EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Entrepreneurship and Project Management
Vol. 1, No. 2, pp. 25-37: ISSN 2789-2115
Email: info@edinburgjournals.org

Critical Success Factors and Performance of Water Projects in Machakos County, Kenya

[1*]Donatter Mwikali Muema & [2]Dr. Lucy Ngugi

[1,2]Department of Management Science, Kenyatta University

***Corresponding author's e-mail: donattermuema6@gmail.com**

How to cite this article: Muema, D. M., & Ngugi, L. (2021). Critical success factors and performance of water projects in Machakos County, Kenya. ***Journal of Entrepreneurship and Project Management, 1*****(2), 25-37.**

Abstract

The increasing crisis on water causes a big threat towards the progress of the world to viable development in the new millennium. However, the performance of water projects especially in the developing economies has registered low performance levels. This study, therefore, sought to analyze critical success factors on the performance of water projects by Machakos County Government, Kenya. The study used a descriptive survey research design. The study established that funds availability, stakeholders' participation, technical capacity, and organizational culture positively and significantly determine the performance of water projects. The study recommended that all county governments must always ensure proper projections are made before the commencement of the projects' works. Also, the management of water projects funded by the counties should come up with effective communication channels between parties engaged in the project implementation process. The study recommended that to enhance technical capability and capacity, county governments should embrace the current drilling machinery and equip county engineers with skills that match with current trends. Given that the success of county water projects depends on strong cohesive organizational culture, it's therefore paramount for all counties to continually nurture their organizational culture for better results.

Keywords: *Critical success factors, funds availability, stakeholders' participation, technical capacity, organizational culture, performance of water projects*

1.0 Introduction

Accessibility to safe water for drinking and sanitation happens to be an international concern, particularly as a Millennium Development Goal, and currently, it has continued to be addressed as a basic right of humans (UNDP, 2014). Clean water happens to be a need for every human being. Nonetheless, above a billion individuals across the globe do not have the accessibility to clean water for drinking. This challenge is specifically acute in the rural regions and the small communities, in which collection of water may need physical effort hours, sources of way might be contaminated, or perhaps must be bought at very expensive rates to enable proper hygiene and health.

The increasing crisis on water causes a big threat towards the progress of the world to viable development in the new millennium. There's increasing acknowledgment that the deepening

and urgent crisis in stewardship for water across the globe is a heavy challenge in nations despite several human development and aid yeas, it is still the main problem to make ensure water accessibility to all individuals. The rate of performance in projects for water in the nations that are developing is disturbingly low, due to lack of capacities, resources, and maintenance and service spare parts (Hazelton, 2015).

The performance of projects is a key factor for the success of any government project (Binder, 2017). Project managers use management tools to plan and implement their projects to optimize the probability of success. During the implementation phase, most of government-funded projects are hindered by financial constraints. Inadequate finance is one of the major causes of delay in completion of projects in many countries in the world. According to Zagorsky (2016), adequate and timely funding is fundamental for the success of the project. Where projects are underfunded or untimely funded, project performance is affected, and therefore the completion on time is also affected. Financial difficulties in terms of insufficient funds to pay for materials, budgetary controls, financial training, wages and machinery in government sponsored projects often cause delays.

Globally, the performance of a project is grounded on budget, deliverables, and budget controls. Based on the research of Savoldelli, Azzone and Arnaboldi (2014) in the government of Italy, the usage of the practices of management of a project in the public industry has been confirmed to be a quite successful means which would help in advancing the abilities of the management as well as facilitating the public industry to successfully finish the projects as well as realizing the objectives of development.

In the nation of Ghana, a lot of improvement on projects accomplishment has been experienced. Agyeman (2015) in his study discovered completion of projects has become the major center of operation of nearly all governments from the ancient periods. In South Africa, project financing in many governments departments is one of the issues that influence project delays, incompletion of projects, poor workmanship and cost overruns therefore affecting the performance of the whole project. It is asserted that when delays and cost overruns set in, projects cannot be completed within the budget, time and scope (Oluwoye & Crawford, 2016).

In Kenya, Mwakajo and Kidombo (2017) investigated the factors influencing project performance using a case of county road infrastructural projects. Different project management actions need to be undertaken as they have an important impact on the productivity of the project and long-term sustainability. Over relying on external financing and technical knowledge further aggravates project efficiency issues as any realized delays affect the day-to-day running of the project, which in turn interferes with achieving positive potential results. Offering frequent assistance in terms of technical skills and funding resources has an impact on the achievement of the project. Essentially, appropriate financing guarantees that projects continue to run. Project teams must guarantee that the project implemented moves in the desired direction and therefore does not compromise the quality of the desired outcome.

The County Government of Machakos has established various projects for water that focus on making better lives for the residents of Machakos. This entails dam construction and boreholes' drilling. Nonetheless, like most sections of the globe, the county of Machakos has owned some problems in hitting deadlines as far as projects for water are concerned. Truly, many projects presently continuing haven't been acting out to anticipations as far as timeliness is concerned. For instance, projects begun in the previous 2 years are way overdue the scheduled time in which they were supposed to be finished (Housing and Public works department, 2018). The

WB (2015) report indicates only 21 percent of the desired water projects have efficiently and successfully been finished, 45 percent are still in the struggle to get completed whereas the ones that are remaining have failed or even been abandoned.

1.1 Statement of the Problem

At every financial year, the government of Kenya finances many projects for county and central governments, including roads construction, IT and educational projects, settlements, irrigation, and dam projects and amongst others. Many of the development projects access funding across all the counties in Kenya. However, there have been complaints of stalled water projects projects taking long to complete, poorly implemented projects, and indeed white elephant projects. A report by World Bank (2015) on Machakos county shows that only 21% of the intended water projects have been effectively and efficiently completed, 45% are still struggling while the remaining have been abandoned or failed. This indicates that various water projects face enormous challenges of performance in the county. In 2017, the abandoned and failed water projects were reported to be at 38%, 44% in 2018, and 47% in 2019 (Kiseu, 2019).

Studies on projects performance have been carried across the globe. Haseeb (2018) on problems of projects and1effects of delays in the Construction1Industry of Pakistan observed that1government construction projects in Pakistan are frequented by delays mainly caused by changes in design for construction and access to development funding from concerned government departments. Fugar (2016) investigated the causes of delays in construction projects in Ghana with1the results showing that financial factors were the causes of delays in building construction projects in Ghana. Sunjka and Jacob (2017), on the causes and effects of project delays in the Niger Delta in Nigeria, noted that insufficient funding and lack of strict budgetary controls compromise project execution. Locally, Marangu (2016); and Naidoo (2017) inferred that private sector projects have higher success rates than government projects. According to these studies, a major challenge that is faced in county government projects is that they do not stick with the budget nor meet the timelines set or even yield a product that kowtows to the quality standards established.

Further majority of the studies locally have given much attention to the construction industry disregarding a very important sector of the economy which is the water sector especially at this time where much of the water projects are done by the County Governments. This study therefore sought to fill this research gap by answering the following question: what are the critical success factors on performance of water projects in Machakos County?

2.0 Theoretical Review

The study was supported by the theory of project management. Howell and Koskela (2002) established the theory of management of project management that points out that the practices of management entail three sub-sections that include planning theory, execution theory, and the theory of control. The theory of planning hypothesized that during project planning, there's a managerial section that highly targets individuals' activity as essentially situated. Importantly, planning is a tool used by the management to gather all the requisite resources (inputs: money, time, materials, and manpower) for conducting the work that the project has defined. Howell and Koskela (2002), stated, the execution theory proclaims managerially the execution concerns dispatching jobs to the stations of work, and that is as well deemed as the theory of classical communication. Nonetheless, for effective execution, the theory is supposed to be supplemented with the action or language perception the vice employed in

communication of the dispatched tasks to the stations of work is supposed to be fully inclusive to the workers.

There are supposed to be mechanisms of feedback which are going to send the workers comprehension of the passed instructions and all that, allow work to be implemented as the plan has envisaged. The control theory entails two models: scientific experimentation and the thermostat model (Howell & Koskela, 2002). Therefore, project control entails measuring performance, identification of nonconformity, and learning which are the causatives of nonconformity, their impacts, and the ideal ways of defying them. The process of learning is a path that may be employed by the contractors towards improving the performance of the project in question.

The three theories; theory of planning, theory of control and execution theory all discuss this study's independent variables, planning of a project at the level of management, processes of controlling like M&E, and projects execution. Planning of the projects of water is supposed to be approached in the level of management by resources organization for instance money, time, materials, and manpower. The project's execution is significant and pursues the main sections of the projects of water. That is discussed through the theory of execution. Lastly, M&E happens to be a measure of control for any project's performance because it does control all operations that are geared to performance.

2.1 Empirical Review

Baietti and Peter (2015) carried a study on funds availability and performance of projects for water in Scotland. A sample of 400 staff at the local governments was interviewed where the research design was descriptive survey. The study revealed the availability of funds and water projects in Scotland reports that local governments face financial issues that derail the implementation of water projects. Well, laid out fiscal decentralization structures that enabled the devolution of funds from the central government did affect the execution of the projects of water by the provincial governments. This they noted created an enabling environment for the timely provision of financial resources needed to implement water projects consequently influencing access to water.

Sharma (2015) analyzed the important factors in the effective execution of projects for water in the rural Philippines. The study was carried on 600 respondents in the rural Philippines where random sampling was used as the research design. The study observed that in provinces where local government embraced participation of the community in the execution of projects for water, success was achieved in comparison to those that neglected the importance of involving the community. Further, he argued this was because community participation provided avenues to access raw materials, demand for transparency in the utilization of funds and provision of cheap labour.

Soumare and Gouhou (2016) analyzed the effects of projects manager in the implementation of projects of water in India. The research incorporated a descriptive design of research. There was the application of qualitative and quantitative techniques of data collection. The research recognized that managers of a project are supposed to have enough technical skills and know-how towards performing their work. This is significant in the sector of construction where many projects pursued are greatly complex and technical, and a comprehension of scientific and engineering principles is important. In an atmosphere like that, the manager of a project is supposed to have an understanding of the work level concerning the problems that the team dealing with the project is encountering.

EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Entrepreneurship and Project Management
Vol. 1, No. 2, pp. 25-37: ISSN 2789-2115
Email: info@edinburgjournals.org

Sánchez (2015) carried a study on organizational culture and performance of water projects in Columbia. The study was carried on 300 employees working with the Ministry of Water and Sanitation and Local Governments. The study revealed that organizational culture in local governments characterized by clientelism which resulted in bureaucratic tendencies in the implementation process was responsible for stalled water projects especially in rural Colombia. Further, he observes that this is characterized by bureaucratic tendencies in tendering water projects and the derailed enacted of water laws that would expedite the implementation of these projects negatively influenced access to water.

3.0 Research Methodology

The study used a descriptive survey research design whereby 434 solar-powered new boreholes, 240 dams and pans, 216 river weirs, and 2 huge dams were assessed. This formed the studies unit of analysis. The unit of observation was 184 project managers, project coordinators, independent contractors, technical staff, and community leaders whereby a sample of 126 was picked using the Yamane Formulae. Primary data was collected using a questionnaire. Quantitative data were analyzed using descriptive statistics and presented using frequencies, percentages, and Measures of central tendencies. Further, a multiple linear regression model was used to show the relationship between dependent and independent variables.

4.0 Results and Discussion

This section presents descriptive statistics and regression analysis results.

4.1 Descriptive Statistics for Study Variables

Funds Availability

The first variable was funds availability. Responses on statements provided are presented in Table 1.

Table 1: Funds Availability

Statement	SA	D	N	A	SA	Mean	Std Dev
Projects for Water must have financing systems that enable accountability and projections of cash flows	1%	1%	19%	55%	24%	3.93	0.67
Projects for water must have financing systems that enable the development of marketable products.	0%	4%	20%	46%	30%	4.04	0.67
Water projects should have reliable sources of funding.	4%	9%	25%	40%	22%	3.99	0.68
There are fewer incidences of misappropriation of funds allocated for water projects	1%	5%	18%	45%	31%	4.12	0.7
Projects are completed in time according to the planned budget avoiding cost overruns	1%	4%	12%	56%	27%	4.13	0.78
Aggregate Mean/Std Deviation						**4.04**	**0.70**

Results of this research show that projects implemented by the Machakos county government were completed in time according to the planned budget avoiding cost overruns (M = 4.13 SD =0.78) however members agreed that there are fewer incidences of misappropriation of funds

allocated for water projects (M = 4.12 SD =0.70) and that projects for water must have financing systems which enables the development of products that are marketable (M = 4.04 SD =0.67). Thesefindings concur with the research findings by Cleland (2016) that some community-based projects collapse following the misappropriation of funds.

Further, the study revealed that water projects should have reliable sources of funding (m = 3.99 SD=0.68) and that projects for water must have financing systems that enable the development of products that are marketable (m = 3.93 SD =0.67). The study findings are in line with those of Faguet and Fabio (2017) who revealed that the main hindrances in the performance of water projects are insufficient financial resources. The aggregate mean was 4.04 and had a standard deviation of 0.70.

Stakeholder Participation

The second variable was stakeholder's participation and the results on statements in Table 2.

Table 2: Assessment of stakeholder participation

Statement	SD	D	N	A	SA	Mean	Std Dev
The county government has devised a local community participation program for all water projects	4%	6%	27%	41%	22%	3.96	0.62
Local community engagement in formulating water projects plans gives priceless support for the projects.	6%	9%	21%	39%	25%	3.95	0.7
Stakeholders expect county representatives to ensure that action is taken when the system does not perform well	1%	6%	21%	43%	29%	4.13	0.67
If water projects are to effectively be implemented and yield long-term benefits, local people must be involved	2%	3%	8%	48%	38%	4.15	0.6
Applying a unified government methodology and involvement can serve as a successful means of supporting projects of water	7%	13%	22%	36%	22%	3.84	0.7
Aggregate Mean/Std Deviation						**4.01**	**0.66**

Results of this research show that if water projects are to effectively be implemented and yield long-term benefits, local people must be involved (M = 4.15 SD =0.60) stakeholders expect county representatives to ensure that action is taken when the system does not perform well (M = 4.13 SD =0.67) and that the county government has devised a local community participation program for all water projects (M = 3.99 SD =0.62). These findings concur with the research findings of the Machakos county government and has devised a local community participation program for all water projects. They also concur with the argument by Zooneveld (2017) that a good stakeholder involvement program enables all the interested parties to contribute towards the projected project outcome.

Further, the study revealed that local community engagement in formulating water projects plans gives priceless support for the projects (M = 3.95 SD =0.70) and that applying a unified government methodology and involvement can serve as a successful means of supporting projects of water (M =3.84 SD =0.70). These findings go hand in hand and confirm the

argument that involving stakeholders such as the project beneficiaries improves the overall accountability in management, helps in enhancing trust, embracement of the project ideas by the beneficiaries, and sometimes may lower cost through free labors from the beneficiaries. The aggregate mean was 4.01 and a standard deviation of 0.66.

Technical Ability

The third variable statements on technical ability are presented in Table 3.

Table 3: Effect of technical ability

Statement	SD	D	N	A	SA	Mean	Std Dev
There's sufficient trained personal for the water projects in the County	6%	10%	27%	40%	17%	4.19	0.52
Enough technical & financial support is given from the County government on projects of water	9%	15%	24%	37%	15%	4.20	0.56
Engineering support in maintenance and operations of projects for water is given by the county government	2%	5%	6%	50%	37%	3.82	0.69
Training provided to a member of the public for maintenance and operations of projects for water like sand dams and boreholes	1%	3%	8%	45%	43%	3.88	0.61
Aggregate Mean						**4.02**	**0.59**

Results of this research show that enough technical & financial support is given from the County government on projects of water (M =4.20 SD =0.56) and that there's sufficient trained personal for the water projects in the County (M = 4.19, SD =0.52). These findings concur with the argument by Authority (2009) that technical expertise should ensure that project risks are identified and managed appropriately.

Further, the study revealed that training provided to members of the public for maintenance and operations of projects for water like sand dams and boreholes (M =3.88 SD =0.61) and that Engineering support in maintenance and operations of projects for water is given by the county government (M = 3.82 SD =0.69). This move affirms the call by Soumare and Gouhou (2016) that all managers administering projects are supposed to have a deep understanding of the work level concerning the problems that the team dealing with the project is encountering. The aggregate mean was 4.02 and a standard deviation of 0.59.

EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Entrepreneurship and Project Management
Vol. 1, No. 2, pp. 25-37: ISSN 2789-2115
Email: info@edinburgjournals.org

Organization Culture

Results on the statements on the fourth variable are presented in Table 4.

Table 4: Assessment organizational culture

Statement	SD	D	N	A	SA	Mean	Std Dev
Project culture is one of the most influential factors in water projects	7%	8%	36%	35%	14%	3.88	0.71
Effective trust, co-operation, communications, and the willingness of the team towards sharing problems and ideas amongst the members of the team improves water projects	6%	9%	21%	39%	25%	4.1	0.65
Top and line management supporting/attitude, monitoring, prioritization, and project staffing is critical in water project	0	3%	17%	45%	35%	4.09	0.74
A robust internal culture, a concern with shared values mission and long-term directions, as well as positive environment are critical in project projects	4%	6%	30%	40%	20%	3.87	0.67
Projects function in an environment of a business which is supposed to be paired to the needs of good projects for water	1%	4%	6%	49%	40%	4.31	0.46
Aggregate Mean						**4.05**	**0.65**

Results of this research show that projects function in an environment of a business which is supposed to be paired to the needs of good projects for water (M =4.31 SD =0.46) effective trust, co-operation, communications, and the willingness of the team towards sharing problems and ideas amongst the members of the team improve water projects (M = 4.10 SD =0.65) and that top and line management supporting/attitude, monitoring, prioritization and project staffing is critical in water project (M = 4.091SD =0.74). These findings concur with the research findings of Sánchez (2015) that strong organizational culture acts as a guiding force for all teams so it's essential given that it is what may attract potential or repulse stakeholders from onboarding.

Further the study revealed that project culture is one of the most influential factors in water projects (M = 3.88 SD =0.71) and that robust internal culture, a concern with shared values mission and long-term directions, as well as positive environment are critical in project projects (M = 3.87 SD =0.67). These findings go hand in hand (Olsen (2015) that effective trust, co-operation, communications and the willingness of the team towards sharing problems and ideas amongst the members of the team improves water projects and that project culture is one of the most influential factors in water projects. The aggregate mean was 4.05 and a standard deviation of 0.65.

EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Entrepreneurship and Project Management
Vol. 1, No. 2, pp. 25-37: ISSN 2789-2115
Email: info@edinburgjournals.org

Project Performance

The research further inquired on project performance of water projects funded by the Machakos county government, in this regard participants were asked to rate their project against the set measures.

Table 5: Statements Relating to Project Performance

Statement	SD	D	N	A	SA	Mean	Std Dev
Projects for water by the County Government perform better than other projects	1%	3%	16%	50%	30%	4.16	0.67
There is good governance of projects for water	7%	8%	28%	43%	16%	3.96	0.62
The projects for water satisfy the needs of community members	4%	7%	20%	40%	29%	3.9	0.68
County Government water projects are finished in good time	4%	14%	15%	40%	27%	3.98	0.67
Water projects by the County Government are completed within budget	4%	8%	11%	41%	36%	4.06	0.74
Aggregate Mean						**4.01**	**0.68**

Results of this research show that projects for water by the County Government perform better than other projects (M =4.16 SD=0.67), water projects by the County Government are completed within budget (M = 4.06 SD=0.74) also the study noted that County Government water projects are finished in good time (M = 3.98 SD =0.67), further the study revealed that there is good governance of projects for water (M =3.96 SD =0.62). The aggregate mean was 4.01 and a standard deviation of 0.68.

4.2 Multiple Regression Analysis

Model summary

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.821[a]	.674	.661	.45336

The study used the coefficient of determination to evaluate the model fit. The adjusted R^2 also called the coefficient of multiple determinations, is the percent of the variance in the dependent explained uniquely or jointly by the independent variables. The model had an average adjusted coefficient of determination (R^2) of 0.661 and which implied that 66.1% of the variations in project performance are explained by the independent variables under study (funds availability, stakeholder participation, technical capacity, and organizational culture).

Analysis of Variance

The study further tested the significance of the model by use of ANOVA technique. The findings are tabulated in Table 7.

EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Entrepreneurship and Project Management
Vol. 1, No. 2, pp. 25-37: ISSN 2789-2115
Email: info@edinburgjournals.org

Table 7: Analysis of Variance Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.151	4	10.538	51.270	.000[b]
	Residual	20.348	99	.206		
	Total	62.498	103			

Critical value =2.50

From the ANOVA statics, the study established the regression model had a significance level of 0.00% which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (51.270>2.50) an indication that funds availability, stakeholder participation, technical capacity and organizational culture all have a significant effect on project performance. The significance value was less than 0.05 indicating that the model was significant and ideal for making conclusions on the population parameters.

Regression Coefficients

Table 8: Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	1.290	.310		4.164	.000
	Funds Availability	.458	.127	.241	3.607	.000
	Stakeholder Participation	.491	.117	.274	4.201	.000
	Technical Capacity	.590	.128	.337	4.606	.000
	Organizational Culture	.492	.142	.239	3.463	.001

Source: Research data, 2020

As per the SPSS generated output as presented in table above, the equation ($\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$) becomes:

$Y= 0.1290+ 0.458X_1+ 0.491X_2 + 0.590X_3+ 0.492X_4$

From the regression model obtained above, a unit change in funds availability holding the other factors constant would positively change performance of county water funded projects by a factor of 0.458. The significant value was 0.000 which is less than 0.05 and therefore the variable was deemed significant. These findings confirm research findings by Mark (2016) who revealed that for projects and especially the water to achieve success; a constant flow of resources is requisite.

In project sustainability, a unit change in stakeholder participation while holding the other factors constant would positively change the performance of county water-funded projects by a factor of 0.596. The significant value was 0.000 which is less than 0.05 and therefore the variable was deemed significant. The findings above conform to findings by Zooneveld (2017) that a good stakeholder involvement program enables all the interested parties to contribute towards the projected project outcome.

Further results show that a unit change in technical capacity while holding the other factors constant would change positively the performance of county water-funded projects by a factor

of 0. 590. The significant value was 0.000 which is less than 0.05 and therefore the variable was deemed significant. The findings concur with Franks and Curswoth, (2003) who found out that technical capacity is positively related to project success and future sustainability.

A unit change in organizational culture while holding the other factors constant would positively change the performance of county water-funded projects by a factor of 0.492. The significant value was 0.001 which is less than 0.05 and therefore the variable was deemed significant. According to Olsen (2015) that effective trust, co-operation, communications and the willingness of the team towards sharing problems and ideas amongst the members of the team improves water projects and that project culture is one of the most influential factors in water projects

The analysis was undertaken at a 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and $\alpha = 0.05$. If the probability value was less than α, then the predictor variable was significant otherwise it wasn't. All the predictor variables were significant in the model as their probability values were less than $\alpha = 0.05$.

5.0 Conclusion

The first objective was to investigate the influence of funds available on the performance of water projects in Machakos County, Kenya. The study concludes that funds availability plays a critical role in the performance of water projects funded by Machakos County, a considerable number of water projects in Machakos were accomplished within the projected time and budget. However, a few of them exceeded the laid projections thus leading to cost overruns and time, the study also concludes that there are fewer incidences of misappropriation of funds allocated for water projects and that some community water projects in Machakos have failed to sustain themselves once handed over to local community management due to mismanagement of funds.

The second objective was to analyze the influence of stakeholders' participation on the performance of water projects in Machakos County, Kenya. The study concludes that stakeholders' participation is paramount in enhancing the performance of water projects in Machakos County; to beef up this initiative Machakos county government had developed a comprehensive stakeholder participation plan, among the involved were local community beneficiaries, the businessmen, contractors, the Government regulatory bodies and all who ensured quality accountability in the overall implementation process for water projects.

The third objective was to assess the influence of technical ability on the performance of water projects in Machakos County, Kenya. The study concludes that even though the technical ability had a positive significant effect on the performance of water projects in Machakos County, it's however regrettable that the current technology used by the county is not the best compared to current trends. Results also pointed inconsistencies with the monitoring and evaluation process, to adjust to the identified weaknesses, the Machakos county government was keen on providing regular training to members of the public for maintenance and operations of projects for water like sand dams and boreholes.

The fourth objective was to determine the influence of organizational culture on the performance of water projects in Machakos County, Kenya. The research concludes that strong organizational culture is of high significance in enhancing the performance of water projects, Machakos county government exhibited strong cohesive organizational culture that was observed in the way each county division, for instance, all county employees fully supported water project goals right from project conceptualization, implementation phase, and

project self-sustainability project stages, in real measures, this was observed through team interactions, workflow management, treatment of stakeholder ideals and redress on complains raised at every phase.

6.0 Recommendations

On the first objective which was to investigate the influence of funds availability on performance, the study recommends that to ensure the success of water projects, all county governments must always ensure proper projections are made before the commencement of the projects' works. Further, this should entail aspects such as project budgetary allocations, time estimates, project monitoring, risk assessments metrics, and sustainability.

The second objective was to analyze the influence of stakeholders' participation on performance, the study recommends that the county oversight committee should carefully assess the interest of all stakeholders. This will help to eliminate intergroup conflicts thus enhancing project accountability and sustainability in a later stage. Also, the management of water projects funded by the counties should come up with an effective communication channel between parties engaged in the project implementation process.

The third objective was to assess the influence of technical ability on the performance of water projects in Machakos County, Kenya. The study recommends that to enhance technical capability and capacity, county governments should embrace the current drilling machinery and equip county engineers with skills that match with current trends.

The fourth objective was to determine the influence of organizational culture on the performance of water projects in Machakos County, Kenya. Given that the success of county water projects depends on strong cohesive organizational culture, it's therefore paramount for all counties to continually nurture their organizational culture for better results. This, calls for measures that enhance teamwork, internal efficiencies, and accountability in the process as well as dispute redress measures.

References

Agyeman, D. K. (2015). Sociology of education for Africa students. Accra: Black Mask Limited Publishers Limited.

Baietti, A., & Raymond, P. (2015). Financing water supply and sanitation investments: utilizing risk mitigation instruments to bridge the financing gap.

Franks, T. R. & Curswoth, J. (ed) (1993). Managing Projects in Developing Countries. Pearsons Education Ltd. Edinburgh Gate.

Koskela, L. J., & Howell, G. (2002). The underlying theory of project management is obsolete. In *Proceedings of the PMI research conference* (pp. 293-302). PMI.

Marangu, I. M. (2016). Factors influencing sustainability of community-based projects in Kenya: A case of Kiirua Kathita water project in Meru County. *International Academic Journal of Information Sciences and Project Management*, *3*(4), 631-654.

Mwakajo, I. S., & Kidombo, H. J. (2017). Factors influencing project performance: A case of county road infrastructural projects in Manyatta Constituency, Embu County, Kenya. *International Academic Journal of Information Sciences and Project Management*, *2*(2), 111-123.

Naidoo, A. (2011). The role of monitoring and evaluation in promoting good governance in South Africa: A case study of the Department of Social Development. Doctoral dissertation, University of Witwatersrand.

Sánchez Delgado, M. (2015). *Administación 1*. Grupo Editorial Patria.

Savoldelli, A. (2014). Managing a public sector project: the case of the Italian Treasury Ministry. *International Journal of Project Management*, 22(3), 213-223.

Sharma, M. (2015). Volunteers and community-based rehabilitation. Asia Pacific Disability Rehabilitation Journal, 12, 141-148.

Soumaré, I., Gohou, G., & Kouadio, H. (2016). Comparative study of the characteristics of FDI from China to Africa versus developed countries. *Transnational Corporations Review*, *8*(3), 165-177.

Sunjka, B.P., Jacob, U. (2017). Significant Causes and Effects of Project Delays in the Niger Delta Region, Nigeria. *In*: Proceedings, SAIIE25, Stellenbosch, pp. 641–654.