



IMPACT OF PROJECT INITIATION ON PERFORMANCE OF OUTPUT-BASED FUNDED SABASABA URBAN WATER SUPPLY PROJECT

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Abstract:

Sabasaba urban water supply project was undertaken in order to increase the number of people in low-income areas within Murang'a County with access to improved water supply; to enable them to have clean water at their doorstep. In carrying out the project, World Bank employed Output-Based Aid scheme to make sure the project achieves its goals. Output-Based Aid funds predetermined project outputs unlike the conventional way of funding inputs. It serves to ensure prudent utilization of funds by shifting performance risk to the organization mandated to deliver services; it also does so by linking outputs to the ultimate payments; hence transparency during project implementation. The study sought to examine the influence of project initiation, project planning, project implementation, and project monitoring on the project performance of Output-Based Aid funded Sabasaba urban water supply project. The study adopted value chain and resource-based theories. A predictive correlation design was used. The target population was 56 employees drawn from Murang'a South Water and Sewerage Company which is the implementing agency for Sabasaba water supply project. A structured questionnaire was used to collect data from the respondents. The study results were analysed using SPSS. The study found that the project initiation had a statistically significant influence on the project performance. The findings revealed that a unit change in the project initiation would lead to 0.404 changes in the project performance holding the other independent variables constant.

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1. Introduction

The project lifecycle management influence on project performance has been noted globally. In China, Chen and Hu (2021) noted the importance of the project initiation component of project lifecycle management in relation to the project performance. The project initiation was found critical for the project sustainability, project viability, and setting the stage for the project planning dynamics. In India, Kumar Ghosh and Kumar Sar (2020) noted the importance of the project initiation to the project performance elements. The stakeholders that were involved in the project initiation process and the incorporation of their feedback were critical in the project performance in terms of project sustainability. This was due to the incorporation of the diverse project management stakeholders into the project imitation process and hence project planning aspects.

In Rwanda, various components of the project lifecycle management have been noted to influence project performance of water projects. Mutanguha and Kamuhanda (2021) discussing the water aid project in Rwanda noted the various ways in which the project initiation influenced the project performance. In this context, the importance of the community participation on the project initiation was noted in order to improve on the project performance in terms of project sustainability. The project initiation component of the project lifecycle was thus noted to influence the project performance by impacting on the project sustainability.

2. Problem Statement

Water service agencies are mandated to manage and provide water services to their respective populations. Murang'a South Water and Sanitation Company being one of them are tasked to provide water services within Murang'a County. Appreciating that much of developments within water sector is done through donations, it has always been a problem in directing, utilizing and achieving goals during such endeavors. This has been the case especially whenever inputs are funded. These challenges include water projects management Maragia *et al.*, (2018), project completion management Kanda *et al.*, (2016), project time management Kariuki (2018) and sustainability of the water projects (Nabifwo & Kimutai, 2017). Furthermore, challenges such as escalation of project costs, poor quality of projects and late project delivery have also been witnessed (using the traditional way of funding inputs vis-a-vis OBA which funds outputs) (Anita, Geoffrey, & Anne, 2019; Kamau, 2016). Considering the challenges, it necessitated donors to think of a more secure way of handling water projects; as a result, Output-Based Aid funding model was born to cure the problems by funding outputs instead of inputs. Sabasaba Urban water supply project was undertaken in order to increase the number of people in low income areas with access to improved water supply and sanitation services in Kenyan towns and cities (World Bank, 2020). The project was to be undertaken through

a one-off Output-Based Aid subsidies to make water and sanitation access affordable (World Bank., 2020). The output-based aid (OBA) funding model is being increasingly used by donor agencies in funding projects in order to enhance on the accountability levels and to guarantee greater successes in project performance (Mwakajo & Kidombo, 2017). This serves to ensure that the funds are used with greater transparency and utilized in a prudent manner. One of the organizations that has adopted this funding mechanism is the World Bank (Obuba & Kimutai, 2017). Despite the accountability mechanisms put in place by the OBA model of funding, World Bank, (2020) noted that the Sabasaba water project faced various performance challenges which include cost escalation and late project delivery. In this context, the World Bank, (2020) rated the project Moderately Satisfactory in respect to the progress towards achievement of Project Development Objective (PDO) and moderately unsatisfactory in respect to overall implementation progress. The Project Development Objective (PDO) describes the intended benefits to a specific community/group of people or organizations/institutional changes that are to be realized through one or more development interventions (World Bank, 2020). This study seeks to examine the influence of the project initiation process on project performance of Sabasaba urban water supply project in order to unravel the issues that brings about the OBA model not being effect; in such a way to cure the problems that were traditional encountered while funding project inputs as opposed to OBA which funds outputs.

2. Research Objectives

The main objective of the study is to establish the impact of project initiation on performance of output-based funded Sabasaba urban water supply project.

2.1 Specific Objectives

To establish the impact of project initiation on performance of output-based funded Sabasaba urban water supply project.

3. Empirical Literature

The project initiation process is often the first set of activity for the project management performance. Focusing on the urban road transport projects, Matu *et al.*, (2020) examined the influence of the stakeholder management during the project initiation process on the project performance. The study conceptualized project initiation as the starting process of the project implementation process. In this context, the study found that the stakeholder initiation processes include stakeholder identification process, setting of goals and objectives, needs assessment aspects, and the undertaking of the feasibility activities. These aspects were linked to the enabling the achievement of project performance within the cost and timelines aspects.

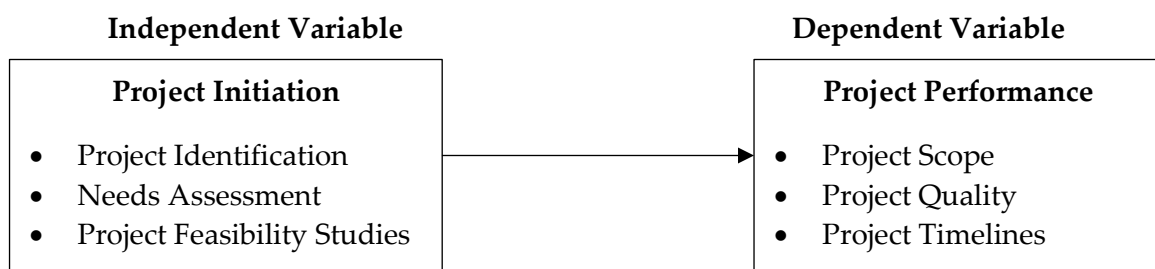
In a study undertaken on building projects in Roysambu constituency, Kihuga (2018) sought amongst other aspects to examine the influence of project initiation on the building project success. The study had viewed the project initiation process as the initial phase of the project implementation in which various activities are undertaken. Amongst these activities, include project identification, development of budgets and schedules, and identification of the project teams amongst others. The study examined the project performance in respect to the project initiation process which is strongly related to processes formulation, project strategy, and project histories aspects. These results were attributed to the projects ideas identification, project feasibility studies, project assessment and evaluation, and project classification.

Focusing on the reproductive projects, Lurimuah *et al.*, (2018) undertook a study that sought to link participatory project initiation process to the reproductive project success. Lurimuah *et al.*, (2018) identified project need identification process, project feasibility studies process, and stakeholder identification process being project planning components. In this context, Lurimuah *et al.*, (2018) indicated that project needs identification process would incorporate elements such as project purposes, goals and objectives, and development of project charter.

4. Conceptual Framework

The conceptual framework uses a diagrammatic representation to provide relationship between independent variables and the dependent variable. The independent variables include project initiation, project planning, project implementation and project monitoring. The project initiation was based on project identification, needs assessment, and project feasibility studies. The project planning was based on the formulation of project action plans, project risk management framework and resources allocation plan. The project implementation was based on adequacy of available resources, resources mobilization and scheduling of project activities. Project initiation, planning, implementation and eventually monitoring are the phases within project lifecycle that are executed sequentially to bring about the overall performance of a project; therefore, indicating the relationships therein between independent and dependent variables. The project performance was measured using project scope, quality and timelines.

Figure 1: Conceptual Framework



Source: Author (2021).

5. Research Methodology

Predictive correlational research design was used in this study. Bager-Charleson and McBeath (2020) views correlational research designs aims at description of levels of association between the independent and dependent variables. Morling (2020) further divided the correlational research design into the explanatory and predictive correlational design. This study deployed the predictive correlational design. In this design, Lecca (2020) notes that the researcher seeks to determine a cause and effect (predictive) relationship between the independent and dependent variables. This research design was used because the study sought to examine the predictive influence of project initiation on the project performance of output-based funded projects in Kenya.

The target population for this study was composed of the senior management staff at Murang'a Water and Sewerage Company (MUWASCO) which is the organization is the implementing agency for Sabasaba water supply project. The study also used the project management staff dealing directly with Sabasaba water supply project and the project contractors as well as the subcontractors for the project. The study thus had a total of 56 population members as follows.

The study used the census sampling method where all the population was included during data collection. Thus, the study had 56 respondents composed of MUWASCO senior management staff (head of departments), project management staff and project contractors.

Table 1: Target Population

Population	Frequency	Percentage
MUWASCO Senior Management Staff (head of departments)	11	19.6%
Project Management Staff	30	53.6%
Project Contractors	15	26.8%
Total	56	100.0%

This study utilized the structured questionnaire for the purposes of data collection. The questionnaire was composed of the demographics sections and a section for each of the independent variable and a dependent variable. The independent and dependent variables was measured using the Likert based questions. The purpose of the Likert scale is to enable ease of measurement of respondent's opinions or feelings in respect to the research phenomenon (Kabay, 2019). The study used a five-point Likert based scale in which the respondents' opinion in respect to the stated questions was provided with the five response options: 1. No Extent; 2. Small Extent; 3. Moderate Extent; 4. Large Extent and 5. Very Large Extent.

The study collected the quantitative data and thus the SPSS software was utilized for the purposes of the data analysis. The data was cleaned and coded into the SPS software. The study undertook the descriptive statistics such as frequencies, mean and standard deviation. The study undertook a linear regression analysis where correlation coefficient and coefficient of determination was carried out.

6. Data Analysis

6.1 Descriptive Statistics

The project initiation variable was examined using five metrics. These metrics include the project stakeholders were adequately consulted, project team identification was undertaken satisfactorily, the project feasibility studies were undertaken in satisfactorily manner, the needs assessment procedure was undertaken in an adequate manner, and there was adequate development of budgets to be used in the project. The results of the study were presented in Table 2 below.

Table 2: Descriptive Statistics Project Initiation

	NE	SE	ME	LE	VLE	Total	
	Freq. %	Freq. %	Freq. %	Freq. %	Freq. %	Mean	Std. Dev.
All the project stakeholders were adequately consulted	0 0.0%	0 0.0%	15 30.0%	23 46.0%	12 24.0%	3.94	.740
The project team identification was undertaken satisfactorily	0 0.0%	1 2.0%	8 16.0%	29 58.0%	12 24.0%	4.04	.699
The project feasibility studies were undertaken in satisfactorily manner	0 0.0%	2 4.0%	17 34.0%	25 50.0%	6 12.0%	3.70	.735
The needs assessment procedure was undertaken in an adequate manner	0 0.0%	2 4.0%	7 14.0%	29 58.0%	12 24.0%	4.02	.742
There was adequate development of budgets to be used in the project	0 0.0%	0 0.0%	4 8.0%	31 62.0%	15 30.0%	4.22	.582

The respondents agreed to a large extent that the project stakeholders were adequately consulted ($M=3.94$, $SD=.740$). The consultation of the project stakeholders is critical in enhancing project performance (Gitau & Sang, 2022; H. M. Zhang *et al.*, 2022). The stakeholder consultation ensures that key stakeholders are board in respect to the project implementation lifecycle enabling the generation of goodwill towards the project, availing of resources such as manpower and financial resources, and enabling compliance with regulatory requirements for public projects. This is consistent with other scholars who have documented the importance of stakeholder consultation to project performance. Those scholars include Aupe and Sagwa (2020) as well as Musau *et al.* (2018) who have noted that stakeholder consultation and involvement is associated with the high project performance.

The stakeholder consultation is particularly important for the output-based projects in ensuring that the project deliverables are achieved in a timely manner to unlock the funding process which is based on achievement of specific project outputs. When asked on whether the project team identification was undertaken satisfactorily, the respondents agreed to a large extent ($M=4.04$, $SD=.699$). The identification of the project team members in critical to project performance through ensuring adequate stakeholder needs prioritization (Hirpa, 2022; Maina & Kimutai, 2018), stakeholder needs mapping (Khan *et al.*, 2021), and stakeholder management (Zhang *et al.*, 2022) which are tied to the

project performance. Thus, the identification of the right project team members is a critical component of both internal and external stakeholder management. The adequate project team identification also leads to adequate capacity to undertake the output-based projects. This is done by ensuring that the requisite skills set are available during the project implementation phase and that the right experts are available for the project. Amongst the project team members expertise required for the project include procurement expertise, financial management skills (Bagheri, 2020), human resource management skills (Zureehan & Lee, 2022), and team management (J. Zhang *et al.*, 2021).

In respect to whether the project feasibility was undertaken in satisfactory manner, there was an agreement to a large extent ($M=3.70$, $SD=.735$). The project feasibility is critical to the project performance aspects. The satisfactory undertaking of the project feasibility ensures that only projects that meet real need on the ground and are sustainable in nature are undertaken. The project feasibility enhances the prospect that the project meets the needs of the intended beneficiaries. Scholars such as Njeru and Kabare (2018) found that the project feasibility as a strong predictor of the project performance. In the OBA funded projects, the project feasibility is critical to avoid the project stalling if critical project deliverables are not meant along the way and thus additional funding are not disbursed. The needs assessment procedure was undertaken in an adequate manner to a large extent ($M=4.02$, $SD=.742$).

The undertaking of needs assessment for the water projects is fundamental in ensuring that the needs of the intended beneficiaries are met. This serves to generate good will towards the project and is critical in stakeholder management aspects. Abijuru and Mulyungi (2018) and S. G. A. Ochieng and Odhiambo (2022) have linked the needs assessment to project performance in diverse projects. These studies associated the needs assessment to effective project design, and project initiation processes. The respondents agreed to a very large extent that there was adequate development of budgets to be used in the project ($M=4.22$, $SD=.582$). The OBA projects undertake to provide the budgets subject to the achievement of pre-agreed project deliverables. The release of sufficient budgets on the achievement of those project deliverables is critical to the achievement of the project objectives. Diverse project budgets aspects have been noted to impact positively on the project performance including budget management (Nsengiyumva & Gitahi, 2021), budget monitoring and control (Liang, 2019) and budget allocation (Y. Zhang & Guan, 2021).

6.2 Regression Analysis

The regression analysis is undertaken in order to determine the influence of the independent variables on the dependent variable (Rawlings *et al.*, 1999; Sarstedt & Mooi, 2019). In this context, this study sought to examine the influence of project initiation, project planning, project implementation and project monitoring on the project performance aspects. The results presented in Table 3 below.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error 3 of the Estimate
1	.669 ^a	.448	.399	.45487

a. Predictors: (Constant), Project Initiation, Project Planning, Project Implementation, Project Monitoring

The study found that the correlation coefficient was 0.669 for the model. According to K. Maina (2021), correlation coefficient presents the correlation between the independent variables and the dependent variable. This study thus notes that the correlation between the independent variables (Project Initiation, Project Planning, Project Implementation, and Project Monitoring) and project performance stood at 0.669 indicating a high correlation between the independent variables and dependent variable. The study also achieved the adjusted coefficient of determination of 0.399 which indicated that 39.9% of the variance in the project performance was associated with Project Initiation, Project Planning, Project Implementation, and Project Monitoring. This would further indicate that 60.1% of the variance of the project performance was due to other factors that were not considered in the regression model.

The one-way ANOVA was also undertaken. According to Matloff (2017), the one way ANOVA is used to examine on whether the regression model is good fit for data. The results were presented in Table 4 below.

Table 4: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.554	4	1.888	9.127	.000 ^b
	Residual	9.311	45	.207		
	Total	16.865	49			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Project Initiation, Project Planning, Project Implementation, Project Monitoring

The study results of the one way ANOVA were $F(4,45) = 9.127$, p value = 0.000. According to Keith (2014) the achievement of a p value of less than or equal to the level of significance leads to the conclusion of the regression model being good fit for data. The study achieved a p value of 0.000 which is less than 5% (0.05) which is the level of significance being used for this study. This led to the conclusion that the regression model is good fit for data. The implication of the regression model being good fit for data implied that at least one of the independent variables (Project Initiation, Project Planning, Project Implementation, Project Monitoring). The achievement of the regression model being good fit for data led to the undertaking of the t tests with a view of determining the specific independent variables that had statistically significant influence on the dependent variable. The two tailed t -tests were undertaken with a view of determining the specific independent variables that had a statistically significant influence on the project performance. The results were presented in Table 5 below.

Table 5: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.458	.494		2.954	.005
	Project Initiation	.404	.148	.374	2.733	.009
	Project Planning	-.057	.105	-.088	-.549	.586
	Project Implementation	-.040	.149	-.050	-.272	.787
	Project Monitoring	.363	.098	.495	3.688	.001

a. Dependent Variable: Project Performance

The study used the t tests to test the following hypotheses:

H₀: There is no statistically significant influence of project initiation on performance of output-based funded Sabasaba urban water supply project.

In respect to the influence of project initiation on the project performance, the study results found that p value of 0.005 was achieved. According to Matloff (2017), the achievement of the p value of less than 5% leads to the conclusion that the independent variable has a statistically significant influence on the dependent variable. Since the achieved p value for the project initiation is less than 5% (level of significance), a conclusion was made that the project initiation had a statistically significant influence on the project performance of the output-based projects. This led to the rejection of the H₀ and acceptance of the alternative hypothesis. The regression coefficient achieved was 0.404 which indicated that a unit change in the project initiation would lead to 0.404 changes in the project performance holding the other independent variables constant.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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