



PROJECT PROCESS MONITORING ON COMPLETION OF AIRSTRIP PROJECTS IN KENYA

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ABSTRACT

Despite the critical role airstrips play in enhancing regional connectivity and supporting the aviation sector in Kenya, many airstrip projects face significant challenges related to timely and successful completion. Delays, cost overruns, and failure to meet safety and quality standards are common issues that hinder the operationalization of these vital infrastructures therefore the study seeks to assess the effect of project process monitoring on the completion of airstrip projects in Kenya, focusing on the case of Lanet Airstrip in Nakuru County. The study was guided by the theory of change and theory of constraints. A descriptive research design was employed to gather information. The study took place at Lanet Airstrip, which is located at the 80 Tank Battalion Barracks in Nakuru County. The target population for the study includes 95 personnel involved in the Lanet Airstrip construction project, comprising engineers, construction officers, project managers, site agents, and surveyors. A census approach was used to include the entire target population of 95 respondents, considering the small and easily accessible nature of the population. Primary data was collected using questionnaires with closed-ended questions to obtain measurable and quantitative data and eliminate irrelevant answers. The Social Sciences Statistical Package version 25 was used for data analysis, employing a regression model to examine the relationship between the variables. Presentations were done in tables. The findings indicated that process monitoring is a critical technique for reducing the chance of project failure to be completed on time. To enhance project process monitoring and improve the completion of airstrip projects in Kenya project managers should adopt real-time monitoring tools for better tracking, strengthening communication and collaboration among stakeholders to ensure timely problem-solving, and conducting regular audits and inspections to maintain quality and compliance

Key words: Project Process Monitoring, Completion of Airstrip Projects

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INTRODUCTION

Project process monitoring refers to the continuous tracking and assessment of various activities, resources, and timelines throughout the life cycle of a project to ensure that it is progressing as planned. In the context of airstrip projects, this involves overseeing the development stages from design, procurement of materials, construction, and quality control, to adherence to safety and regulatory standards. For airstrip projects, which are critical infrastructure aimed at improving regional connectivity and enhancing the aviation sector, process monitoring ensures that each phase aligns with the expected quality and safety benchmarks (Kharub and Saini, 2021). Effective project process monitoring is crucial to avoid delays, cost overruns, and technical failures, all of which can severely impact the functionality and success of airstrip projects (Dyer et al. 2019).

The significance of project process monitoring lies in its ability to provide real-time information about project progress, enabling project managers to make informed decisions and adjustments where necessary. It entails tracking key performance indicators (KPIs) such as timelines, budget adherence, resource utilization, and quality standards (Mokwena & Fregidou-Malama, 2020). For airstrip projects, it helps in identifying risks early, addressing bottlenecks, and ensuring compliance with aviation and construction regulations. Project process monitoring also facilitates communication between stakeholders, ensuring transparency and accountability throughout the project life cycle (Okereke, 2017).

Project completion refers to the point at which all activities of the project have been finalized and the deliverables meet the specified requirements. In the context of airstrip projects, completion is marked by the successful delivery of a fully operational airstrip, ready for use and meeting all safety, structural, and regulatory standards (Damoah and Kumi, 2018). The

importance of project process monitoring in ensuring project completion is profound, as it helps manage resources, time, and quality at every stage. By continuously assessing progress, potential delays or issues can be identified and addressed early, ensuring that the airstrip project is completed on time, within budget, and according to specification (Florentine, 2017).

The measures of completion for airstrip projects typically include the achievement of key milestones, such as the completion of earthworks, pavement construction, lighting installations, and safety tests (Patanakul, 2018). Other indicators of successful completion are meeting regulatory approvals, operational readiness, and the handover of the project to the relevant authorities or stakeholders. In airstrip projects, the functionality and safety of the completed airstrip, as well as its ability to handle expected aircraft traffic, are crucial measures of a project's successful completion (Mbarawa, 2016).

In November 2020, Nakuru County, Kenya, announced a transformative development initiative the commencement of the Lanet Airstrip construction project. Nakuru Governor Lee Kinyanjui confirmed this ambitious undertaking, signaling a significant investment in the region's transportation infrastructure. Valued at an estimated Sh 3 billion, the project aimed to elevate the existing military airstrip into a modern international airport, promising substantial economic benefits (Anyango, 2020). Situated within the premises of the 81 Tanks Battalion Barracks, this project was structured into two distinct phases. The first phase focused on the rehabilitation of the runway, the construction of essential facilities like terminals, fire-fighting buildings, and readiness for use by 50-seater planes (Anyango, 2020). Subsequently, the second phase would entail runway expansion to 3.6km, facilitating the operation of larger cargo and passenger planes, alongside infrastructural improvements and accessibility enhancements (Anyango, 2020).

Statement of the Problem

Despite the critical role airstrips play in enhancing regional connectivity and supporting the aviation sector in Kenya, many airstrip projects face significant challenges related to timely and successful completion. Delays, cost overruns, and failure to meet safety and quality standards are common issues that hinder the operationalization of these vital infrastructures. Ineffective project process monitoring has been identified as a key factor contributing to these problems, as it leads to poor tracking of progress, mismanagement of resources, and a lack of timely interventions when risks arise (Damoah and akaumi,2018). Without adequate monitoring, airstrip projects often fall short of their intended timelines and objectives, resulting in increased costs, substandard outcomes, and delays in service delivery. According to recent data from the Ministry of Transport, Infrastructure, Housing and Urban Development (2023), there are approximately 54 airstrips in Kenya, but only 18 are operational. The remaining 36 airstrips are yet to be completed and not in good condition, including the Lanet Airstrip in Nakuru County. This is coming against the backdrop of project monitoring practices put in place by the relevant authorities tasked with delivering the projects within the planned time frames. This study therefore, seeks to determine the effect of effect of project Process monitoring on completion of airstrip projects in Kenya.

Objectives of the Study

To establish the effect of project Process monitoring on completion of airstrip projects in Kenya.

Hypotheses of the Study

H₀: There is no statistically significant effect between project Process monitoring and completion of airstrip projects in Kenya.

LITERATURE REVIEW

Theoretical Review

This study was guided by theory of change and theory of constraints. Weiss created the theory of change in 1995 and characterized it as a theory of project success. Weiss defines it as a collection of assumptions that explain the connections between the steps taken during an intervention or programme and the results obtained. (Burt, 2016) A theory of change is a model that explains how a given intervention is likely to have the expected results. Management and decision-makers use a theory of change in strategic planning when a project or programme develops and expands, as stated by Jean, Diana, and Avan (2016). Project and programme managers may utilise this information to refine their processes and make improvements based on what has been learned. To better understand how an organization's actions, affect its customers, employees, and the larger community, practitioners might look to theories of change (Jean, Diana, & Avan, 2011).

According to Annie (2009), the theory of change can be used in planning to help an organisation achieve a number of positive outcomes helpful to its growth. These outcomes include: increased organisational capacity through improved skills, staffing, and leadership; increased alliances through increased levels of coordination, collaboration, and mission alignment; enhanced grassroots, leadership, and institutional relationships and alliances; and enhanced policy through increased policy development stages. Policy changes are effective, but so are other approaches like gaining public backing and altering individual habits. Consequently, this theory is relevant to the study's monitoring and assessment strategies and baseline statistics.

In his 1984 essay, Eliyahu Goldratt outlined the foundations of the theory of constraints (TOC). The notion is based on the premise that all projects have

constraints that might make them challenging to execute (Yaoga, 2015). Constraint theory suggests that in order to enhance the production system, it is necessary to first pinpoint the obstacles that now stand in the way of its success. Some of the limiting factors in a project's execution include planning, production control, project management, and performance measures.

Since the building of the airstrip on Lanet may have posed hazards that needed to be tracked, this idea is relevant to the present investigation. The Airstrip project may have been a success if these dangers hadn't been ignored. The most effective approach to addressing these issues is to devise a framework for responding to these obstacles and reducing impediments to putting building projects into action.

Process Monitoring and Completion of Airstrip Projects

Jaselkis and Ashley (2021) investigated how the project team, planning, and control activities impacted project success, schedule performance, and budget performance. This research, like many before it, used the discrete choice model as its method of analysis. The results showed that the key success criterion affected the project outcomes in different ways. Improving project timetable and overall performance is possible, for instance, by increasing the frequency with which budget updates are

provided. Especially for fixed-price contracts, the deployment of a constructability programme seems to have a significant influence on overall project success and schedule performance. When compared to achieving deadlines and improving project performance as a whole, budget performance is most impacted by efforts to reduce team turnover.

Within the context of the Project Management Institute's approach to project management, Irfan, Khan, Hassan, Hassan, and Habib,(2021) conducted research to investigate the relationship between project Process monitoring and project success. This survey-based research sought to fill this knowledge gap by collecting the perspectives of 260 project engineers and construction officials from public sector organizations active in Baluchistan. Quantitative data were collected using the method of partial least squares structural equation modeling to test the assumptions put forward. The results suggest that competent planning and execution significantly improve the success of public sector initiatives. It was determined that Process monitoring has a more significant effect on project success in the public sector. Based on the results, the authors recommend giving future planning and a project manager's skillset more attention.

Conceptual Framework

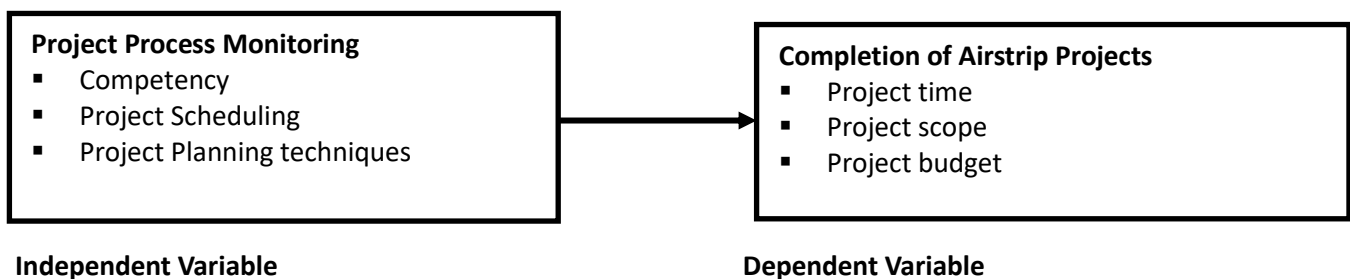


Figure 1: Conceptual Framework

METHODOLOGY

The study adopted a descriptive research design to collect observational data from a sample of 95 employees at the Lanet Airstrip in Nakuru County. A census sampling method was employed due to the manageable size of the target population, which included engineers, project managers, and surveyors. Primary data were gathered through structured questionnaires consisting of closed-ended questions, ensuring the reliability and validity of the research instruments. Data collection commenced after obtaining the necessary approvals from relevant authorities, and subsequent analysis utilized a regression model to assess the relationships between various monitoring practices and project outcomes. Hypotheses findings revealed statistically significant effects of financial, technical,

risk, and project process monitoring on project success and performance, underscoring the critical role of these monitoring strategies in enhancing airstrip project completion in Kenya.

FINDINGS AND DISCUSSION

The researcher distributed 95 questionnaires however 78 were returned, accounting for an impressive 82.10% response rate

Project Process monitoring and Completion of airstrip Projects

Table 1 summarizes the project process monitoring for Kenya's Lanet Airstrip project. These declarations give information on the efficacy of several areas of project process monitoring.

Table 1: Project Process monitoring and Completion of airstrip Projects

Statements	N	SD	D	N	A	SA	Mean	Std.
The Lanet Airstrip project team had a very high competency level	78	9%	3%	13%	44%	31%	4.000	0.816
The Lanet Airstrip Project Scheduling was effective and aligned to project goals.	78	25%	31%	19%	9%	16%	2.667	0.512
The Lanet Airstrip project team involved the shareholder in all stages of project execution.	78	41%	44%	3%	6%	6%	3.333	0.653
The Lanet Airstrip project monitoring team was effective and did their monitoring work effectively	78	31%	38%	6%	16%	9%	2.000	0.385
The Lanet Airstrip monitoring was affected by political interferences.	78	3%	13%	50%	28%	6%	3.667	0.731
Overall Mean and Std. Deviation							3.133	3.097

From the findings 75% of respondents agreed (with a mean of 4.000 and a standard deviation of 0.816) that the project team had a very high competency level. This implies a positive impact, suggesting that a highly competent team contributed positively to the project's execution. Competency can lead to better decision-making, effective problem-solving, and ultimately project success. A combined 56% of respondents disagreed (with a mean of 2.667 and a

standard deviation of 0.512) that project scheduling was effective and aligned to project goals. This implies that a significant portion of respondents saw project scheduling as effective, which can positively influence project management and goal achievement. The study findings are in line with the findings of Jaselkis and Ashley (2021) who revealed that effective project scheduling implies that the project's timeline and milestones are well-aligned with its overarching goals.

This alignment ensures that the project progresses in a structured manner, with each phase contributing to the achievement of desired outcomes.

In addition the findings indicated that 85% of respondents disagreed (with a mean of 3.333 and a standard deviation of 0.653) that the project team involved stakeholders in all stages of project execution. This implies a positive impact, indicating that stakeholder involvement was perceived as beneficial. Furthermore majority of the respondents agreed that engaging stakeholders can lead to greater project support, improved decision-making and better project outcomes. The findings also revealed that 69% of respondents disagreed (with a mean of 2.000 and a standard deviation of 0.385) that the project monitoring team was effective. This implies a positive impact on project monitoring, suggesting that an effective team positively contributed to project oversight.

Effective monitoring can lead to better risk management and project success. This statement shows that 34% of respondents remained neutral (with a mean of 3.667 and a standard deviation of 0.731) that project monitoring was affected by

politics. This implies a negative impact, indicating that political interference had a significant influence on project monitoring. Political interference can lead to biased decisions, delays, and potential project complications. The study findings conquer with the findings of Irfan, Khan, Hassan, Hassan and Habib, (2021) who noted that political interference may lead to biases in decision-making during project monitoring. Decisions may be influenced more by political considerations than by the project's actual needs, potentially leading to suboptimal choices.

The overall mean of 3.133 indicates a moderately positive perception of project process monitoring at the Lanet Airstrip project, with strengths in team competency and stakeholder engagement, albeit with notable challenges. However, the standard deviation of 0.977 reflects significant variability in responses, underscoring differing opinions on the effectiveness of project scheduling, team monitoring, and the impact of political influences. This variability suggests a need for more consistent and robust project management practices to mitigate external interferences and ensure better alignment with project goals and timelines in future initiatives.

Completion of Airstrip Projects

Table 2 presents descriptive information on halted airstrip projects, focusing on numerous causes that contribute to airstrip project incompleteness.

Table 2: Completion of airstrip Projects

Statements	N	SD	D	N	A	SA	Mean	Std.
There were effective project monitoring practices at the Lanet Airstrip.	78	6%	38%	40%	13%	3%	3.000	0.577
Project scope affected the implementation of Lanet Airstrip.	78	25%	31%	19%	9%	16%	2.500	0.866
Stakeholder involvement enhances the quality of a project.	78	3%	6%	41%	44%	6%	3.500	0.866
The community are highly involved in project implementation procedures leads to project success.	78	6%	31%	38%	16%	9%	3.000	0.577
Political interference led to the incompleteness of the Lanet Airstrip project.	78	13%	6%	3%	50%	28%	4.001	0.817
Overall Mean and Std. Deviation							3.200	3.703

The findings indicates that 44% of respondents disagreed (with a mean of 3.000 and a standard deviation of 0.577) that effective project monitoring practices were in place at the Lanet Airstrip. This implies a positive impact, suggesting that effective monitoring positively contributed to project management. Effective monitoring can lead to better decision-making, risk mitigation, and project success. Furthermore the findings 56% of respondents disagreeing (with a mean of 2.500 and a standard deviation of 0.866) that project scope affected the implementation; this implies that a significant portion of respondents saw the project's scope as a factor influencing implementation negatively. It indicates that the project's scope might have been too ambitious or not well-defined, contributing to implementation challenges. In addition the findings indicated that 50% of respondents agreed (with a mean of 3.500 and a standard deviation of 0.866) that stakeholder involvement enhances project quality. This implies a positive impact, indicating that active stakeholder engagement positively contributes to project quality and success. Engaging stakeholders can lead to better decision-making and more aligned project goals. According to Plumecocq, (2018), engaging stakeholders from the beginning helps in eliciting and understanding their requirements and expectations. Clear and comprehensive requirements contribute to a more accurate project scope and better alignment with stakeholder needs.

The findings furthermore indicated that 37% of respondents disagreed (with a mean of 3.000 and a standard deviation of 0.577) that the community's high involvement in project implementation

procedures leads to project success. This implies a positive impact, suggesting that community engagement positively influenced project outcomes. Community involvement can lead to greater support, smoother execution, and ultimately better project success. With 78% of respondents agreeing (with a mean of 4.001 and a standard deviation of 0.817) that political interference led to the project's incompleteness, this implies a negative impact. It indicates that political interference had a significant negative influence on the project, causing it to remain incomplete. Political interference can lead to biased decisions, delays, and complications, hindering project success. According to Ahsan and Gunawan (2018) political interference can create confusion among project stakeholders. Changes driven by political factors may not align with the expectations and understanding of those involved in project monitoring, leading to challenges in communication and coordination.

The overall mean of 3.200 indicates a generally positive perception regarding factors influencing the completion of airstrip projects, particularly in terms of stakeholder involvement and community participation. However, the high standard deviation of 0.703 reflects significant variability in responses, suggesting diverse views on the effectiveness of project monitoring practices and the impact of project scope and political interference. This variability underscores the complex dynamics influencing airstrip project completion, highlighting the need for more consistent project monitoring practices and strategies to mitigate political influences for successful project outcomes in similar contexts.

Correlation Analysis

The study adopted Pearson correlation analysis. Pearson's correlation coefficient (r) a measure the strength of the association between the two variables.

Table 3: Correlation Matrix

		Completion of Airstrip Projects
Project Process Monitoring	Pearson Correlation	.541*
	Sig. (2-tailed)	.000
	N	95

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

The findings indicated that there is a strong positive correlation between project process monitoring on completion of Lanet Airstrip project in Kenya (r=0.541; p<0.05). The implies that better project process monitoring enhances completion of Lanet Airstrip project in Kenya. The study findings agree with the findings of Jaselkis and Ashley (2021) who showed that process monitoring allows project managers to track various activities and milestones throughout the

project lifecycle. By continuously monitoring the progress of tasks such as land acquisition, site preparation, construction, and infrastructure development, project teams can detect issues or delays early on. This early detection enables prompt intervention and corrective action, preventing minor problems from escalating into major obstacles that could impede project completion.

Overall Model

The researcher conducted a regression analysis to determine the relationship between project process monitoring and completion of airstrip project.

Table 4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.469	.309		-4.760	.000
Project Process Monitoring	.342	.071	.303	4.835	.000

The interpretations of the findings indicated follow the following regression model.

$$Y = -1.469 + 0.342X_1 + \dots + 1$$

According to the intercept (β_0), the value of completion of Airstrip projects in Kenya will be -1.469. holding all the other variables constant, a unit increase in project process monitoring would lead to a 0.342 improvement in completion of Airstrip projects in Kenya. This implies that risk monitoring affects completion of Airstrip projects the most, followed by project process monitoring, financial monitoring, and technical monitoring respectively.

CONCLUSIONS AND RECOMMENDATIONS

The project process monitoring aspect of the Lanet Airstrip project indicated the influence of various factors on project completion. A highly competent project team was viewed positively, emphasizing the role of competency in project execution. The effectiveness of project scheduling and alignment with project goals varied among respondents. Stakeholder involvement was perceived as beneficial, indicating the importance of engaging stakeholders for improved project outcomes. The presence of an effective project monitoring team was recognized as a positive influence on project oversight. Political

interference was viewed as a factor influencing project monitoring. To enhance the successful completion of similar airstrip projects, it is essential to ensure the competency of project teams, effective scheduling, stakeholder involvement, and minimize political interference in project monitoring.

The overall mean of 3.133 indicates a moderately positive perception of project process monitoring at the Lanet Airstrip project, with strengths in team competency and stakeholder engagement, albeit with notable challenges. However, the standard deviation of 0.977 reflects significant variability in responses, underscoring differing opinions on the effectiveness of project scheduling, team monitoring, and the impact of political influences. This variability suggests a need for more consistent and robust

5.2 Recommendations of the Study

To enhance project process monitoring and improve the completion of airstrip projects in Kenya, several strategies can be implemented. These include adopting real-time monitoring tools for better tracking, strengthening communication and collaboration among stakeholders to ensure timely problem-solving, and conducting regular audits and inspections to maintain quality and compliance. Additionally, developing a comprehensive risk management plan helps address potential challenges early, while providing specialized training for project managers equips teams with the skills needed for effective oversight. Finally, introducing milestone-based incentives can motivate contractors and teams to meet project deadlines, ensuring timely and efficient completion.

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