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ABSTRACT

Water projects all over the world have been started so as to solve challenges facing water availability. Various agencies like Government, Non-Governmental Organisations (NGOs) and donors have for a long time been committed to building water projects like building dams, boreholes, and wells. However, fewer projects experience successful completion and more so within the budget owing to the fact that water project stalled and collapsed. This therefore, led to continuous shortage water, particularly in the rural and slum areas of Kenya. Budget planning is necessary for project success. Many studies have been carried out on the influence of budget planning on projects implementation, but the main focus has been on project management practices and project performance. This study sought to fill this knowledge gap. The main objective of this study was to analyze the influence of budget planning on implementation of water projects. Cash management theory guided this study. The study used descriptive survey design. Data was collected by use of self-administered Questionnaires. The study targeted 440 respondents and the sample size were 131. Pre-test study was administered to 18 respondents of Kajiado County to test the reliability and viability of the instruments. Data was collected through administration of a questionnaire. Regression results showed that budget planning was significant on implementation of water project with the F statistics value of 49.64, and P-value of 0.000. Technology integration (moderating variable) was found to have an influence on the relationship between budget planning and implementation of water projects. In conclusion, therefore budget planning influenced implementation of water projects. The study recommended that water trust funds and other institutions funding water projects can replicate the findings of this study to improve on accessibility to safe and clean drinking water in other counties.

Key words: *Budget planning, Implementation, water projects*

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INTRODUCTION

Globally, there is uneven distribution of water and water resources especially in regions such as Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, North America and West Asia. Water consumption has increased sixfold between 1900 and 1995, owing to population growth and poor implementation of water projects. This on the other hand lead to growth in industries such as mining, agriculture and horticulture expand, sustainability of human population remains a challenge (WRMA, 2015). A survey carried out on 10,640 implemented projects globally which was valued at approximately US$7.2 billion, found out that only 2.5% achieve 100% project success globally and over 50% global business project fail (PWC, 2014).

In Africa, water shortages are related to both under-development of potentially available water resources and their uneven distribution while conserving the catchments' sustainability. According to Carter (2017), there is great and higher demand for environmental planners to enhance protection of natural resources owing to the fact that humans and the wider biosphere depend upon for their long-term survival. Water is just one of a number of vital natural resources. Project managers in charge of water, whether in government or private sectors, has to make difficult water allocation decisions. Demographic growth and uncontrolled climatic changes has led to increase in the stress on water resources. The traditional fragmented approach is no longer viable and it is essential to adopt a holistic approach to water management (UN-water ,2015).

In Kenya, it is estimated that piped water supply systems cover only 28% of the population. On the other hand boreholes, springs and wells provide water to 37% of the population. The boreholes, springs and wells also include unimproved drinking water sources. The country like many other developing countries is facing formidable freshwater planning and management challenges. Less than 65% of the population has access to safe drinking water (Furst & Hermegger, 2014). The National Water Master Plan 2030 which was launched on 26th March 2014 is a product of an intensive study of Kenya's water resources and meteorological conditions to facilitate planning for development and management of the same. According to (MoW, 2007), the core objective is first to assess and evaluate availability, reliability, quality, and vulnerability of country's water resources up to around 2050 taking into consideration climate change.

Bomet Water Company Limited, a Semi-Autonomous Government Agency (SAGA) of the County Government, currently manages nine water supply schemes. These are Itare, Sotik, Bomet, Longisa, Sigor, Chepalungu (Olbutyo), Kamureito, Ndanai and Sergutiet. Sigor water supply has been upgraded to serve a population of 68,000 residents through a joint program between the County Government and Kenya Red Cross Society (KRCS).

Currently, the greatest challenge caused by lack of financial resources is the fact that monitoring of water resources is inadequate; hence it hampers the planning and management of water resources which is yet to expand beyond national waters to Trans boundary waters. Decision making in Bomet County is done by knowledgeable individuals and this excludes the vulnerable groups such as women and the poor in the community, who often lose out in the process of water resource formulation because they lack the resources (knowledge, time, travel and money required to obtain formal authorisation (Cheruiyot, 2016).

Access to safe and clean water remains a big challenge in the county. Access to piped water is currently at 25%. Borehole yield for the northern and central parts of the county have very low and unreliable yields. Management of water service provision in Bomet County is done through delegated authority by Bomet Water Company Limited. Community water projects are also regulated by the Water Services Regulatory Board (WASREB). Majority of the water supply schemes in

the county are pumping systems and the cost of power is quite high.

The problems of irregular water supply due to poor maintenance, lack of funds, broken facilities and rapid population growth among other factors, have now reached a critical state. There is today a sense that the nation's water resources management organizations and projects are not adequately addressing contemporary water problems.

An empirical study conducted by (Okelo et. al., 2013) observed that there existed a positive relationship between budget deficits and economic growth. This study, however, did not clearly address the aspect of budget planning given that budget deficit is only a part of the budget management. Moreover, the study did not focus on water companies. A later study by (Kamolo, 2014) emphasized the need for county governments to collect much revenue by way of taxes in order to address the increasing financial expenditures budgeted by the county government. This study did not address budget management in relation to successful implementation of water construction projects hence the need to carry out this study.

The purpose of this study was to determine the influence of budget planning on implementation of water projects in the County of Bomet, Kenya. It was hypothesized that budget planning has no significant influence on implementation of water projects in the County of Bomet.

Budget planning provides the monetary resources required to meet the project construction finances as represented by disbursement of projects funds and adequacy of project budget. When the funds allowed for the project are short the contract time is extended, or scope decreased, or both. It is then imperative that investment and budget plans based on feasibility studies are made to enable adequate funding. (Dvarpiya & Ganesan 2012) viewed that poor financing arrangements, inadequate construction funding and budgets, bad cash flow that may be occasioned by contractor's and unexplained cost benefit analysis, and inaccessibility to formal structured finance have a heavy bearing on the project smooth running leading to delayed completion of a project. (Thomas, et., al. 2002) also identified financing as a major success criterion of construction projects.

This study adopted cash management theory. This model was developed by Morton Miller and Daniel Orr in 2009 in trying to create a more reasonable way to deal with finance management. The model figures out how to accomplish a sensible level of authenticity while not being excessively detailed. It conjectures that the aggregate cash flows are constantly distributed with very low levels of the mean and standard deviation (Fwamba, 2017). These cut-off points are: A furthest breaking point, is the base value of money to be held (thought to be zero), and return point, which is the target amount of money considered optimal. Ghadome T. (2013) indicate that the ampleness of finance and current resources together with their successful taking care of for all intents and purposes decides the survival or death of a concern.

An endeavor ought to keep up satisfactory liquidity for its smooth working. In the event that materials are heedlessly bought, it will bring about dormant moderate moving and outright stock. In any case, deficient value of stock will result to stock outs and interference in operations (Ghadome T, 2013). Finances should likewise be effectively managed. It might likewise result to expanded cost because of misusing, waste and theft. Insufficient level of finance balance for instance can prompt stoppage in business operations. An organization might be beneficial however with no liquid finance which can result to operations intrusions. The organization can likewise be constrained into ending up by its creditors.

Cash management theory has been adapted to this study in that it helps the investors to meet their financial obligations through planning and resource allocation so as to derive maximum utility for the projects. This theory relates to budgetary allocation on planning and implementation of water

construction projects on this study. The theory is important when addressing the budget factors influencing planning on implementation of water construction projects. Organizations delivering projects are faced with financial constraints either due to late payment, poor financial budgeting and delay in releasing project funds. This theory guides in the understanding of project funding on the extent to which budget plans influence implementation of water construction projects.

Estimating time and costs for each work package facilitate the development of project network and time phased budget which will be needed to control schedule and cost as the project implemented (Larson & Gray, 2003). The cost control system should be established and costs allocated to the appropriate project codes. The concept of cost control will ensure that costs are incurred in the genuine pursuit of project objectives. All the payments to the contractor should be authorized.

At present capital investment in water is almost entirely financed from public funds. WSBs access funds to execute infrastructure investment projects from the treasury in form of loans and grants (Ndungu, 2014). Though the public sector is charged with the responsibility of providing public services, the numerous competing demands from the different sectors of the economy make it difficult for available fiscal resources to match investments required in water services infrastructure (Wasreb Urban Water Financing Report, 2011). Further, the constitution recognizes the human right to water and sanitation which impacts the development, organization and management of water services provision in the country. This has made partnership with the private sector critical in plugging the finance gap for infrastructure development. (Ndungu, 2014), asserts that the Kenya Water sector should then continue making efforts to attract financial support from development partners and develop its commercial financing potential. This can only be achieved on the basis of sound management practices and adequate financial planning.

Budget planning is very important as far as operation and maintenance of donor projects is concerned. The aspect of budget planning also entails setting of water tariffs. Continuing transparency on income and expenditure, book keeping and accounting are essential aspects in sustainability of projects (Bolt & Fonseca, 2001). These particular aspects of budget planning have led to most donor projects to collapse due to underhand techniques used by water committees. Many community water projects struggle with issues of tariff setting, accounting, revenue collection, billing, record keeping and transparency. Financial sustainability is often an elusive goal for many projects.

According to (Mwendera & Atyois, 2018) on a review of water storage for Socio-Economic Development in South Africa, the results showed that, though the country has invested a lot in water infrastructure there is still room for the increase and improved infrastructure. Owing to the fact that major rivers are trans-boundary, the government ought to develop additional storage bearing in mind the ecological requirements and international obligations.

The determinants of willingness to pay for improved management of water projects among households in Baringo County, Kenya revealed that households were, on average, willing to pay Kshs. 233.30 ($2.75) and a median of Kshs. 200 ($2.35) for improved management of water projects, (Rotich, et. al., 2018). Further findings revealed the mean and median policy value of improving management of water projects were estimated at Kshs. 129.6M ($1.30) and Kshs 111.1M ($1.11). The study concludes that there were significant characteristics for improved management of water projects, which is important for implementation of water management plans.

METHODOLOGY

A research design is an arrangement of conditions or collections (Muaz, 2013). The study adopted a descriptive survey design using both qualitative and

quantitative approaches (Mugenda & Mugenda, 2003). Target population is the entire group of individuals and objects having similar observable characteristics (Kothari, 2004; Mugenda & Mugenda, 2003). The target population of this study comprised of 440 from each category involved in water projects in the county of Bomet. This included project managers, finance managers, project team leaders, project consultants and county administrators. In total there were 88 projects and each represents the target category of respondent, which sum the total target population to 440 respondents.

According to (Kothari, 2014), sampling frame is a list of members of the research population from which a random sample may be drawn. The sampling frame for this study was drawn from both on going, completed and stalled water projects managed and funded by county government of Bomet, water supply schemes and community-based projects.

On sampling technique, the study adopted both stratified sampling and purposive technique since the population was homogenous. In the determination of the sample size, the Slovian's formula was used to calculate the sample size (at 95% confidence level and $\alpha = 0.05$). The sample size **n** = 164. According to (Saris, 2017) a questionnaire is self-report data collection research tool that each research participant fills out as part of research study. The researcher used this method because questionnaires were free from bias of the interviewee and at the same time the respondent had enough time to adequately give well thought out answers.

RESULTS

In this study, out of a total of 164 questionnaires that were distributed to the sampled respondents, 134 of them were filled and returned. Of the returned questionnaires, 3 were incorrectly filled and therefore were not used in the final analysis. Therefore, 131 that were correctly filled were the once used for the analysis, which made up a response rate of 80 % this is in line with Mugenda and Mugenda (2013) who opined that response rate that is above 50% is sufficient and necessary for analysis.

Distribution of respondent by Knowledge of Construction of Projects

The study sought to establish knowledge of constructions of projects among the respondents in the study. The distribution of the respondents according to their knowledge of constructions of projects are shown in table 1. The findings indicate that majority of the respondents had knowledge of constructions of projects representing a 90.9 % while a mere 9.1% were unaware about the knowledge of constructions of projects. This meant that the sample used by the study was well distributed in terms of knowledge of constructions of projects.

Table 1: Knowledge of Construction of Projects

	Frequency	Percent
Yes	119	90.9
No	12	9.1
Total	**131**	**100**

Distribution of respondent by Causes of poor implementation of water projects

The study sought to establish the causes of poor implementation of water projects of respondents in the Study. Table 2 shows the distribution of the respondents according to their knowledge of constructions of projects. The findings in Table 2 indicate that lack of resources at 38.4 % were the main causes of poor implementation of water projects in Bomet with lack of community participation being the least reason for poor implementation of water projects at 12.2 %.

Table 2: Causes of poor implementation of water projects

	Frequency	Percent
Poor Management	31	23.8
Poor Planning	34	25.6
Lack of Resources	50	38.4
Lack of Community Participation	16	12.2
Total	**131**	**100**

Descriptive Statistics of Study Variables

The main purpose of the study was to investigate the influence of budget planning on implementation of water projects in Bomet County, Kenya. The study sought to establish whether budget allocations are agreed upon by all stakeholders. Table 3 shows that 22.3% of the respondents strongly disagreed, 39.7% of the respondents disagreed, 19% of the respondents were neutral, 15.2% of the respondents agreed while the remaining 3.8% of the respondents strongly agreed. This shows that majority of the respondents (39.7%) disagreed that budget allocations are agreed upon by all stakeholders. A further 22.3% of the respondents strongly disagreed that budget allocations are agreed upon by all stakeholders. The results are a clear indication that budget allocations are not agreed upon by all stakeholders.

The study further sought to establish if the project did not experienced budget variances in the last one year. The above table shows that 5.4 % of the respondents strongly disagreed that there exists piece rate as a mode of reward. A further 9.8% disagreed that the project did not experienced budget variances in the last one year, 15.8% of the respondents were neutral, 56% of the respondents agreed that the project did not experienced budget variances in the last one year while 13% of the respondents strongly agreed that the project did not experienced budget variances in the last one year. The results clearly indicate that the project did not experienced budget variances in the last one year since this is the position taken by majority of the respondents (56%). A further 13% also strongly agreed, thus making a total of 68% who generally agreed that the project did not experienced budget variances in the last one year.

On whether the budget is subject to amendments during its implementation, the study found out that 3.3% of the respondents strongly disagreed that the budget is subject to amendments during its implementation. A further 10.3% of the respondents disagreed that the budget is subject to amendments during its implementation, 28.8% of the respondents were neutral, and 45.7% of the respondents agreed that the budget is subject to amendments during its implementation while 12% of the respondents strongly agreed that the budget is subject to amendments during its implementation. Overall, a total of 57.7% of the respondents generally agreed that the budget is subject to amendments during its implementation. The results, therefore, clearly indicate that the budget is subject to amendments during its implementation.

On whether the periodic budgetary performance relies on projects operations, the study found that 11.4% of the respondents strongly disagreed that the periodic budgetary performance relies on projects operations. A further 21.2% of the respondents disagreed that the periodic Budgetary performance relies on projects operations, 16.8% of the respondents were neutral, 42.4% of the respondents agreed that the periodic Budgetary performance relies on projects operations while 8.2% of the respondents strongly agreed that the periodic budgetary performance relies on projects operations.

The study further sought to establish whether the budgetary performances of county projects have been on an upward path. The study established that 35.9% of the respondents strongly disagreed that

the budgetary performances of county projects have been on an upward path. A further 39.7% of the respondents disagreed that the budgetary performances of county projects have been on an upward path, 11.4% of the respondents were neutral, 10.3% of the respondents agreed that the budgetary performances of county projects have been on an upward path while 2.7% of the respondents strongly agreed that the budgetary performances of county projects have been on an upward path. The results are clear indication that the budgetary performances of county projects have not been on an upward path with a total of 75.6% of the respondents generally disagreed that the budgetary performances of county projects have been on an upward path. This finding corresponds to the findings of Munene (2017), who agreed that sufficient allocation of financial resources facilitates decrease in the number of reported cases of water borne diseases.

Table 3: Respondents opinion on Budget Planning

Statement	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Total (%)
The budget allocations are agreed upon by all stakeholders	22.3	39.7	19	15.2	3.8	100
Our project did not experienced budget variances in the last one year.	5.4	9.8	15.8	56	13	100
The budget is subject to amendments during its implementation.	3.3	10.3	28.8	45.7	12	100
The periodic Budgetary performance relies on projects operations.	11.4	21.2	16.8	42.4	8.2	100
The budgetary performances of county projects have been on an upward path	35.9	39.7	11.4	10.3	2.7	100
There is an effective system for budget control	7.6	21.7	38.6	29.3	2.7	100
Average	**11.8**	**21.5**	**27.7**	**32.1**	**6.9**	**100**

Regression Analysis for Budget planning and Implementation of water projects

The study sought to describe the relationship between Budget planning on Implementation of water projects in Bomet County, Kenya. The objective was tested using hypotheses that; There is no significant relationship between Budget planning and implementation of water construction projects in Bomet County, Kenya. Analysis using Pearson's product moment correlation statistic to test the relationship between the Budget planning and implementation of water construction projects in Bomet County, Kenya indicated that R -square value of 0.278 was recorded showing that (27.8%) of implementation of water projects in Bomet County, Kenya was explained by budget planning. The inclusion of moderator (technology integration), the coefficient of determination increased to 0.289 showing that 28.9% of the response variable was explained by budget planning as indicated in Table 4.

The other section of the fitted simple linear regression models to the data suggest that the models were good and this was supported with p-values 0.000 which were less than 0.05 and F-statistics values 49.64 and 26.044 respectively for both models in the absence of moderator and presence of moderator. Statistically this meant that there was a significant relationship between budget

planning and implementation of water construction projects in Bomet County, Kenya and this relationship was much better in the presence of moderator**.**

The models fitted to the data if the moderator is excluded and when the moderator is included were as follows: $Y=2.757+ 0.338X_2$ and $Y= 2.581+0.3382X_2+ 0.054X_2 *Z$ with corresponding p-values of 0.000 being lower than 0.05 significance level against t-statistics values. The models indicated that for every unit of budget planning the value of Implementation of water construction projects in Bomet County, Kenya changes by 0.338 in absence of moderator and 0.3382 in the presence of moderator.

Table 4: Regression Analysis for Budget Planning and Implementation of water projects with no moderator

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.527[a]	.278	.272	.26227	1.925

a. Predictors: (Constant), Budget planning

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
	Reg	3.415	1	3.415	49.640	.000[b]
1	Residual.	8.874	129	.069		
	Total	12.288	130			

a. Dependent Variable: Implementation of water constructions projects

a. Predictors: (constant), Budget planning

Overall regression coefficients

	Un Std Coeff		Std Coeff	t	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	2.757	.174		15.836	.000		
Budget Planning	.338	.048	.527	7.046	.000	1.000	1.000

Table 5: Regression Analysis for Budget Planning and Implementation of water constructions projects with moderator

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.538[a]	.289	.278	.26122	1.904

a. Predictors: (Constant), Budget planning *Z

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
	Reg	3.554	2	1.777	26.044	.000[b]
1	Residual.	8.734	128	.068		
	Total	12.288	130			

a. Dependent Variable: Implementation of water constructions projects

b. Predictors: (constant), Budget planning.

Overall regression coefficients

	Un Std Coeff		Std Coeff	t	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	2.581	.212		12.152	.000		
Budget planning	.338	.048	.528	7.085	.000	1.000	1.000
Budget planning *Z	.054	.038	.107	1.430	.155	1.000	1.000

The study focused on establishing the influence of budget plans on implementation of water construction projects. The coefficient of budget plans was also significant in this study. It can thus be inferred that budget plans have significant effect on implementation of water construction projects in Bomet County, Kenya. The study found out that conducting budget plans on water projects, allocation of sufficient funds to water project activities and establishing the variance that may exist results clearly indicate that the project did not experienced budget variances in the last one year. Further to this the budgetary performance relying on project operations and effectiveness of this budget monitoring and control, majority of the respondents disagreed to this statement.

The findings of this study revealed that budget planning affect implementation of water construction projects in Bomet County. Owing to this, the county government of Bomet is able to increase water supply and increase revenue collection. This in turn improves accessibility to quality water among the residence of Bomet County, Kenya. These findings indicated that budget planning was significant factor of implementation of water projects, in that it helped decision makers within the county to increase budget allocation towards improvement of water projects.

CONCLUSIONS AND RECOMMENDATIONS

Based on the study findings, it is therefore concluded that, budget planning in Bomet County should be taken into account while planning construction of water projects and while seeking ways to improve accessibility to water resources. Therefore, budgeting sufficient funds for water projects is important as far as sustainability, operation and maintenance of water projects is concerned.

Based on conclusions on budget planning, the study recommends that future studies can be carried on financial planning. Based on conclusions on budget planning, the study recommends that budget planning be incorporated in the initial planning of the project. The study further recommends that since budget planning is one of the most important plans in a project hence county government needs to develop a system to guide this process.

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