

Influence of Management Support on Completion of Water Projects among Water Services Boards in Kenya: Case Study of Lake Victoria North Water Services Board

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Abstract: Delays in completion of construction projects is prevalent global phenomenon across many sectors and industries. Kenyan construction industry and water sector in particular is no exception. The growing rate of delays in completion of water projects in Kenya is a major concern. Delayed project completion has immense costs to society and has major repercussions on the contracting parties. It is therefore important to ensure timely completion of projects within the triple constraints of time, cost and scope in accordance with specifications in order to realize the expected project benefits. The objective of this study was to investigate the influence of management support on completion of water projects in Kenya – using case study of Lake Victoria North Water Services Board (LVNWSB). The main aim of this study was to determine the factors that influence project completion of water projects in Kenya. The study adopted both quantitative and qualitative survey approach. The instrument of data collection was a questionnaire. The target population consisted of 200 Project engineers, project managers and project contractors who were known to have been directly involved in the construction of the 50 water projects constructed by LVNWSB in eight counties. The 200 respondents were identified to participate in the survey using the census technique. Thus all the 200 respondents were issued with a questionnaire out of which 168 respondents returned the questionnaires representing 84% response rate. Analysis of data was done using descriptive and inferential statistics. Overall correlation of management support focusing on decision-making and resource allocation had a strong and significant positive relationship ($r = 0.695$, $p < 0.01$) with project completion. Regression of management support resulted in the coefficient of determination $R^2 = 0.484$ which implies that the management support contributes 48.4 % of the variation in project completion.

Keywords: Lake Victoria North Water Services Board, Construction, Management support project completion.

1. INTRODUCTION

A project is described as being successfully completed when it delivers the intended performance outcomes on time, within budget and to quality specifications and in addition, achieves its objectives and meets or exceeds the expectations of the stakeholders [1]. Achievement of project objectives is a pre-requisite for successful project completion [2]. Delays in completion of infrastructure development projects are prevalent worldwide in all sectors and industries [3]. Delays in project completion are undesirable as they, not only increase costs, but also create an infrastructure gap which makes it difficult to match the growing demand for the intended services [4]. Timeliness of completion of construction projects is not only a measure of project success but it is also a matter of immense contractual significance to the project owner, contractor and to other key stakeholders [5]. According to [22] delay in completion causes higher overheads, affects client satisfaction and might be the cause of penalties to the Contractor, mistrust, protracted litigation, arbitration, cash-flow problems and total abandonment of the project. Delay in completion of projects also means that upgrades and maintenance of the projects cannot match the growing demand [4].

There are many factors which affect completion of construction of water projects. This study focused on the aspect of management support. Apart from supporting decision-making in leadership, Management also controls resources. This implies that they must be willing to commit sufficient human, financial and material resources to the project if it is to succeed. Low level of senior management participation may be a barrier to resource allocation, stakeholder buy-in and budget agreement for the project [6].

The objective of the study was to investigate the influence of management support on project completion among Water Services Boards in Kenya using Lake Victoria North Water Services Board as the case study. This study would significantly help various actors involved in the construction industry to mitigate disruptions associated with construction projects and achieve timely completion.

2. CONCEPTUAL FRAMEWORK

A conceptual framework is a mental formulation of ideas that give direction to a study by portraying presumed interaction between independent and dependent variables [7]. It relates the variables and concepts the researcher intends to apply in order to achieve the research objectives. The conceptual framework used in this study is indicated in Fig. 1

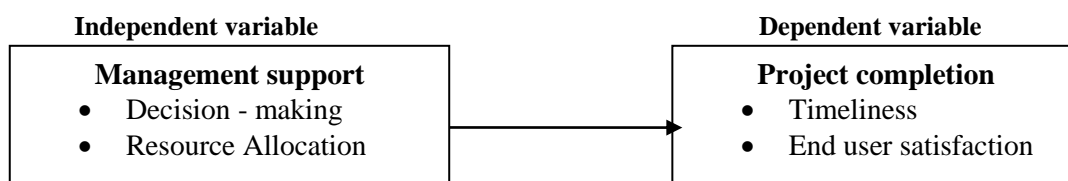


Fig. 1: Conceptual Framework

3. EMPIRICAL REVIEW

Empirical review consists of the published works of past studies that are relevant to variables under study. The purpose of the review is to allow a researcher to place the research into an intellectual perspective [8]. The research effort is motivated by the ultimate aim of achieving project success. Several studies have been carried out on factors affecting completion of projects worldwide, in African countries including in Kenya. [9] studied factors responsible for delay in completion time of construction projects in Malaysia and categorized them into eight factors i.e. client related, consultant related factors, contractor related factors, material related factors, Labour and equipment related factors, contract related factors, contract relationship related factors and external factors.

In a survey of the experiences of 238 UK-based practitioners with sponsors on their projects, [10] found that to maximize on project success, the sponsor should have sufficient authority to champion, intervene and resolve issues pertaining to the project. According to [11] decision-making cuts across all the functions of management. The quality of managerial decisions can determine whether an organization succeeds or fails. Managerial decisions are based on information available to the manager who is making the decision. Therefore the quality and soundness of such decisions directly depend on accuracy and completeness of the information available.

In Zambia, [12] found that the major causes of delayed completion, cost escalation and quality shortfalls in road construction projects in Zambia were delayed payments, financial deficiencies on the part of the client or the contractor, contract modifications, economic problems, material procurement problems, changes in design drawings, staffing problems, unavailability of equipment, poor supervision, construction mistakes, poor coordination on site, changes in specifications, labour disputes and strikes. Most of these factors involve top management of the implementing Agency.

In Kenya [13] studied factors influencing successful completion of roads projects in Kenya. The independent variables were management support, design specifications, contractor capacity and supervision capacity. Correlation tests for each variable showed Pearson's correlation coefficient for management support was 0.625. The study recommended commitment by ministry to management enhance of construction projects were design changes, delays in payment to contractors, information delays, funding problems, poor project management, compensation issues and disagreement on the valuation of work done.

4. SUMMARY AND CRITIQUE OF EXISTING LITERATURE

There are a lot of factors that can influence the completion of a construction project. The role of management support is an important factor in determining timeliness of project completion and the user satisfaction derived from the project. According to [14] top managers influence people to contribute to project goals. Literature has widely and consistently identified executive and senior management support as pre-requisites for project success [15] , [16]. This is because top management controls virtually all key factors in the organization. For instance, in organizational projects, the top management sponsors the project, sets policies, and directs strategy and development of the organization. Senior managers also mobilize public opinion, resolve stakeholder conflicts and motivate and build teams ([17]. Proceeding with any strategic initiative needs the support of the organization’s executive leadership for the project management team. For example, the Project Manager needs direct access to the CEO and senior management. When top management support in decision-making and resource allocation is clearly visible, it inspires the full support and cooperation of the whole organization for the project management team and improving project performance. Therefore management support for the project and project participants is highly desirable and need to be demonstrated consistently [18], [14]. Yet in many cases projects are not subjected to adequate oversight and leadership by competent senior managers thus exposing the projects to the risk of failure [19].

5. RESEARCH METHODOLOGY

This study adopted a descriptive survey research design which according to [20] it entails finding out what, who, where, when and how of the firm characteristics. A case study design was adopted so as to try and bring out deeper insights and better understanding of the issues under study. A census was used to choose the subjects in this study. The entire target population of 200 engineers were selected to be respondents in the study using the census technique of sampling. The study used a questionnaire as the main instrument primary data collection. The questionnaire contained closed and open ended questions. The respondents were required to rank the factors affecting project completion on a 5-point Likert scale as follows; 1 for strongly disagree, 2- disagree, 3- neutral, 4 – agree and 5 – strongly agree.

Pilot study was done by sampling 15 respondents and the reliability of the questionnaire was measured using Cronbach alpha coefficient. The reliability statistics were as indicated in TABLE 1.

TABLE 1 RELIABILITY STATISTICS

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Management Support	.708	.729	8
Project completion	.789	.757	10

According to [21]) Cronbach Alpha reliability coefficient of 0.7 or higher is considered good consistency for most social science research situations. The reliability coefficients for the two variables were above 0.7 and were therefore accepted and used for the study.

6. RESULTS AND DISCUSSION

6.1 Response Rate:

Out of the 200 questionnaires administered, 168 were returned, representing 84% response rate.

6.2 Management Support:

a) Decision - making:

In response to the question as to whether top management ensured adequate consultations among project stakeholders in making key project decisions, 57.1% agreed that top management indeed ensured adequate consultations among stakeholders. Therefore, it implied that majority of the respondents (57%) were of the view that top management ensured adequate consultations among project stakeholders in making key project decisions. Correlation analysis showed that consultations among project stakeholders in making key project decisions had weak positive and significant relationship with project completion ($r = 0.188, p < 0.05$).

b) Resource Allocation:

In response to the question as to whether, top management allocated adequate human resources to the project 14.3% strongly agreed and 42.9% agreed respectively. Therefore, it implied that majority of the respondents (57%) were of the view that top management allocated adequate human resource for the project. Correlation analysis showed that allocation of adequate human resource had a moderate positive and significant relationship with project completion ($r = 0.327, p < 0.05$). Correlation is significant at the 0.05 level of significance.

The overall correlation analysis for management support and project completion is indicated in TABLE 2.

TABLE 2: CORRELATION OF MANAGEMENT SUPPORT AND PROJECT COMPLETION

		Project completion	Management support
Project completion	Pearson Correlation	1	.695**
	Sig. (2-tailed)		.000
	N	168	168
Management support	Pearson Correlation	.695**	1
	Sig. (2-tailed)	.000	
	N	168	168

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

The overall Pearson correlation factor for correlation of management support and project completion is ($r = 0.695, p < 0.01$) which is a strong positive and significant relationship.

(a) Regression Analysis of Management Support and Project Completion:

Regression analysis was done to determine the cause –effect relationship of management support on project completion The results are indicated in TABLE 3.

TABLE 3: MODEL SUMMARY FOR REGRESSION OF MANAGEMENT SUPPORT AND PROJECT COMPLETION

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.695 ^a	.484	.480	2.93606

a. Predictors: (Constant), management support

Regression of management support as illustrated in Table 3 gives the coefficient of determination ($R^2 = 0.484$) which implies that the management support contributes 48.4 % of the variation in project completion while the remaining is attributed to the other factors not considered in this study. This was also significant as illustrated in Table 4. [13] found that management support contributed -3.8% and was significant. [21] Found the influence of project management to be 79.9% of the variation in project completion.

TABLE 4. ANOVA RESULTS (MANAGEMENT SUPPORT)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1339.951	1	1339.951	155.439	.000 ^b
	Residual	1430.996	166	8.620		
	Total	2770.946	167			

a. Dependent Variable: Project Completion

b. Predictors: (Constant), Management Support

The ANOVA results shown in Table 5 show that the relationship for variation in project completion arising from management support was significant at 0.01 level of significance (2 tailed). Thus, the model was fit to predict project completion using management support as an independent variable.

TABLE 5: REGRESSION COEFFICIENTS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-2.426	2.692		-.901	.369
	Management Support	1.384	.111	.695	12.467	.000
a. Dependent Variable: Project completion						

The regression model of the study was of the form.

$$Y = \alpha + \beta X_1 + \varepsilon$$

Where, Y = project completion, α = constant term, β = regression coefficient, X_1 = management support and ε = error term

Ignoring the error term, the equation for regression model would be

$$\text{Project quality} = -2.426 + 1.384 \text{ management support}$$

This showed that the management support had a positive relationship with project completion. When management support factor is zero, influence on project quality will be -2.426. A unit increase in management support factor led to a 1.384 increase in project quality.

7. CONCLUSION AND RECOMMENDATIONS

The study sought to determine the effect of management support as a factor that affects project completion. The study found out that management support affects the completion of projects since it was clear that the top management makes crucial decisions about the project and also controls allocation of resources to the project. The study revealed that management often ensured adequate consultations among project stakeholders while making key project decisions and also supported the project team in making decisions beyond their authority. In addition the top management ensured that subordinates and stakeholders were committed to effectively implementing the decisions previously made. In relation to resource allocation, the study found that top management ensured the projects were allocated adequate funds, and adequate human resource. Top management also assigned persons to the project that had the required technical skills and experience, and supported development of project team skills. However 57.2% (96) of the respondents did not agree that top management allocated adequate human resource for the project. Much as top management seem to be facilitating subordinates there appears to laxity as set timelines are not achieved. It was therefore incumbent on management to enhance supervision and follow-up of subordinates to ensure decisions are acted upon and resources are utilized well to achieve timely project completion.

The overall regression model gave R^2 of 0.484 indicating that the variations around the means in management support is 48.4 %. The remaining balance could be explained by other variables, which were not examined in this study. Therefore management support should be enhanced and embraced by Water Services Boards since it explains a major proportion of variations in project completion.

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