



Project Planning and Implementation in Public TVET Institutions in Nairobi County, Kenya

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Abstract

This study aimed to determine the influence project planning has on implementation of projects in public TVET institutions in Nairobi County, Kenya, due to limited empirical evidence on the phenomenon. Hoshin's model of strategic planning made up the study's theoretical framework. The study adopted an explanatory research design and was conducted in public TVET institutions in Nairobi County. The target population of 132 respondents for the study constituted Ministry of Education officials and top management and staff members of public TVET institutions who were selected using a multistage sampling approach. The sample size was 79 respondents while 72 respondents returned questionnaires. Data was collected using semi-structured questionnaires and analyzed using descriptive (measures of central tendency, measures of frequency, and measures of dispersion) and inferential statistics (correlation analysis and regression analysis). The study found that project planning ($p=.000$) has significant positive effect on project implementation. Therefore, this research concluded that planning is a significant predictor of project implementation success in public TVET institutions in Nairobi County. The study urges future research to explore other types of project management practices and how they influence project implementation.

Keywords: Project Planning, Project Implementation, TVET

Introduction

Project implementation is the execution of a project to realize its objectives where the project manager, together with the project team and other stakeholders, coordinates and directs activities and resources to ensure the set goals of a project are attained. Project planning is a component of project management that defines the execution and control of stages of a project. Pellerin and Perrier (2019), Mohsin (2021), and Irfan et al. (2021) observed that planning is a significant predictor of project success. This is because when planning is done properly, goals and objectives are well-defined, project scope is determined, resources are allocated efficiently, risks are managed, communication is enhanced, accountability is established, and overall project efficiency is improved. According to Ibrahim and Cross (2020), while project planning as a whole improves project success, the impact of specific planning practices varies. For instance, out of 19 practices tested, only seven of them had a significant impact.

Muthini and Nyang'au (2022) discovered that project planning is a moderate but significant predictor of government housing projects in Kenya. The researchers cited that project planning leads to success by helping the project team and other stakeholders understand project design and the required resources for successful implementation. Similar sentiments were shared by Wanjau et al. (2024), who observed that planning practices explain up to 51.3% of the success of public housing projects.

This study aimed to determine the influence of project planning on implementation of projects in public TVET institutions in Nairobi County, Kenya.

Statement of the Problem

Kenya's government is increasingly investing in TVET to increase the size of its well-trained workforce and implement Kenya's Vision 2030 programs and projects (Government of Kenya, 2003). Despite significant financing of TVET institutions projects aimed at industrializing Kenya by 2030, some of the projects in Nairobi County have not commenced, some are abandoned, and others have encountered delays in completion. In addition, project delays, non-completion, and cost overruns have been persistent (Ninan & Sergeeva, 2022); some have stalled, while others do not meet the required quality standards. If the various issues affecting the execution of major programs in TVET institutions in Nairobi County are not addressed, it will be difficult for the country to achieve its dream of creating well-trained human resource by 2030.

Studies by Pellerin & Perrier (2019), Mohsin (2021), Irfan et al. (2021), Ibrahim & Cross (2020) and Wafula et al. (2019) examined how project planning influences implementation of public projects. Although these studies offer valuable insights into the topic, they are not without scope, methodological, conceptual and contextual gaps. This study sought to focus on how project planning influences implementation of projects in public TVET institutions in Nairobi County because many of the previous studies focusing on public projects were done outside Kenya and even those done in Kenya did not cover projects in TVET institutions. Therefore, this study sought to fill scope, contextual, conceptual and methodological gaps by investigating how project planning influences the implementation of projects in public TVET institutions in Nairobi County.

Objective of the Study

The study was guided by the following objective: To determine the effect of project planning on project implementation in public TVET institutions in Nairobi County.

Research Hypothesis

The study tested the following hypothesis:

H₀1: Project planning has no significant effect on project implementation in public TVET institutions in Nairobi County.

Literature Review

Pellerin and Perrier (2019) define project planning as the documentation of the necessary steps to achieve an organizational goal or related objectives. They are of the view that project plan serves as the basis for performing and managing a project's activities, resources, constraints, risks, deliverables, timeline, and capabilities. Therefore, a project plan is a critical element of project management because it provides a sense of shared vision of what the project aims to accomplish and a roadmap for its effective execution. So, without it, a project is bound to fail altogether. Because of its significance in project management, the impact of project planning on the effective implementation of projects has widely been explored. For instance, Mohsin (2021) sought to determine the impact of a project plan on project success in Pakistan. The study adopted a quantitative research design. A sample of 211 team members of IT projects in Rawalpindi and Islamabad were recruited using a convenient sampling technique. Primary data was collected using questionnaires and analyzed via regression and correlation statistics. The findings revealed that project planning is a significant predictor of project success. However, despite the study statistically proving

that project planning drives project success, the study is limited in that it was contextualized to IT projects in Pakistan.

In a similar investigation, Irfan et al. (2021) contributed to the topic by examining the significance of planning activities and the competence of project managers in public sector project success. A sample of 260 project engineers from government institutions in Balochistan, from whom data was obtained via questionnaires, was recruited. The researchers found out that both planning and project manager competence contribute significantly to project success. Irfan et al. (2021) concluded that to increase public project success, more effort should go towards planning practices. However, since the geographical scope of the study was limited to Pakistan, its findings cannot be inferred for projects in TVET institutions in Kenya.

Chow et al. (2021) observed that “sustainable project management impacts sustainable project success and sustainable project planning significantly; sustainable project planning correlates with sustainable project success.” Also, project planning mediates the relationship between sustainable project management and project success. However, a limitation was noticed in the study; it was based in Malaysia and focused on manufacturing firms – both scope and contextual gaps. This study was based in Kenya and focused on TVET institutions.

Elsewhere in Nigeria, Ibrahim and Cross (2020) examined the processes of planning practices and their effect on construction project effectiveness. In particular, the study focused on 19 processes of project planning to determine the most critical ones. A sample of 60 respondents from three construction firms in the Federal Capital Territory was recruited, and data was collected using questionnaires. Primary data was collected and analyzed via correlational and multiple regression statistics. Findings suggest that planning is a significant predictor of success in completing construction projects.

In Kenya, Wafula et al. (2019) investigated how planning affects construction projects' successful completion. The inquiry was based on the construction of health facilities in Trans-Nzoia County's CDF program. Resource-based, complexity, constraints, and utility theories were adopted, and a descriptive design adopted. 81 respondents were recruited, and data was collected via structured questionnaires. Thematic, correlation statistics, and multiple regression methods were used for analysis. A significantly positive correlation was discovered between planning practices and project outcomes. The study focused on construction projects for health facilities in Trans-Nzoia. Therefore, findings cannot be generalized to project implementation in public TVET institutions in Nairobi County, which was the focus of this study.

Theoretical Framework

This study was underpinned by the principle of Hoshin model of strategic planning which is a planning system designed to expedite and improve processes in order to achieve long-term strategic goals through everyday operations (Dias & Tenera, 2020). The central goal of the model is to ensure an organization's strategic goals drive progress and action. Therefore, it proposes seven steps for achieving this goal: establish a vision, develop breakthrough objectives, develop annual objectives, deploy annual objectives, implement annual objectives, monthly reviews, and annual reviews (Balzer & Sinha, 2023). The seven-step process serves as a systematic process for tackling long-term strategic goals through day-to-day operations. The model has a widespread application in project management literature. For instance, Leth et al. (2019) used the model to identify and eliminate inefficiencies, resulting in smooth project execution in project management. Despite the usefulness of the model, it is not without its limitations. The biggest shortcoming of the model is that it does not allow room for error; it requires a high level of commitment from everyone involved, which sometimes may not be achievable (Dias & Tenera, 2020). Nonetheless, since it is designed to assess the process of strategic planning from theory to practice implementation, the model was relevant to the study. It played a crucial role in examining the impact of planning practice on public project implementation.

Research Methodology

The study adopted an explanatory research design and was conducted in nine public TVET institutions in Nairobi County.

Sample Size and Sampling Procedure

The target population of 132 respondents constituted of Ministry of Education officials, top management of public TVET institutions, and staff members of each institution who were selected using a multistage sampling approach. The sample size consisted of 79 respondents.

Data Collection and Administration

Data was collected using semi-structured questionnaires which were distributed to the respondents via electronic and physical means. The reliability of the questionnaire was ascertained by first performing pilot testing. The instrument was also subjected to Cronbach's alpha test to check for and improve its internal consistency. The questionnaire was deemed reliable as the alpha values for each construct fell in the acceptable range of 0.7 and 1. Proper planning, sufficient quality control, and a strategic implementation process were ensured to enhance the inquiry's internal

validity. Data was analyzed using descriptive (measures of central tendency, measures of frequency, and measures of dispersion) and inferential statistics (correlation analysis and regression analysis).

Results of the Study

The results of the study were as presented below.

Effect of Project Planning on Implementation in Public TVET Institutions

The results were as presented in Table 4.1.

Table 4.1: Project Planning and Implementation

Statement	N	Mean	SD
In the institution, necessary steps are taken to determine and document project goals.	72	4.1528	.7811
In the institution, necessary measures are taken to ensure projects are adopted within the budgets.	72	4.1944	.8331
In the institution, project tasks and assigned resources are well-defined before project execution.	72	4.2083	.8381
In the institution, resources are allocated effectively to facilitate project execution.	72	4.1389	.7927
In the institution, the roles and responsibilities of the project team are well defined.	72	4.0833	.8841
Composite	72	4.1556	.8258

Source: (Researcher, 2024)

The overall composite mean was 4.1556 at 0.8258 standard deviation, implying that respondents were, in general, of the opinion that project planning practices are adopted in project implementation in public TVET institutions. Qualitative data further reinforced this opinion with majority of the respondents (84.72%) being in agreement that project planning affects project implementation. They explained that planning is the foundation of effective project execution. In addition, inferential statistics revealed that project planning has a significant positive effect ($r=.583$, $p=.000$) on project implementation. This means that project planning is a significant determinant of project success in public TVET institutions.

From the analysis of the qualitative data arising from the responses to open ended questions, it was evident that project planning practices affected the implementation of projects as majority of the respondents (84.72 %) were in agreement. Many respondents highlighted that project objectives, cost, timeline, tasks, resources, and schedules are well-defined during planning; plans ensure resources are prioritized and allocated appropriately thereby minimizing wastage; planning helps determine if available budget can accommodate project needs; plans enhance good project management and guides implementation process; and planning goes a long way in identifying

and mitigating potential risks and roadblocks that can affect project success. From the findings of the study, it can be concluded that project planning is a critical project management practice.

Correlation of Project Planning and Implementation in Public TVET Institutions

Correlation analysis was performed to test the association between project planning and implementation which was the dependent variable. This research performed Spearman’s rank correlation analysis, a nonparametric test, since project planning was not normally distributed as per results of normality test. Results are presented in Table 4.2.

Table 4.2: Correlation Analysis

		Project planning	
Spearman's rho	Project implementation	Correlation Coefficients	.583**
		Sig.(2-tailed)	.000
		N	72

** . Correlation is significant at the 0.05 level (2-tailed).

Source: (Researcher, 2024)

The results of correlation analysis, as illustrated in Table 4.2 above show that a strong, significant positive correlation was observed between project planning and implementation ($r=.583, p<.05$).

Regression Analysis

The study performed regression analysis to establish the effect of project planning on project implementation in public TVET institutions.

Model Summary

The model summary demonstrates the R, R-Squared and adjusted R-Squared statistics as shown in Table 4.3.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.801 ^a	.642	.537	.47622

a. Predictors: (Constant), Project planning

Source: (Researcher, 2024)

The results of the analysis, as presented in Table 4.3, indicate that a significant portion of variance (R Square=0.642) in project implementation is attributed to project planning and other project implementation practices. In other words, project planning together with the other project management practices were found to account for 64.2% of project implementation.

ANOVA

Table 4.4 shows the results of Analysis of Variance.

Table 4.4: ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.194	16	2.887	6.153	.000 ^b
	Residual	25.806	55	.469		
	Total	72.000	71			

a. Dependent Variable: Project implementation

b. Predictors: (Constant), Project planning

Source: (Researcher, 2024)

The results of the analysis, as presented in Table 4.4, indicate that the regression model is statistically significant ($F(16, 55) = 6.153, p < .05$). Therefore, it can be said that project planning is a reliable predictor of project implementation in public TVET institutions in Nairobi County.

Coefficients

The research ran a regression analysis to assess how much change in project planning can predict the change in project implementation. The results of the analysis are unveiled in Table 4.5.

Table 4.5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.570	.393		1.452	.151
	Project planning	.371	.271	.382	1.872	.000

a. Dependent Variable: Project implementation

Source: (Researcher, 2024)

The regression coefficients presented in Table 4.5 above indicate that project planning has a significant positive effect ($B = .371, p = .000$) on project implementation. This means that a unit increase in project planning would result in increased levels of project implementation in public TVET institutions. The findings assert the relevance and importance of project planning in the implementation of public projects. Therefore, this research proves that adopting strategic steps towards better project planning at TVET institutions improves project success.

The regression equation for project implementation is as follows:

$$\text{Project implementation} = .570 + .371X_1$$

Where;

X_1 = Project planning

As seen from the equation, project planning had regression coefficient of 0.371 which means it had a significant positive impact on the project implementation.

Hypothesis Testing

Statistical analyses were performed to test the hypothesis: **H₀₁**: Project planning has no significant effect on project implementation in public TVET institutions in Nairobi County.

The findings from the regression analysis revealed that project planning has a significant positive effect on project implementation in public TVET institutions, as proven by ($B=.371$, $p=.000$). Therefore, the null hypothesis that project planning has no significant effect on project implementation in public TVET institutions was rejected and the alternative hypothesis was accepted. The default position of the study that correlation between project planning and project implementation does not exist was rejected because this research produced statistical evidence showing significant positive correlation between the variables. Therefore, this research is in agreement with (Mohsin, 2021; Chow et al., 2021; Ibrahim & Cross, 2020; Wafula et al., 2019) on the effect of project planning on project implementation.

Conclusion

The study concluded that project planning has a significant effect on project implementation. This means that adopting strategic steps towards better project planning improves project success. Project planning is a significant predictor of project implementation in public TVET institutions in Nairobi County.

Recommendations

The study recommends that the Ministry of Education, particularly the state department in charge of TVET institutions should consider formulating policies on project planning to guide and improve the effectiveness of project execution in public TVET institutions.

Secondly, the study recommends that critical decision-makers in public TVET institutions in Nairobi County should work towards adopting mechanisms for effective project management by taking into consideration the effects of project planning.

Thirdly, the study urges future research to look into other types of project management practices and how they influence project implementation in public TVET institutions in Nairobi County.

Conflict of Interest: The authors reported no conflict of interest.

Data Availability: All data are included in the content of the paper.

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