

ASSESSMENT OF OPERATING COST MANAGEMENT ON FORCE ACCOUNT WATER SUPPLY PROJECTS PERFORMANCE IN ARUSHA REGION.

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Abstract: *The study was carried out to assess operating cost management on force account water supply projects performance in Arusha Region. Of late there has been an increase in the use of force account even for high value contracts in water supply projects, and the reason given include the cost savings achieved by many Procuring Entity's using this approach. The extensive literature review conducted, mainly on previous research that explored the elements of force account water construction projects. A mixed survey study design was used during the data analysis process however, the study managed to collect and analyses 207 questionnaires out of 216 sample selected from 470 total population and 14 interview guides from key informants collected. The study found that there was a relatively significant influence of operating cost on force account water supply projects performance, positive correlation between operating cost and water supply project performance and water supply projects performance was explained by 56.1% by operating cost with significant contribution on water supply projects performance i.e. P-value of 0.000 Also, the regression result shows that there is the positive relationship between operating cost (OC), and water supply project performance means an increase of OPC lead to positive change in water supply projects performance. The study concludes that operating cost has influenced water supply project performance. The study provides several recommendations including; in order to improve the project implementation and proper use of public funds and managing operating cost the need for best net outcome and efficiency in the use of public funds during the implementation of force account projects should be enhanced and monitored.*

Keywords: Force Account, Operating Cost, Water supply project Performance

1. Introduction

Water is an essential resource that has economic value in all its rival uses and should be accepted as an economic good. It is well known that access to a water supply is very important for improved quality of life and wellbeing, especially when linked with other social services, as well as economic growth (Ihuah and Kakulu, 2014).

According to URT (2019) in Tanzania the provision of water supply service is managed by the Ministry of water through its autonomous institutions, Rural Water Supply and Sanitation Agency (RUWASA) and Water Supply and Sanitation Authorities (WSSAs) which is regulated by Energy and Water Utilities Regulatory Authority (EWURA). Provision of water supply and sanitation services in urban area is done by WSSAs while in rural areas is done by Community Based Water Supply Organizations, (CBWSO) which are regulated by the Ministry of Water (MoW) through RUWASA.

In implementing water supply projects various procurement methods of executing work were adopted to improve the performance of the executed projects. The government of Tanzania has been insisting on use of Force Accounts (FA) in the construction of projects. The adoption of the force account model as a mechanism of executing public works is not a new thing. In the business management literature, the model is very akin to the outsourcing-to-insourcing decision (Schniederjans & Zuckweiler, 2004). In the public sector, the model has been widely used in many developing countries, especially on the Asian and African subcontinents where the private contractors in those countries are still undeveloped (Engelbert, Kaltenborn, & ReitBorn, 2016; Ohashi, 2009; Rwelamila, Talukhaba, & Ngowi, 2000).

According to R.S Tekka, (2017) force account method involves the use of the labor, equipment and machinery for the government or public or semi-public to undertake the tasks intended. It should be realized that, Force Account is not a method of procurement but a method of executing works. According to the Tanzania Public Procurement Regulations (PPR) 2013 under this method, the procuring entity (PE) is required to purchase all the materials required for the project from the recognized suppliers and use local technical labour for implementation of the required activities both obtained through quotations. Since the Financial year 2016/17, Tanzanian Government has put more emphasis on the use of Force Account procurement method in the construction and rehabilitation of public infrastructures such as schools, hospitals, colleges, public offices and implementation of water supply projects.

Despite significant investment in the Water Supply services since the early 1970's, water supply coverage was not satisfactory up to the year 1990's (NAWAP0 2002). It only about 48% of the rural population has access to a reliable water supply service due to poor operational and maintenance arrangements and the coverage for urban areas is 70%, but most urban water supplies are inadequately treated due to malfunctioning treatment plants. The failure to increase access to clean and safe water is striking when compared to the significant increases in spending in the water sector (Twaweza, 2014)

Recently the Government of Tanzania (GoT) through the Ministry of Water adopted Force Account Approach (FAA) on implementing the construction on water supply projects to improve water supply services in rural area and urban. About 663 water supply and sanitation projects both in Rural and urban areas in Tanzania implemented under the Force Account Approach and all of these projects Cost total amount of Billions 341.3 TZS (Maji App 2022). In improving water supply services, the target is to reach 85% water supply coverage in rural and 95% in urban areas by 2025.

This translates to coverage increase of 70% by end of 2019 from 48% in 2015 in rural areas and a coverage in urban centers from 70% (June 2015) to 85% in December 2019 (Water Sector Status Report, 2020). Also, the method is commonly used in execution of construction projects in the health and education sector. In 2016 and 2017, the Government of Tanzania provided Tsh 400 million and Tsh1.5 billion for construction of 1 health centre and 1 district hospital for 100 health centres and 67 district hospitals respectively and these projects were executed by using force account/direct labour procurement method (DCOM Manual, 2020).

Under the fifth and sixth GoT regime the implementation of FA projects found to be benefit on several aspects such as employment provision, cost minimization, time saving and social economic growth. According to Mwaitete (2022) said that the only way to develop African nations it's through force account approach since it easy and affordable in terms of cost minimization and value for money. this result for political leaders to place more emphasize and support to proceed with FA mechanism especially in construction of schools, health centers and administrative offices (PPRA, 2019).

Therefore, the current research was conducted on the assessment of operating cost management on water supply projects performance in Arusha Region by doing so the study was enabling policy makers to decide on applicability of force account approach during the implementation water supply projects.

1.1 Research Objectives

To openly reveal what is behind the scene three objectives were formulated which were:-

- I To examine force account project planned budget on operating cost management.
- II To determine the effective control mechanism for force account payment to ensure force account projects cost saving and;
- III To assess fund availability on timely completion of force account projects.

1.2 Research Questions

The following research questions was formulated:-

- I Does the force account projects planned budget has the impact on influencing projects operating cost management.
- II Are the effective control mechanism for force account payment procedures ensure force account projects cost saving and
- III What are the influence of fund availability on timely completion of force account projects.

2. Literature Review

2.1 Theoretical Literature Review

2.2.1 Theory of Project Management

According to the Project Management Institute (2000; 2013), describe elements of control known as the Project Management Body of Knowledge Areas (PMBOK). This theory shows factors for successful project management. They explore the guidelines for managing projects and define project management related concept, also describe the project management life cycle and its related processes. This is accepted as general theory and can be used in many projects of different fields. The Project Management theory covers crucial issues in project management and divides those issues into ten knowledge areas. According to Susilo et al., (2007) elaborated further that these knowledge areas are derived from best practice in project study cases and can be considered as the most important elements in project management. Morris (2001) argued that although each knowledge area consists of number of processes some differences in detail of the project management knowledge area across various project types varies e.g., success criteria, requirement management, information management, and performance management. Components of this theory are Planning and Scheduling, Contracts management and financial flow when these combined lead to Project Management. The theory can be used to explain mainly factors (operating cost management) on influencing force account water supply projects the performance in Arusha Region.

2.2.2 People Centered development theory

The people centered development theory state that development can only thrive when there is investment in people and institutions and where governments are responsive and accountable to their citizens (UNDP 2011). The Manila Declaration (1989) stated that people-centered development is the only way to achieve sustainable communities. Expanding beyond the environmental scope of sustainability, it advocates small scale community actions in order to enhance economic self-reliance and create reliable sources of income. Thus, people must be at the center of human development, both as beneficiaries and as drivers, as individuals and in groups. People must be empowered with the tools and knowledge to build their own communities, states and nations (Roodt, 2001)

Korten (1990) cited in Davids, Theron, Maphunye, & Kealeboga (2009:17) indicated that people-centered development is "a process by which the members of the society increase their personal and institutional capacities to mobilize and manage resources to produce sustainable and justly distributed improvements in their quality of life consistent with their aspirations". Unlike in past theories of development, humans are placed at the center, contrary to the „trickle-down“ approach in other development initiatives. Since, under force account procurement method preference shall be given to involves the use of local fundi, locally made materials or local manufacturers or suppliers as the important element in the implementation of the community project, the involvement of these community members facilitates proper functioning and capacity building to local personnel while delivery the project at high motivation spirit and efficiency. This theory is of most important to the study to provide theoretical support of the use of community-based procurement procedure.

From the above empirical literature, it is evident that several pieces of research similar to this study have been conducted in different sectors and different places across the globe with different findings, providing various recommendations on the effectiveness of water construction projects. Most of the studies conducted in force account approach projects are mainly based to construction, renovation and remodeling on Health Center construction and on the Education sector (Construction of Schools, Colleges and universities) and for those studies for water projects mainly referred at the causes and the effects of construction of water supply projects and not the applicability of force account approach. This study discussed the applicability of force account approach on water supply project's performance in Tanzania and was conducted in Arusha region.

2.2 Empirical Literature Review

Empirical studies related with force account projects especial in water supply projects were revealed to be very few in the procurement literature more specifically in Tanzania context.

2.2.1 Force Account Projects at a Global level

Mendez (2017) conducted the study on Construction of Federally Funded (Federal Aid) Local Agency Projects by Non-Competitive Bid Contract (Force Account) in Michigan USA. This study emphasized on the authorization to the local municipal agency, generally described as a county, city, or village, to complete the project by furnishing the labor, equipment, and materials under its direct control. Work to be completed by force account may be either a stand-alone project, or may be a portion of a larger, competitively bid project. The study proposed that as part of the tasks to be completed before authorization, the local agency must provide documentation demonstrating the cost effectiveness of completing the project by force account, and justify that the public interest is best served by constructing the project by force account, rather than by competitive bidding.

The study found that for the force account work to be authorized, the cost estimates must demonstrate that the local agency can complete the work at a savings of at least six percent when compared to the estimated cost prepared by the local agency to competitively bid the work. Therefore, for projects that are not classified as Minor Utility Work, the maximum authorized amount of the force account authorization less than \$94,000. Subcontracting of authorized force account work is allowed for up to ten percent of the amount of the force account authorization. Costs associated with the subcontracted work are eligible for reimbursement of federal or state funds.

2.2.2 Force Account Projects in Africa

In Africa the adoption of the FAA as a mechanism of executing public works is not a new thing. Application of force account has been in operation in majority of African countries, this is due to under development of private sector especially in Construction industry (Engelbert et al. 2016). Mbabazi and Mugurusi (2016) carried a study on Adoption of Force Account Approach in Road Maintenance Works' Procurements: Stakeholders' Opinions in Uganda. The study provided an overview of policy shift from contracting the road maintenance works in Local Governments (LGs) to implementing FAA made by the Government of Uganda in June 2012, following the acquisition of a fleet of 1,425 pieces of new equipment distributed to LGs. From this study, Authors conclude that while it may be logical that governments can save money when procuring organizations use their equipment and personnel rather than an estimate which is calculated to include the overheads and profits of an external provider, stakeholders if not sensitized, tend to view a new policy (in this case, FAA) as "another-one-of-those-policies". To ensure value for money, Government agencies need to review the existing policies and guidelines governing the implementation of FAA. The existing guidance from the competent organizations has not been fully operationalized, hence the inherent challenges in road maintenance works for those that implement it. The findings suggested that those at the periphery like the local governments suffered most.

2.2.3 Force Account Projects in Tanzania.

Few studies conducted in construction project are as below; According to Zubeda (2020) who conducted study on Determinants for Effective Implementation of Force Account in Construction Projects in Tanzania, More specifically study focused on assessing effect of human resources on force account projects, it also assessed influence of financial resources on effective implementation of force account projects, the impact of regulatory frame work on force account projects and impact of supply chain management on effective implementation of force account project was also assessed. The study revealed that human resources have positive impact on facilitating effective implementation of force account projects as execution of force account project depends more on the use of internal resources especially on contractor capabilities as a guideline for local builders. Furthermore, financial resources were also revealed as an important factor for the success of force account project since force account project makes more use of organization fund to enable progress of activities during construction process. Study also found out that proper regulatory framework has an influence on the effectiveness of force account as it was found to have contribution on conflict reduction among project committees and faster and consensus decision making.

Finally, the study revealed out that proper management of supply chain operation such as order management, information and transportation management influence facilitating effectiveness of force account project by enabling on time availability of material to work site and creation of mutual awareness among project stakeholder through efficient information management.

According to the research study that was done by Tekka (2019), on the Performance Determinants of Force Account method of Contracting, The Case of Public Infrastructure Rehabilitation and Remodeling. From data collected and analysis, His findings disclosed that four determinants variable have been proved to have a positive significantly correlation with FAA performance as explained hereunder; Training; was identified as one of the crucial determinants of performance as it entails imparting knowledge and skills to employee training prepared by the client before project commencement has always to a great extent facilitated the smooth running of the project done by FAA method. All participants have been equipped with knowledge related to setting and implementing the objects in attaining the intended goals, strategic planning and management, team work building, monitoring work progress, project planning and management, supply chain integration and management, contract management as well as human and resources management etc. Therefore, knowledge has facilitated completion of the project timely with value for money.

Supply chain Management; It involves all features of distributing the product and services to the intended customer. In FAA, supply chain management has been identified as among the effective determinants that comprise many undertakings of which when joined can result to better firm performance. SCM in FAA involves sourcing of materials under quotation comparing method that facilitated cheap price, supplying them timely to avoid lead time, proper storage, issuing and or allocation to avoid waste and inventory to avoid over-ordering and enable better flow of materials which facilitate the smooth run of the project. Project committee; is among the crucial determinant of FAA performance formed from group of project participants or stakeholders involving consultant (supervisor), client (financier), labors who acts as contractors and project beneficiary. Different stakeholders involved in construction projects have been noted with their importance and established relationship between them. Thus, some of stakeholders can be more important in a given project at a given particular time than others with their corresponding difference influence at different level. However, In FAA all stakeholders are needed during the entire lifecycle of the particular projects.

Government support; as a financier of the project has a significant determinant contribution to FAA performance. The government as a source of FAA facilitates availability of projects for any intended purposes. However, if no government, nothing can be implemented. noted that, government has a major role in Construction Industry as it enables a continuous flow of work, facilitate access to finance, enable skills formation and access to training and assisting in strategy and policy formation. Tanzanian government as a main financier has played significantly in attaining the performance of FAA through provision of fund, provision of working guide like Public Procurement Act (PPA), facilitation of training to projects participants, conflict resolution etc. This has proved its importance in determining the performance of FAA (Tekka 2019).

3. Research Methodology

In this study the researcher used both quantitative and qualitative approach (mixed approach) through open-ended and closed questionnaires and interview to complement each other, moreover the descriptive-correlation research design was in demped. The study was carried out in Arusha Region, Arusha is one of Tanzania 31 administrative regions and is located in the north of the country. The population of this study comprised Arusha Urban Water Supply and Sanitation Authority (AUWSA) and Rural Water Supply and Sanitation Agency (RUWASA) employees and suppliers that was selected from various categories. The target group comprised Project Managers, Auditors and Procurement officers, Surveyors, Architects, Suppliers, Quantity Surveyors, accountants and Project Implementation Team (Force Accounts Personnel's). Also, a simple random sampling method used in this research to guarantee fair representation and widespread results for the general population. The sample size of this study is determined through the following formula adopted from Kothari (2004);

$$n = \frac{N}{1 + N \cdot e^2}$$

$$n = \frac{470}{1 + 470 \cdot 0.05^2} = 216$$

Where n = number of samples, N = total population= 470; e = standard error of sampling (5%) is tolerated. By entering each value of the variable into the formula (1) above, obtained a large sample size of 216 respondents.

Table 3. 1: Targeted sample size.

S/No	CATEGORY OF RESPONDENTS (RUWASA +AUWSA)	EXPECTED POPULATION	SAMPLE SIZE
1	Project Managers	18	15
2	Auditors and Procurement officers	12	12
3	Surveyors	14	14
4	Architects	14	14
5	Suppliers	14	14
6	Quantity Surveyors	8	5
7	Project Implementation Team (Force Accounts Personnel's)	375	129
8	Accountants	15	13
Total		470	216

Primary data collected using a interview and structured questionnaire which was provided to the chosen sample participants from Arusha Region on selected areas which are staffs and other force account projects stakeholders. Data from the questionnaires and interview was quantitatively and qualitatively analysed by using descriptive (SPSS Version 26 used during analysis) and inferential statistics for quantitative and researcher also used Thematic analysis to analyse qualitative information obtained through an interview and open-ended questionnaires. The collected and edited data were analyzed descriptively by employing mean (X) and regression analysis both correlation and model interpretation conducted. Moreover the simple frequency distribution tables and graphs were used for presentations of the facts

4. Findings Presentation

This part explains briefly the views from the respondents, Views are presented in sub-sections and Tables & figures were used to present the major findings of the study.

4.1 Response Rate

A total of 207 questionnaires were filled and return for analysis out of 216 questionnaires that were distributed to all surveyed organizations. This made the study to have a satisfactory response rate of 95.8%.

4.2 Gender, Age, Educational and Experience of Respondents

Results indicated that from all 207 sample only 125 respondents equal to 60% male respondents were involved and 82 female respondents equal to 40% were involved to provide their perception on the question presented to them, this implies that the male respondents in surveyed organization were made dominated activities. the majority of the respondents ranged in 19 to 30 years with a 40.1% rate. 20.3% aged between 31 to 40 years, 19.8% ranged between 41 to 50 years, 19.8% were above 50 years as analyzed in the respective figure above. As such, the analysis show that the implementation of force account water supply projects duties are performed by the youth, particularly ranging from 19 to 40 years. The researcher revealed that 40% of employees have been working between 2-4 years, 20% have been working for 5 to 10 years and 19.8% less than 2 years and only 19.2% have been working for more than 10 years. This implies that most of the respondent's working experience is between 2-4 years in FA. From the representation, most of the respondent had diploma education as the highest education level attained with 39.6%. This was followed up by 20.3% for both Bachelor degree and Masters education level, and 19.8% with primary level. This shows that most of the respondents are educated with above diploma education level.

4.3 Descriptive of Analysis of Operating Cost

Descriptive findings of the operating cost management on force account water supply project performance in Arusha Region. revealed that 80% of respondents asserted that force account projects implemented in arusha region are implemented according to the planned budget. either, 0% of the respondents were neutral and only 20% of the respondents asserted that force account projects in Arusha Region does not implemented according to the planned budget. This implies that the force account water supply projects implemented in Arusha Region implemented according to the planned budget. Also, findings show that 59.9% of the respondents were disagree with the statement said that available fund for project implementation is it sufficient to accomplish the planned task on time, 20.3% of the respondents were neutral while it only 19.8% of the respondents agree the said statement. This implies that the available fund for FA water supply project in Arusha is not sufficient to accomplish the planned task on time. One of the respondents had this to say

"Most of the force account water supply projects implemented within the planned budget, sometimes the amount of budget used in implementation of project is lower than the planned budget. For example, the planned budget for the implementation of one project in Karatu District was TZS 865 million but after completion of the project the actual cost realized for the said project was TZS 602 million (Interview transcript 4). The Government of Tanzania was saved more that TZS TZS 200 million but the main challenges were timely completion of project. The said project spends more than 8 months after completion date elapsed."

The study found that with a mean of 4.39, the majority of the respondents 79.7% indicated that during project execution effective control mechanism for force account project payment to ensure cost saving is conducted and its only 0.5% of the respondents who disagree against the said statement. while with a mean of 2.42 a total of 59.4% of the respondents disagreed that payment rate used for casual labour and local fundi for force account project implementation is it according to the standard. This implies that there is a need to raise amount of payment rate used for casual labour and local fundi to be as per market price rate used. This was opined by one of respondents who said:

"The amount we are paid TZS 1,500 per meter during the trench excavation for force account projects is not the same as the TZS 2,500/3,000 per meter we are paid when we are doing trench excavation for the same meter during normal works executed by AUWSA. We agreed the rate because we have no option since there is no option for job to do so (interview transcript 1)"

4.4 Inferential Analysis of Operating Cost

In this section researcher was focused on showing the relationship between independent and dependent variables used in this study, correlation and regression analysis are involved as the main statistical tool for relationship assessment.

4.4.1 Correlation Analysis

The correlation coefficient (r) was used to indicate the level of association between variables and N showing the total number of all respondents. The results of the correlation analysis were presented in table 4.1 below followed with its interpretation.

Table 4. 1: Operating Cost and Water supply project performance correlation

Correlations			
		Operating Cost	Water Supply project Performance
Operating Cost	Pearson Correlation	1	.755**
	Sig. (2-tailed)		.000
	N	207	207
Water Supply project Performance	Pearson Correlation	.755**	1
	Sig. (2-tailed)	.000	
	N	207	207

****.** Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2022)

Study findings sought to investigate the relationship between the operating cost and force account water supply project performance. The findings unveiled that there is a significant relationship between operating cost and water supply project performance ($r = .755$, $N=207$), whereby r is the correlation ratio and N is the total number of all respondents to this study. This is evident in the presentation table above; The result provided that there was positive correlation between operating cost and water supply project performance; Findings indicated that there was strong positive correlation between operating cost and water supply project performance with correlation value (r) of 0.755 at significance level of .000

4.4.2 Regression Analysis

In this study one independent variable which is the operating cost, used in a simple linear regression model to predict the performance of water projects. The corresponding regression model was as below; $Y = \alpha + \beta_1 X_1 + \epsilon$

Where;

Y – Dependent variable (Water Supply Projects Performance). α - Regression coefficient / constant

β_1 , are the slope of the regression equation

X_1 - Operating Cost

ϵ - Error term at 95% coefficient level.

Three assumptions were considered during regression analysis:

- I The first assumption was coefficient of determination in the modal summary should explain the independent variables above 50%.
- II The second assumption was at 5% level of significance and 95% confidence level, the significant value (P-value) in the ANOVA and coefficient regression should be $P < 0.000-0.05$.
- III Either the third assumption was at 5% level of significance and 95% confidence level, the value of predictions or independent variables should be $P \leq 0.000 - 0.05$.

The result of the regression model is presented in the three different table below namely as Model summary, ANOVA table and regression coefficient table as shown below.

Decision Cretiaria;

The researcher runned model where $Y = \alpha + \beta_1 X_1 + \epsilon$

Indicated that if the project operating cost minimized X_1 water supply projects performance was realized and if the project cost maximized water supply projects performance in Arusha Region was not realized.

To determine if the data that collected was reliable and valid, the researcher conducted a validity and reliability test. Cronbach's alpha and Kaiser-Meyer-Olkin (KMO) and Bartlett's Sphericity used as a scale to measure the reliability and validity of data collected respectively. After analyzing data collected on SPSS the result of Cronbach's alpha was 0.775 as it is shown in table 4.3 below and in this case the average score for all variables was found to be 0.85. This implies that the items used to measure what it is supported to measure, which means there was good internal consistency of the measures. On the other hand, after analyzing data collected on SPSS the result of KMO was 0.621 as it is shown in table 4.4 below. From the test, one can safely conclude that the results are reliable and valid, as indicated in Table 4.3, 4.4 below.

Table 4. 2: Reliability statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.775	24

Source: Field Data (2022)

Table 4. 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.621
Bartlett's Test of Sphericity	Approx. Chi-Square	44.313
	Df	181
	Sig.	.000

Source: Field Data (2022)

Table 4. 4: Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. The error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.896 ^a	.675	.566	.8975	.660	71.802	9	21	.000
a. Predictors: (Constant), Operating Cost									

Source: Field Data (2022)

The result from table 4.4, first assumption holds which also means the result of this study is positively correlated since the coefficient of determination in the modal summary demonstrated by R Square of 67.5% which is high percent since it exceeds 50%. R-Square result from the model tells how well the data fit the model, how is the dependent variable (water supply project performance) is explained by the independent variable (which include operating cost). Therefore, water supply projects is influenced by operating cost by 67.5%, this implying that apart from this variables there are other factors in force account

approach that influence or determine water supply project performance, this was explain in the conceptual framework where by moderating variable such as applicability of force account guideline was introduced.

Table 4. 5: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	77.197	11	6.897	13.967	.000 ^b
	Residual	79.641	26	1.957		
	Total	156.838	37			
a. Dependent Variable: Water supply projects performance						
b. Predictors: (Constant), Operating Cost.						

Source: Field Data (2022)

The ANOVA summary table tells whether the model is statistically significantly. This done by using F-value and P-Value: When P-value (Sig. Value) is less than or equal to 5%; it indicates that the regression equation is a better predictor for population values (The model can be generalized in the population). Looking at the table, F-value is 13.967; p-value<0.001. This means that the sample selected was representative of the population. Therefore, this means the result of this study is positively correlated since the level of significance is 5% and 95% confidence level, the significant value (P-value) in the ANOVA and coefficient regression lies between the value of $P=0.000 \leq 0.05$.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.347	5.686		34.543	.000
	Operating Cost	.561	.897	.544	8.654	.001
a. Dependent Variable: Water supply projects performance						

Table 4. 6: Coefficients table

Source: Field Data (2022)

The regression equation ($Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$)

$$Y = 12.347 + 0.561X_1 + \epsilon$$

Whereby Y = Waters Supply Projects Performance

X_1 = Operating Cost

The coefficient table implies that there is a significant relationship between operating cost and Water Supply Projects Performance as it shows value is 0.001, which comply with the third assumption which asserts that at 5% level of significance and 95% confidence level, the value of predictions or independent variables should be $P \leq 0.000 - 0.05$. Also, Results from the coefficient table implies that a unit change in operating cost results to increase of water supply projects performance by 0.561, while taking in to consideration that other things remain unchanged. Hence the proper management of operating cost was associated with water supply project performance.

5. Discussion

This part involves critical discussion of findings discovered in this study. The discussion part was presented on the basis of specific objectives as presented in research variables section.

5.1 Operating Cost Management on water supply projects performance

Based on the finding observed after analysis on examine the operating cost management on water supply projects performance the findings shows that if the projects under force account approach at all surveyed organization implemented according to the planned budget, it evidenced that if project implemented within the planned budget will influence the water supply projects performance. This was according to findings indicated out that 80% of the respondents were on positively supporting side that water supply projects performed well when the force account projects implemented within the planned budget.

Findings explained above confirmed with Aggor (2017), study revealed out that proper planned budget during the planning stage for construction projects is an important element for early completion of the project and project successfully. But also, the study results differ with the study of (Ngacho, 2007) who revealed that most of construction project in African countries are characterized by late completion due lack of sufficient fund and late delivery of planned budget. Study also revealed that most of construction projects in Africa failed to be completed on time due to various reasons including poor planning including underestimation of project execution cost and shortage of fund for project implementation.

Moreover, results from the study revealed out that all surveyed organizations indicated that the available fund for projects implementation is not sufficient to accomplish the planned task on time hence cause force account water supply project fails to performed. This is as per findings from the field results which indicated out that 59.9% of the respondents supported that amount

of fund available during force account water supply project implementation is not sufficient enough to make implementation of projects to perform by completed on time. Results correlate with the result of Aketch and Karanja, (2013) who revealed out that even quality management in construction related activities depends more on availability of fund for frequently site visit and other quality assurance related activities in construction operations. (Wahu et al, 2015) revealed that lack and insufficient availability of fund in most of the local construction projects is among of the factors that results to delays in a given project or project completed out of planned time.

Project execution effective control mechanism for force account project payment to ensure cost saving is conducted this statement was supported by 79.7% of the respondents, this enabling early completion of organization construction projects and water supply project performance was observed. But 59.4% of the respondents revealed that payment rate used for casual labour and local fundi for force account project implementation is not according to the market price. The same results observed by (Patanakul, 2015) who revealed out that early payment of to suppliers of construction material and payment to casual labour and local fundi improve their capability of delivering material and order required material on both agreed time and quantity to work station as the result of well performed construction projects.

Generally, the results of statistical analysis demonstrated that there is a significant relationship between operating cost and water supply project performance supported by correlation ration $r=0.755$. Also result provided that there was a positive correlation between operating cost and water supply project performance with correlation value (r) of 0.755 at significance level of 0.000

6. Conclusion

As backed by the findings of the study, it was observed that operating cost management has the influence on force account water supply projects performance in Arusha Region. Hence operating cost in water supply projects is an important factor for projects performance. In this note, during project implementation under force account approach it is very important to the implementation team to ensure that; Operating cost are proper managed and maintained in order for achieving value for money and to improve the project implementation and proper use of public funds. Also, the need for best net outcome and efficiency in the use of public funds during the implementation of force account projects including disposal of assets should be enhanced and monitored.

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