Chuka/Igambang'ombe Constituency, Kenya

2. Literature Review

2.1. Theoretical Framework

2.1.1. Stakeholder Theory

This theory, founded by Freeman in 1984, attests that project undertakings ought to take into consideration of concerns by stakeholders that can influence or are influenced by their exercises (Gibson, 2000) while settling on choices and accomplishing hierarchical objectives.

Equally, the stakeholder theory takes a glimpse at how these connections influence the way in which the association steers its exercises (Filippone, 2012). A key point on the stakeholder theory and in relation to this study is that, organizations that closely engage their partner networks adequately would endure extensive periods of time and perform exceptionally better than those associations that do not (Freeman, 1994).

2.1.2. Theory of Development Communication

Under this theory, it's thought that communication that inspires individuals and offers clarity of the project accomplishments, is an asset for effectively engaging them (Toney and Powers, 1997 and Larkin and Larkin, 1996). Through this study, the theory of development communication can therefore demonstrate the degree to which development communication impacts the implementation of water projects.

2.1.3. Theory of Constraints

This is an administration model that perspectives any sensible framework as being limited in accomplishing a greater amount of its objectives despite some limitations (Eliyahu, 2013).

The executives' and leadership point of view on project success and execution is relied on existing obligations, for example, times accessible, spending plan, extension and learning factors. The means in applying the theory of constraints empowers project leadership to stay concentrated on the most significant limitations in their frameworks.

2.2. Empirical Framework

2.2.1. Stakeholder Participation and Project Performance

It is pertinent that stakeholders are involved in a project from the onset. Wamugu and Ogollah (2017) conducted a research on the contribution of partner's interest to the presentation of voting public improvement reserve extends in Mathira East in Kenya. An enlightening examination configuration was embraced, whereby both quantitative and subjective information was gathered utilizing a survey from Mathira East voting demographic. Responses from respondents were collected using stratified and basic arbitrary inspecting strategies. The findings demonstrated that support in commencement, investment in arranging, cooperation in execution and interest had a positive and critical impact on execution of CDF ventures. The study inferred that most of the work done during the inception phases, for example, recognizable proof screening and determination of stakeholders, were the most basic all things considered, and contributed greatly to the execution of the projects.

2.2.2. Communication and Project Performance

Communication is the deliberate movement of information exchange between at least two members so as to relay data through a mutual arrangement of signs and semiotic guidelines.

According to Toor and Ogunlana, (2010), project communication is the trading of venture explicit data with the accentuation on making understanding between the sender and the collector. Having clear and understandable communication is one of the most substantial fundamentals totaling to the achievement of any project. Teams executing projects must practice clarity and give precise data to all concerned associates. For example, individuals working of data collection receive ready data in an assortment of approaches from respondents to address the issues of project stakeholders. They would need to clearly communicate the findings to the execution teams to ensure all grounds are covered during implementation. Project communication ensured that general communication and correspondence between team members is including and optimum.

2.2.3. Project Leadership and Project Performance

Skills that relate to leading of a project apply incredible impact on how activities will be presented through different ways. For example, group coordinated effort, asset the board, correspondence and group improvement. As

indicated by Jiang (2014), project performance abilities impact execution in two different ways: direct and circuitous. In the direct way manner, use of fitting undertaking authority abilities improves venture execution with comparing capabilities. In the latter manner, fitting authority individuals improve collaboration, which accomplishes powerful task execution.

In their exploration, Chaudhry, Kalyar and Rehman, (2012) explained project authority as a significant body in giving rules to representatives, overseeing them productively and combining working effort to comprehend their work and taking care of their issues. Compelling pioneers formulate programs for the sake of preparation for their representatives, in order for them to think about new methodology and innovations utilized in their sort of work and in the processes fully understand their work requirements (Jing and Avery, 2011). To reinforce the success of any project authority in impacting venture execution, the leader of the team must have individually required capacities and skill. The leader should show proactivity in their work which in turn causes the team to feel motivated and take on their individual tasks for project completion. The conviction that undertaking authority assumes a huge job in impacting venture execution and assurance is generally acknowledged, yet minimal research underscores on this issue (Jing and Avery, 2011).

3. Research Methodology

3.1. Research Design

The study made use of a descriptive research design. This design enabled the examination to get actualities and answers for a huge sample of respondents and along these lines, builds the legitimacy and generalization of discoveries

3.2. Target Population

The study's objective populace was the number of water extends in Chuka voting demographic. The focus was on the quantity of water extends in Chuka/Igambang'ombe Constituency which has 5 wards to be specific; Mariani, Karingani, Magumoni, Mugwe and Igambang'ombe. This included people with identity drawn from the accompanying gatherings of Chuka/Igambang'ombe electorate which has 5 wards in the province.

3.3. Sample and Sampling Technique

The study used purposive and stratified sampling techniques. Purposive sampling was utilized to pick 10 key respondents in the network from each ward that is in the board of trustees, subsequently an aggregate of 50 occupants. The respondents along these lines were stratified into four classes. Basic arbitrary testing technique was at that point utilized on every stratum, on venture group, nearby expert workers and government agents.

Category	Population
Local residents	50
Local Authority employees	63
Project team	75
Government representatives	30
Total	218

Table 1: Population of the Study

3.4. Data Collection Instrument

The study utilized primary data to collect essential information which was gathered utilizing semi-structure questionnaire which involved both open-ended and closed questions. The 5-point Likert scale was used in some instances to assess items of interest.

3.5. Pilot Test

Pilot study has been portrayed by different creators as an activity that guarantees that mistakes are minimized. Kothari (2004) portrays a pilot study as an imitation and a practice of the principal overview. A pilot study was led so as to build up the legitimacy and unwavering quality of information accumulation instruments. Reliability and legitimacy are significant issues in the estimation of research factors. Neuman (2003) clarifies that the two issues concern the precision of measures or markers. They are the key markers of the nature of the information gathering instrument.

3.6. Validity

The legitimacy of an instrument identifies with its capacity to quantify the developed as indicated. Legitimacy involves the meticulousness and importance of inductions which are dependent on the examination outcomes (Bryman and Cramer, 2005). The study guaranteed build legitimacy for the poll since it created dependent on comparative earlier investigations and furthermore the advancement of a legitimate calculated structure dependent on experimental writing audit.

3.7. Reliability

Reliability is a proportion of how much a data instrument yields predictable conclusion or information after reused preliminaries. Unwavering quality arrangements with how reliably comparative estimates produce comparative outcomes (Crano & Brewer, 2014). This study addressed identicalness unwavering quality by utilizing Cronbach's alpha factual test which extends from 0 to 1 and the higher the coefficient, the more solid the scale. The study consequently utilized the cut - off point coefficient of 0.7 or more as a solid proportion of dependability which concurs with Nunnally's (1978) proposal.

3.8. Data Analysis

The analysis of data is the handling of information gathered to make significant data out of them (Sounders, Lewis and Thornhill, 2009).

Information examination in this manner was done subjectively and quantitatively utilizing the measurable bundle for social researchers (SPSS V20) for both illustrative and inferential insights. Enlightening Statistics were utilized in changing the crude information into a structure that can be effectively comprehended and translated. This is normally the main type of investigation where midpoints are determined, recurrence conveyances given and rate dispersions given. The above was agreeable by Adejimi, Oyediran and Ogunsanmi (2010), who said that unmistakable insight is a strategy for introducing information quantitatively and portraying it in a sensible structure.

Inferential examination that was utilized in the study was the bivariate and the multivariate examination. Bivariate examination included the investigation of impact of individual autonomous variable on ward factors. To lead bivariate examination the investigation utilized Pearson correlation coefficient. This relationship coefficient lies between - 1 and 1 and it consequently measures how much two factors are directly related. The higher the magnitude of the relationship coefficient the higher the level of relationship between two factors. Multivariate examination was used where the investigation utilized a various direct relapse model. This study tested the factual centrality of the different autonomous factors on the picked ward factors. Faraway (2002), states that numerous straight relapses are utilized in circumstances where the quantity of free factors are multiple. The examination utilized the accompanying multivariate relapse model;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where Y represents the Water project Performance, X_1 represents stakeholder participation, X_2 represents communication, X_3 represents leadership and ε represents stochastic term/error term. The α and β 's are the alpha and beta coefficients respectively that was determined after fitting the regression equation above. The β 's indicates the effect of a unit change in the independent variables on the dependent variable.

4. Research Findings & Recommendation

Statement	SD	D	N	A	SA	M	SD
Project beneficiaries are satisfied	1.4%	6.9%	0.0%	75.0%	16.7%	3.99	0.76
The projects are in good physical condition	1.4%	19.4%	5.6%	13.9%	59.7%	4.11	1.251
The project met the community requirements	1.4%	4.2%	6.9%	52.8%	34.7%	4.15	0.833
The project has directly benefited the intended users	2.8%	4.2%	19.4%	16.7%	56.9%	4.21	1.074
I am satisfied with the process by which the project is being implemented.	2.8%	8.3%	8.3%	22.2%	58.3%	4.25	1.097
The projects have met the intended objectives	0.0%	1.4%	2.8%	81.9%	13.9%	4.08	0.467
Aggregate Score	1.6%	7.4%	7.2%	43.8%	40.0%	4.132	0.914

Table 2: Water Project Performance

Key: Sd- Strongly Disagree, D-Disagree, N-Neutral, A-Agree, Sa- Strongly Agree, M-Mean, Sd- Std. Deviation

Statement	SD	D	N	A	SA	M	SD
Key stakeholders participated in identification, initiation, and planning of water projects	2.8%	4.2%	19.4%	16.7%	56.9%	4.21	1.074
Stakeholders' involvement was imperative into the achievement of water projects	2.8%	8.3%	8.3%	22.2%	58.3%	4.25	1.097
Public participation in water projects was more challenging than benefiting	0.0%	1.4%	2.8%	81.9%	13.9%	4.08	0.467
Key stakeholders participated in budgetary allocations meeting	0.0%	1.4%	1.4%	77.8%	19.4%	4.15	0.494

Statement	SD	D	N	A	SA	M	SD
Involvement of key stakeholders had advanced community members problem solving skills	1.4%	6.9%	0.0%	75.0%	16.7%	3.99	0.76
Association of key stakeholders had progressed communities' technical capabilities	2.8%	8.3%	8.3%	22.2%	58.3%	4.25	1.097
Key stakeholders participated in identifying, initiating, and planning water projects	0.0%	1.4%	2.8%	81.9%	13.9%	4.08	0.467
Stakeholders' involvement was crucial to the water projects achievement	0.0%	1.4%	1.4%	77.8%	19.4%	4.15	0.494
Aggregate Score	1.2%	4.2%	5.6%	56.9%	32.1%	4.15	0.744

Table 3: Stakeholder Participation and Water Project Performance

Statement	SD	D	N	A	SA	M	SD
Clearer communication and clarified tasks of shareholders were outlined in the projects Plan	2.8%	4.2%	19.4%	16.7%	56.9%	4.21	1.074
Valuable communications reflected openness and lenience of socio-cultural diversity on project	2.8%	5.6%	8.3%	66.7%	16.7%	3.89	0.848
Meeting helped prevail over communications obstacles and increased level of performance	1.4%	5.6%	16.7%	75.0%	1.4%	3.69	0.664
Task administrators had or ought to have exceptional communications expertise to guarantee project performance	2.8%	2.8%	6.9%	86.1%	1.4%	3.81	0.642
Constant deliberation among assignment advocates and the main shareholders advanced projects' level of performance	0.0%	2.8%	4.2%	83.3%	9.7%	4	0.504
Aggregate Score	2.0%	4.2%	11.1%	65.6%	17.2%	3.92	0.746

Table 4: Communication and Water Project Performance

Key: SD- Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA- Strongly Agree, M-Mean, SD- Std. Deviation

Statement	SD	D	N	A	SA	M	SD
Technical and qualified expertise was vital for the project completion	6.9%	8.3%	11.1%	44.4%	29.2%	3.81	1.158
Theoretical views helped in detection of setbacks and prototypes resulting to project success	5.6%	11.1%	9.7%	36.1%	37.5%	3.89	1.193
The job tasks and duties for the workforce were evidently outlined	2.8%	15.3%	4.2%	43.1%	34.7%	3.92	1.123
There was successful and proficient deployment of resources in the project	1.4%	8.3%	9.7%	41.7%	38.9%	4.08	0.975
Top management support and direction leads to enhanced quality management in project execution	1.4%	5.6%	11.1%	54.2%	27.8%	4.01	0.864
Ensures timely and efficient disbursement of the funds to the project implementation	0.0%	5.6%	8.3%	62.5%	23.6%	4.04	0.74
Aggregate Score	3.0%	9.0%	9.0%	47.0%	32.0%	3.96	1.009

Table 5: Project Leadership and Water Project Performance

Key: SD- Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA- Strongly Agree, M-Mean, SD- Std. Deviation

4.1. Inferential Statistics

4.1.1. Correlation Analysis

As presented in Table 6, Pearson's product of moment's correlation coefficients was used to reveal the linear association among the study variables. Outcomes pointed out an affirmative relationship between water project

performance and all the predictor variables. This clearly means that a positive adjustment in stakeholder participation, project leadership and communication led to enhanced water project performance, this correlation is brought out in Table 6.

The association has been illustrated by the correlation co-efficient of 0.875, implying a positive relationship between stakeholder participation and project performance. It is also proven by the significance value of 0.000 which is less than that of critical value (0.05). The outcomes additionally indicated that existence of a significantly positive ($r=0.669$, $p<0.000$) association between communication and project performance. The positive relationship among the variables points out that amplified performance can be linked to advanced communication efficacy as illustrated by a positive association reported amongst the variables.

Finally, the outcomes directed that there exists a significantly positive ($r=0.618$, $p>0.000$) association between water project performance and project leadership. The connection amongst the variables indicated that if project leadership efficiency was upgraded and improved then that could be linked with enhanced project performance as revealed by the positive relationship reported amongst the variables.

Variable		Project Performance	Stakeholder Participation	Communication	Project Leadership
Project Performance	Pearson Correlation	1			
	Sig. (2-tailed)				
Stakeholder Participation	Pearson Correlation	.875**	1		
	Sig. (2-tailed)	0			
Communication	Pearson Correlation	.669**	.622**	1	
	Sig. (2-tailed)	0	0		
Project Leadership	Pearson Correlation	.618**	.563**	.468**	1
	Sig. (2-tailed)	0	0	0	

Table 6: Correlation Analysis
** Correlation Is Significant at the 0.01 Level (2-Tailed)

4.1.2. Regression Analysis

So as to show the significance of statistics of the independent variables on the dependent variable, regression analysis was engaged. The goodness of fit for the regression of independent variables and project performance was acceptable as shown below on Table 7. An R squared of 0.807 shows 80.7% of the variations in water project performance are accounted for by variations in stakeholder participation, communication, as well as project leadership. From this it can thus be affirmed that the variables adopted in the study cooperatively explained a grander proportion of the variation in performance of water projects in Kenya and that the unexplained variation is small.

From the summary table below adjusted R^2 was 0.798 this indicates that the combined effect of predictor variables (stakeholder participation, communication, and project leadership) explains 79.8% of variations in water project performance. The correlation coefficient of 89.8% indicates that the collective effect of the predictor variables has a sturdy and positive correlation with project performance. This also meant that alteration in the drivers of project performance (stakeholder participation, communication, and project leadership) has a strong and a positive effect on project performance.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.898a	0.807	0.798	0.21395

Table 7: Regression Model Fitness
a. Predictors: (Constant), Project Leadership, Communication, Stakeholder Participation

Preceding the estimation of the regression model, the goodness of fit was performed and the results are presented in the

Table 8 where the outcomes indicated that the overall model was noteworthy, that is, stakeholder participation, communication, and project leadership are befitting variables for project performance ($F = 94.588$, $p\text{-value}=0.000$). From the discoveries, it is inferred that all independent variables were significant in explaining changes in project performance. This is validated by a p value of 0.000, that is less than the acceptance critical value of 0.05.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.989	3	4.33	94.588	.000b
	Residual	3.113	68	0.046		
	Total	16.102	71			

Table 8: Analysis of Variance

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Project Leadership, Communication, Stakeholder Participation

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	1.056	0.205		5.147	0.000
Stakeholder Participation	0.467	0.051	0.681	9.198	0.000
Communication	0.145	0.058	0.174	2.506	0.015
Project Leadership	0.129	0.055	0.153	2.338	0.022

Table 9: Regression Coefficients

a. Dependent Variable: Project Performance

Regression outcomes point out a significant relationship between stakeholder participation and performance (beta=0.467, p value, 0.000). This indicates that an upturn in stakeholder involvement by 1 unit leads to improved performance at a rate of 46.7 percent. Results further show that communication and performance had a positive and significant relationship (beta=0.145, p value 0.015). This denotes that one percentage change in communication effectiveness is allied with 14.5 percentage increase in performance.

Lastly, findings directed that project leadership had a positive and significant relationship with performance (beta=0.129, p value, 0.022). This infers that an increase in project leadership effectiveness by 1 unit leads to improved performance of water projects at rate of 12.9 percent.

5. Recommendations

Further to study findings, the following is recommended:

All stakeholders in the project play various roles that are key to its success. They should therefore be involved in the deliberations of the project from stages of inception to full implementation. Leaving out stakeholders at any stage of the project cycle presents challenges and failure of achieving success.

On communication, there was necessity to enhance communication throughout the execution of the projects. Clear channels of communication should be put in place for expedition and elimination of any delays that may creep into the project implementation process. Regular meetings should be held by the project team in liaison with consultants and contractors for proper briefing to avoid breakdown in communication.

The study also recommends introduction of effective controls including processes and procedures, having a clear set of objectives and well-defined staff roles and responsibilities, member involvement in project activities and having a means of measuring performance which are all geared towards ensuring operative and effectual application of resources and achieving satisfactory progress on performance.

6. References

- i. Adejimi, A., Oyediran, O. S., and Ogunsanmi, E. B. (2010). Employing Qualitatively Enriched Semi Structured Questionnaire in Evaluating ICT Impact on Nigerian 'Construction Chain Integration'. *The Built & Human Environment Review*, 3(1), 49-62.
- ii. Ali (2015). Determinants of community ownership of water projects in Kenya; A case of central division, Isiolo County, Master thesis, University of Nairobi.
- iii. Ashley, D., Lurie, C., & Jaselskis, E. (1987). Determinants of construction project success. *Project Management Journal* 18, 69-79.
- iv. Baumann, E. (2009). *Common RWSN context*, Discussion Paper, St. Gallen,
- v. Boru A.J. (2012). *Determinants of community ownership of water projects in Kenya, a case of central division, Isiolo County*. Unpublished MA Thesis UoN
- vi. Bryman, A., & Cramer, D. (2005). *Quantitative data analysis with SPSS 12 and 13: a guide for social scientists*. Psychology Press.
- vii. Chaudhry M.S., Kalyar M.N., & Rehman A. (2012). The Impact of Leadership on Project Performance. *Industrial Engineering Letters*, 2(2), 18 - 24.
- viii. Crano, W. D., Brewer, M. B., & Lac, A. (2014). *Principles and methods of social research*. Routledge.
- ix. Davies, C. T. (2002). The 'real' success factors on projects. *International Journal of Project Management* 20, 85-90.
- x. Davis, J. & Liyer, P. (2012). *Taking Sustainable Rural Water Supply Services to Scale: A Discussion Paper*, Bank of Netherlands Water Partnership Energy and Water Department, World Bank, Washington DC.
- xi. Harvey, P.A. & Reed, R.A. (2013). Community-Managed Water Supplies in Africa: Sustainable or Dispensable? *Community Development Journal*, 42(3), 365.

- xii. Jiang, J. (2014) 'The Study of the Relationship between Leadership Style and Project Success', *American Journal of Trade and Policy*, 1(1), pp. 51-55. doi: 10.18034/ajtp.v1i1.361.
- xiii. Jing, F. F., & Avery, G. C. (2011). Missing links in understanding the relationship between leadership and organizational performance. *International Business & Economics Research Journal (IBER)*, 7(5).
- xiv. Kothari, C.R. (2004) *Research Methodology: Methods and Techniques*. 2nd Edition, New Age International Publishers, New Delhi.
- xv. Lockwood, H. (2014). *Institutional Support Mechanisms for Community-Managed Rural Water Supply and Sanitation Systems in Latin America*, Prepared for the Bureau of Latin American and the Caribbean USAID under EHP Project.
- xvi. Ndili, S., (2013). *Influence of stakeholders participation on completion of infrastructural projects: A case of public secondary school in Mwingi- East District*. Nairobi: University of Nairobi Press.
- xvii. Neuman, W. (2003). *Social research methods: Qualitative and quantitative approaches* (5th Ed.). Needham Heights, MA: Allyn and Bacon.
- xviii. Nunnally, J. C. (1978). Citation Classic-Psychometric Theory. *Current Contents/Social & Behavioral Sciences*, (22), 12-12.
- xix. Ochelle G.O (2012) *Factors influencing sustainability of community water projects in Kenya, a case of water projects in Mulala Division, Makueni County*
- xx. Olaf, P. (2009). *Project Management*. Horizons University : Ventus Publishing .
- xxi. Redclift, M. (2014). *Wasted: counting the costs of global consumption*. London: Earthscan. World Bank 2000a: *World development indicators 2000*. Washington DC: Oxford University Press.
- xxii. Republic of Kenya (2012) '*Kenya Post Disaster Needs Assessment (PDNA): 2008-2011 Drought*'. With technical support from the European Union, United Nations and World Bank.
- xxiii. Rimberia E. K. (2012). *Determinants of water projects sustainability, A case of water projects in kieni east division, Nyeri County*, Master thesis, University of Nairobi.
- xxiv. Smucker, T. & Wisner, B. (2008). *Changing Household Responses to Droughts in Tharaka, Kenya: Vulnerability, Persistence and Challenge*. Oxford: Blackwell Publishing.
- xxv. Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research methods for business students*. (5th Edition). London: Prentice Hall.
- xxvi. Toor, S.-R. and Ogunlana, S. O. 2010 Beyond the 'iron triangle': Stakeholder perception of key performance indicators (KPIs) for large-scale public sector development projects. *International Journal of Project Management* 28 (3), 228-236.
- xxvii. TSWB, W. (2016). *Review of environmental impact assessment for the proposed borehole*. Nairobi : kenface enconsults (africa) ltd.
- xxviii. Wambongo C.S. (2013) *Effects of Climate Variability on Water Resources and Livelihoods and State of Adaptive Capacity in Semi-Arid Tharaka District, Kenya*. Unpublished . Doctor of Philosophy (PhD) of Kenyatta University
- xxix. Wamugu, J. W. & Ogollah, K. (2017). Role of stakeholders participation on the performance of constituency development fund projects in Mathira East constituency in Kenya. *International Academic Journal of Information Sciences and Project Management*, 2(1), 104-125
- xxx. WHO-UNICEF. (2015). *Joint Monitoring Programme for Water and Sanitation*. http://www.wssinfo.org/en/238_wat_latino.html.