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MONITORING PRACTICES AND IMPLEMENTATION OF AIRPORTS CONSTRUCTION PROJECTS AT JOMO KENYATTA INTERNATIONAL AIRPORT KENYA

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Abstract

The purpose of the study was to establish the influence of project monitoring process on implementation of aviation infrastructure construction projects in Kenya. The study was guided by the following specific objectives; To analyse the influence of monitoring planning, tools, techniques and adoption of monitoring practices on implementation of aviation infrastructure construction projects in Kenya. The study was anchored to Theory of Triple Constraints, Participatory Theory, Results Based Management Theory and Resource Based Theory. The target population for the study was 305 (consultants, contractors and project team) implementing aviation infrastructural projects in Kenya. The study sample size was 173 as determined by Slovin Sample determination formulae. The study conducted a pilot study to check the validity and reliability of the data collection instrument. A questionnaire was used to collect primary data and consist of both structured and open-ended questions to give qualitative and quantitative data. Data was analysed using descriptive and inferential statistics in which frequencies and percentages will be used. SPSS was used to analyse the data and to determine whether the independent variables are related to the dependent variable. Data was presented in tables, pie charts and graphs. Qualitative data was coded and themes related to research questions in the study identified. Qualitative data was interpreted by attaching significance to themes and patterns observed by the use of content analysis. The study found a strong positive correlation between the four independent variables and the dependent variable. The multiple regression model showed a fairly strong relationship with the data related to the variables indicating a good predictive model. Further, the study found a statistically significant relationship between the independent variables and the dependent variable. According to the study, monitoring planning is the strongest determinant of project implementation followed by monitoring techniques, stakeholder participation, and monitoring tools, respectively. The timely completion of JKIA projects had been adversely affected by misappropriation of funds. There was inadequate participative monitoring and evaluation which had led to deficiencies in the quality of the finished projects. Due to frequent design changes the projects could not be completed within budget since these changes led to additional costs which had not been budgeted for, respectively. The study made a number of recommendations. The organisation should maintain effective project design processes since they have proven to be critical determinants of effective project planning. It should also intensify its use of stochastic techniques of monitoring of projects as well as the application of proper forecasting models to reinforce their monitoring techniques. The organisation should benchmark with other aviation institutions across the world to determine effective stakeholder engagement mechanisms so as to improve on this aspect of stakeholder participation.

Key Words: Monitoring Practices, Construction Projects, Project Implementation,

Background Information

The air transport industry plays a major role in world economic activity. One of the key elements to maintaining the vitality of civil aviation is to ensure safe, secure, efficient and environmentally sustainable operation at the global, regional and national levels (Mwikya & Mulwa, 2018). Air transport has become a necessity to ensure the efficient and cost effective movement of goods and services (Obwaya, 2020). Many industrial and commercial activities rely almost entirely on air transport for their existence (Foyle, 2007). It is also one of the fastest growing sectors of the world economy. According to the International Aviation Travel Association (IATA) Vision2050, over the past 40 years there has been a tenfold expansion in travel volumes and a 14 times expansion in freight, which compares to a 3 to 4 times growth of the world economy (Roelena &Klompstraa,2020).

After a series of modernization and expansion projects funded by the World Bank, Jomo Kenyatta International Airport stands ready to handle non-stop flights to and from the United States for the first time. Jomo Kenyatta International Airport passenger capacity increased to 7.5million from 2.5 million, boosting economic growth and creating thousands of jobs. Kisumu International Airport has also benefitted from World Bank support, making it the country's fourth international airport. Two International Development Association (IDA)-funded projects have contributed to the improvement of air transport in Kenya - the Northern Corridor Transport Improvement Project (NCTIP) and the Kenya Transport Sector Support Project (KTSSP). The construction of a modern terminal separating arriving and departing passengers has boosted airport security and has also raised the airport's annual capacity from 2.5 million to 7.5 million passengers in Kenya (RoK, 2012).

The need for the expansion and modernization of aviation projects was supported by African Development Bank (2018) who cited the increased passenger and cargo traffic, mitigation of congestion and planning for future growth as well as enhancing the competitiveness of the airport as justifiable reasons for undertaking the multimillion projects. The projects being undertaken seem to support these assertions as they are geared towards expanding parking apron, terminals, parking, aircraft pavements, landing systems, remote stands, hydrants and runaways according to the master plan (KAA, 2020).There are different projects running and being implemented at the different local and international airports. This study will be interested in major projects at the airports with a capitalization of over hundred millions and running for a period of above three months whose input is from at least two of the major stakeholders at the airport to assess the influence of project monitoring on implementation of these projects. With the exception of India most of the evaluations in South Asia are donor-driven. Nepal presented a venture on Strengthening the Monitoring and Evaluation System with the help of Japan to give preparing in M&E and enhance reference booklets, observing detailing records and sharing information and abilities.

Monitoring has been used globally over the last several decades as a tool in project management. Monitoring and evaluation has helped infrastructure projects to identify problems and their causes and suggest possible solutions to problems. However, infrastructure projects that do not have effective monitoring have failed. In this way, monitoring can have influence on project performance much as there is inadequate information on this (Shapiro, 2018). Project monitoring is an integral part of the project cycle and of good management practice (Olive, 2019). Olive (2019) observes that monitoring practice is fundamental if the project goals and objectives are to be achieved. Monitoring improves overall efficiency of project planning, management and implementation. According to UNDP (2018), the overall purpose of monitoring practice is the measurement and assessment of performance in order to more effectively manage the outcomes and outputs known as development

results. It helps improve performance and achieve results. Monitoring also enable organizations extract relevant information from past and ongoing activities that can be used as the basis for programmatic fine tuning, reorientation and future planning (UNDP, 2021). A study by Musomba (2018) on monitoring practice and project performance and implementation in Malaysia showed that project planning, implementation and controlling processes are the tools that advance its capability of planning, implementing, and controlling its project activities in the organization. It was established that project performance enhancements through planning, implementation and monitoring processes. Variable models used to identify how each stage is helpful in the process of managing project performance. To achieve this objective, information relating to different projects and models related to project planning, execution, control, and proposal of project performance explored; the findings showed project-planning processes contribute to the project performance (Derby, 2021).

After perceiving the major role that M& E plays in national economies, nations came up with agencies that were devoted to M & E. According to Lopez, Rivera, Lycia and Hwang(2019), South Africa and Colombia among others have reinforced their regulatory structures to expect regular scrutiny and assessment to ensure public dissemination of information. The nations of Spain, Chile, New Zealand, Australia and India are examples of countries that have adopted inventive M & E tools in order to strengthen the budgeting and planning of their activities. According to Lopez,etal.(2019)andMackay(2017),Chile has been successful in carrying out a broad and comprehensive government monitoring system aspects. The country has embarked on an ex ante cost-benefit analysis in all their public projects, gathers performance indicators in all public projects, and carries out a comprehensive management reporting annually for public disclosure purposes. Chile carried out a meticulous impact evaluation as well as a public spending review. Colombia, the other success story, employs quite a big number of various indicators, takes hard measures on flops and posts all accountability. In Australia, a formal evaluation planning essentially lists all major government programs that the ministry intend to evaluate on an annual basis. The relevant ministry must involve that of finance in these activities. Each programme is required to be evaluated at least once in a span of 5 years. In addition, in Australia, each ministry's project objectives are reviewed jointly by both ministry and treasury.

According to Lopezet al.,(2019) Uganda has had a number of successful monitored systems and initiatives. A case in point is the 1990sprogramme known as Public Expenditure Tracking Surveys (PETS). In partnership with the World Bank then, Uganda created the PETS programin 1990s a savehicletotracktheproportionoffundingflowingfromthecentralgovernmentdowntobasicschoolingins titutions. A survey conducted on the programme had earlier established that just a paltry 13 percent of the central government money did in actual fact trickle down to primary schools and that 20 percent of the teachers' salaries were unaccounted for. The stakeholders then mounted so much pressure that the government had to eventually take action. Given the poor track record of monitoring and implementation in Nigerian environment, the significance of sound monitoring cannot be over emphasized. Sound project planning has gained popularity as a distinct management concept used to drive change objectives in infrastructure projects and also the economic agenda of developing countries including Nigeria.Despite the shortfalls in funds available and the technical expertise to implement large infrastructure projects, tremendous achievements have been realized in the construction of infrastructure in Africa. Of note is the construction of the Addis-Djibouti High Speed Rail (ADHSR) and the Standard Gauge Railway (SGR) in Kenya (Gravito et al., 2017). This highlights the fact that with better organization, enabling regulatory framework and sound project planning can be made available to construct more infrastructure projects of this magnitude thus opening up the continent for trade.

In Ghana challenges identified with M&E incorporate institutional, operational and specialized limit imperatives; and divided and awkward data, especially at the segment level. There is requirement for sufficient ability to help and maintain powerful M&E and fortifying of existing M&E instruments its harmonization and viable coordination (Clear, 2012). M & E in Burundi is established in the Vision 2025 and great are developing in the landscape of restricted checking and in the cooperative energies that are being set up between various institutional structures in the legislature. In Kenya there are quality assurance and standards officers, who have one of their roles being monitoring and advising on standards in education based on all round aspects. Standard performance indicators for various areas, including sports, games, drama, music, science congress, scouting /girl guide, and academic performance environmental education health care and nutrition pupils' well are pupils provision and optimum use of available resources (RoK, 2020). Kenya Ministry of Education has well laid down monitoring and evaluation processes that guide the principals on the day to day running of the schools Republic of Kenya (2006). The evidence shows that Kenya mostly relies on traditional and informal control structure to fulfil their welfare agendas. Formal Monitoring systems as practiced in Kenya have not fully been incorporated in the Government projects control systems under M &E (Abdulkadir, 2019). Although project and program-based monitoring and evaluation have existed in Kenya since the 1980s, capacity and infrastructural constraints persist in the process of project implementation. Kenya's 2010 Constitution introduced M&E evolved governance structures, providing an opportunity to strengthen the country's Monitoring and evaluation while also posing a risk to its continued existence, particularly with regard to devolved units' flaccid' accountability mechanisms (John & Khilesh, 2018).

Statement of the Problem

he total projects cost was estimated at USD 259 million (including taxes), but the cost overruns over USD 65 has been reported due to delays in the completion of the projects. Kenya Airports Authority started upgrading terminals 1B and 1C in January (2021), a project that was expected to take a year to bring the two terminals at par with Terminal 1A. One year and eight months later, the upgrade is yet to be completed (EU-AITF TA, 2022). The Government of Kenya through Vision 2030 flagship programmes and projects embarked on expansion and modernisation of aviation facilities at the JKIA which attained a completion rate of 70 percent by the end of FY 2020/21 while a similar project at the Moi International Airport had attained a completion rate of 37.8 percent by the end of the same period (GoK, 2022). The fundamental question therefore, which calls for research, is whether project monitoring process is a missing factor in the implementation of the JKIA construction projects.

Biwott, Egesah and Ngeywo (2017) argued that M&E enables project managers to ensure the prudent utilisation of resources by keeping track of the progress of implementation, it also offers a platform for decision makers to formulate strategies for enhancing the sustainability of projects. According to Otieno (2019), projects need to establish appropriate M&E mechanisms that include a functional monitoring system that offers timely information in order to facilitate remedial action, and suitable monitoring and evaluation tools. Kaberia (2019) opined that when organisations prioritise M&E by investing in upskilling their project staff in M&E and engaging in participative M&E, the projects run by these organisations perform optimally since there is a holistic appreciation of the activities undertaken during implementation and any deviations are immediately addressed accordingly. Monitoring process in infrastructural projects are crucial in identifying the organization's achievements and effectiveness of its projects, the practices account for greater transparency and accountability (World Bank, 2016).

However, the aforementioned notwithstanding projects continue to encounter a number of problems in the institutionalisation of monitoring processes. Owing to their unique nature, aviation

infrastructure construction projects have been faced by numerous challenges which have impacted negatively on project success including delays in completion of the projects as well as constraints in cost, time and quality of their deliverables (Omondi & Kimutai, 2018). Mwikya and Mulwa (2022) reported that while the aim of the Jomo Kenyatta International Airport (JKIA) projects comprised the expansion and rehabilitation of the passenger terminal facilities as well as associated aprons, taxiways and access roads, the projects failed to meet the delivery schedules and experienced cost overruns (World Bank, 2022).

Empirically, some studies that have been conducted on project monitoring and project implementation lack sufficient insights pertaining to the project monitoring process. Muchelule (2018) focused on the influence of monitoring practices on projects performance of Kenya State Corporations. The study findings revealed that monitoring planning, tools and techniques influence performance of the projects. Onyango (2019) examined the efficacy of monitoring and evaluation framework on implementation of development projects in Machakos and Embu Counties, Kenya. The study results indicated there was a positive association between project monitoring process and implementation of the projects. Ngâ and Kisimbii (2020) investigated the influence of M&E structure on the performance of projects at Kenya Ports Authority. The study results revealed a positive and significant relationship between project monitoring planning and performance of the projects implemented by Kenya Ports Authority. Therefore, from the aforementioned studies, there are very few studies that have tried to show the specific link between project monitoring process and project implementation from a Kenyan perspective.

This clearly depicts a need to bridge the knowledge gap in project monitoring process in the Kenya context. It is with this in mind that the current study seeks to establish how project monitoring process influences implementation of Jomo Kenyatta International Airport Construction Projects in Kenya. The insights from this study will provide fresh insights on how the monitoring process influences implementation of projects particularly those in the aviation industry. Indeed, the unique variables covered in this study will provide a reference point for researchers and scholars to expand the scope and covered different contexts on the correlation between the monitoring process and the implementation of projects.

Research Objectives

1. To analyse the influence of monitoring planning on implementation of airports construction projects in Kenya.
2. To assess the influence of monitoring tools on implementation of airports construction projects in Kenya.
3. To determine the influence of monitoring techniques on implementation of airports construction projects in Kenya.
4. To assess the influence of stakeholder participation implementation of airports construction projects in Kenya.

Literature Review

Theoretical Review

The study is achored to the theory of triple constraints is derived from the very definition of a project which states that a project is a temporary group activity which is designed to produce a desired result or service or a unique product (PMI, 2015).The theory of the triple constraint depicts that the project triple constraint management is an iron triangle of cost, scope, quality and time which bounds the project universe which must be achieved (Dobson, 2004). Construction projects bring complications in project management, needs and constraints and therefore for effective project management,

constraints have to be managed. Projects take place inside organizations where, there is a finite amount of resources with which to accomplish infinite tasks. This results in scarcity and the triple constraints; a deadline, a budget, and a minimum acceptable level of performance (Dobson, 2004)

The theory of the triple constraints is anchored on the project management with an understanding that a project should be a balance of the three interdependent project constraints (time, scope and cost) to achieve the desirable results. The cause and effect of new or changing triple constraint requirements are constantly negotiated during all project practices, and the three key triple constraint relationships signify that at least one of the triple constraint variables must be constrained (Wayngaad, Pretorius & Pretorius, 2012).Implying that most of adopted project management strategies to enhance project performance like planning process, scheduling process, a methodology for introducing work that actually leads to increased capacity, execution processes that provide excellent project control, visibility and decision support and work behaviours that are more conducive to good project performance (Jacob &McClelland, Jr,2001).The theory enhance the understanding of the project manager contribution deliverables per the clients satisfactions. Further, the theory requires continuous improvement to sustain quality in the project dimensions (Nyakundi, 2015).

While, triple constraints criteria in project management have been accepted as a measure of project success. Due to uncertainty and involvement of three different and opposing factors time, cost, and quality, most projects are difficult to manage (Jacob & McClelland Jr, 2001). Every one of the three limitations have their individual impacts on project execution yet since these components have some relationship, one imperative bear an impact on the other two, in the long run influencing ventures expectations (Hamid, et al., 2012).This theory from organizational perspectives may work well or fail hence leading to delays if it isn't well embraced. For the health infrastructure construction projects, the time and cost overruns delays are a common problem not only with an immeasurable cost to government and public but also with debilitating effects on the contracting parties (Ondari & Gekara, 2013). This theory will guide the study to establish the relationship between project monitoring and implementation of aviation infrastructural construction projects in Kenya.This theory is consistent with independent variables one, two and three (monitoring planning, monitoring tools and monitoring techniques) since it is during the monitoring process that constraints related to time, cost and quality can be ascertained them remedial action taken in a timely manner.

Conceptual Model and Hypothesis

According to Chepkwei (2019), when conducting a study, a conceptual framework should be developed to show the relationship between the independent variables (monitoring planning, tools, techniques and stakeholder participation) and dependent variable (implementation of airport construction projects). Out of the literature reviewed various variable are suggested, but in this study the variables are monitoring planning (effectiveness of the design process, extensiveness of the design review and the level of participation in the monitoring plans), monitoring tools (appropriateness of the baselines, accuracy of metrics and checklists; timeliness of reports), monitoring techniques (cost benefit analysis, variances and appraisals), stakeholder participation in the development of project includes; level of involvement in needs analysis, level of ownership in setting objectives and adequacy of resource allocation. The implementation of aviation infrastructural projects (completion within time, budget, quality and stakeholder satisfaction).This is illustrated in Figure 1.

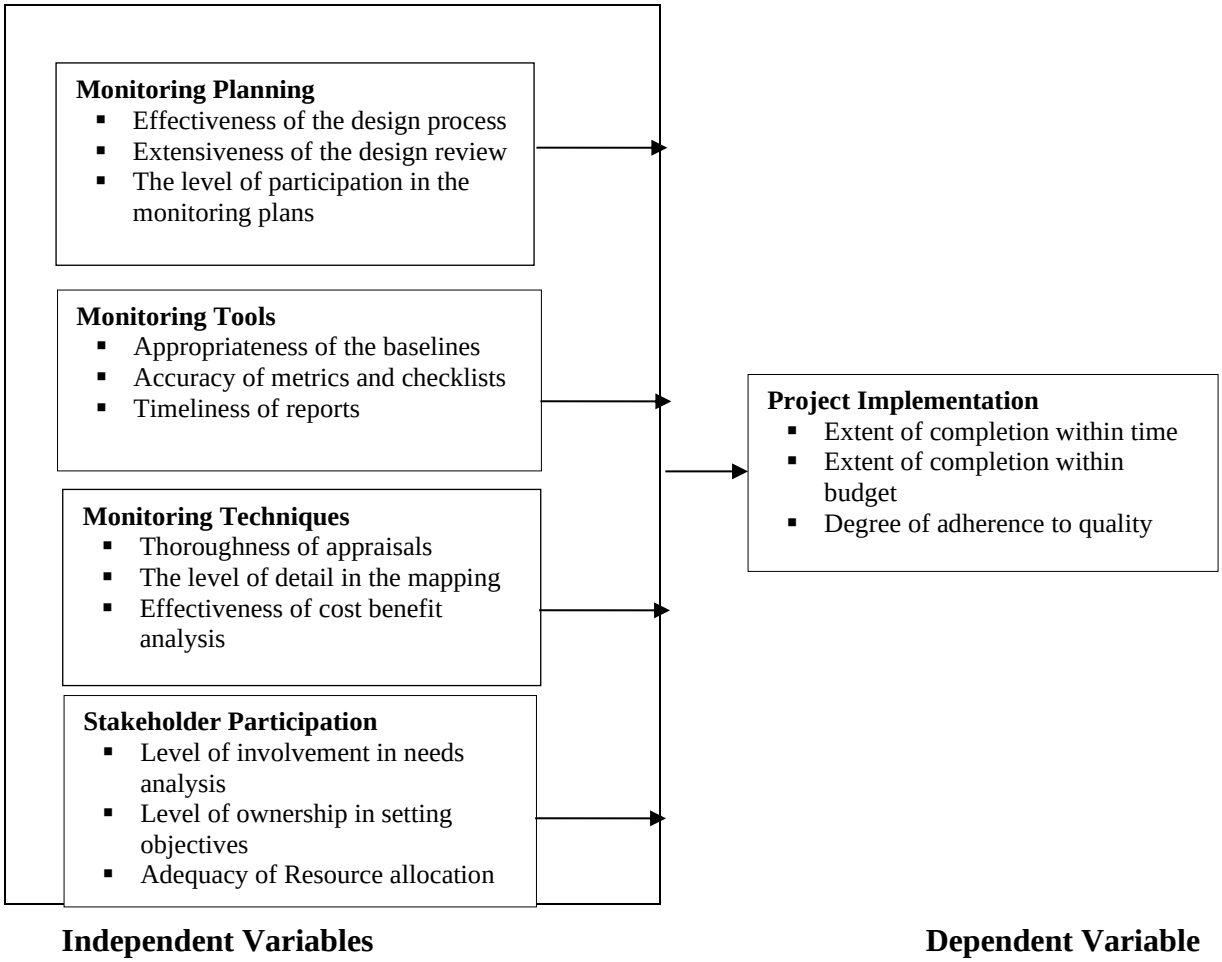

Figure 1: Conceptual Framework

Empirical Review

A study by Hussein (2020) on the influence of monitoring practices on projects performance in Kenya established that owing to the integration of adequate stakeholder participation mechanisms, the projects had benefited from user inputs during the monitoring planning design processes. These participation mechanisms enabled the use of comparative assessments of the available funds by the stakeholders prior to the preparation of implementation budgets. On the other hand, a study by Muhammad and Johar (2018) on project performance, with the variables, Project Planning, Implementation and Controlling Processes in Malaysia College of Computer Sciences and Information, Aljouf University, noted project management offers an organization with control tools that advance its capability of planning, implementing, and controlling its project activities by ensuring the preparation of design intent or ideology in the design process.

Besides that, a study that was conducted by Chandurkar, Dutt and Singh (2017) highlighted that monitoring and evaluation was the major driving factor in development projects since it enabled site analysis from the design and context perspective. The objective of this study was to determine the effect of monitoring and evaluation on development projects. However, the recommendation that was given in this study was that the management should provide full support and should fully engage themselves in the monitoring and evaluation process as this will help them in coming up with sound and well informed decisions. Ndung'u (2018) studied the factors influencing the implementation of M&E practices in county government construction projects in Kenya and affirmed that these projects

ensured the involved of consultants during M&E planning initiatives by considering their views in the monitoring design reviews. The study concluded that such rigorous measures had positively impacted the level of M&E data utilisation, however, the frequency of monitoring activities was constrained by low recruitment of M&E staff.

A study by Mwenda, Nyawira, Lillian and Gakuu (2021) on the linkage between M&E and the quality of housing infrastructure projects in Nairobi County, Kenya determined that the project had integrated stringent M&E planning practices that focused on undertaking comprehensive monitoring design reviews which committed to ensuring the constructability and maintenance of related reviews from similar projects. Consequently, the study concluded that these projects were compliant with international accepted ethical standards of project M&E. Atwa and Mudi (2019) examined the influence of M&E planning on the performance of water supply projects in Kakamega County, Kenya and posited that the incorporation of stakeholder participatory mechanisms in the M&E planning practices had ensured the adequate involvement of suppliers who were able to make improvisations upon necessity which enhanced the availability of material inputs during the implementation of the projects.

Onyango (2015) examined the influence of M&E tools on the program performance of selected NGOs in Nairobi County. The study found out that logical framework is an invaluable tool for managing program, result framework is a vital tool for managing program performance, and earned value management is a crucial tool for managing program performance with 77% asserting its significance and a correlation coefficient of 0.832. Generally, the study revealed that 73% of the respondents agreed that M&E tools influenced the program performance. More specifically, the use of project management information systems (PMIS) during monitoring had positively impacted the performance of these projects. Muchelule (2018) investigated the influence of monitoring practices on project performance of Kenya State Corporations. Specifically, seeking whether monitoring practices planning, tools, techniques and its adoption has an influence on project performance of Kenya state corporations. The study adopted descriptive research design method as well as positivism research philosophy; with a target population of 187 state corporations. Simple random sampling was used to select 65 state corporations who form the sample size which forms 30% of the population. The study found out that monitoring planning and tools such as logical frameworks contributes to organization performance through the enhancement of clarity in the definition of planned outputs.

Walubengo (2019) studied the influence of the application of project design tools, managers' competencies on the performance of community based projects in Bungoma County, Kenya and opined that the use of project design tools such as network diagrams and Gantt charts had a statistically significant relationship with the performance of these projects since they improved the scheduling of project activities. However, the study also found that the use of these project design tools had been hampered by the lack of adequate allocation of funds towards M&E activities owing to reduction in donor support. In a study on the influence of project M&E activities on the performance of early childhood development infrastructure in Trans Nzoia West Sub County, Kenya, Tai (2017) established that the projects had successfully ensured the implementation of results-based M&E practices which incorporated the use of such tools as baselines for monitoring project activities. This notwithstanding, the study recommended that more needed to be done in the integration of such practices such as the recruitment of more skilled managers.

Safari and Kisimbii (2020) conducted a study on the influence of M&E on the performance of county government funded projects in Kwale County and determined that these projects had adopted appropriate M&E practices which emphasized the use of the right M&E tools as evidenced by the fact that baselines and logical frameworks were used for change of requests and project mapping of project activities. These tools were supported by the integration of M&E information systems which

enhanced the efficiency and effectiveness of M&E tools.

Muchelule (2018) investigated the influence of monitoring techniques on project performance of Kenyan State Corporations. Simple random sampling was used to select 65 state corporations which form the sample size. The study found that there a significantly positive correlation between project monitoring techniques and project performance and that one of the most critical monitoring techniques is the conduct of monthly project appraisals. Alhyari, Alazab, Venkatraman, Alazab and Alazabab (2013) discovered that the use of suitable techniques in forecasting project activities such as the adjusted scorecard method fitted exceptionally well with observing and measuring the execution of e-government in Jordan, and furthermore in assessing their achievement in IT anticipate ventures. Logical framework (Log frame) is a standout amongst the most widely recognized procedures utilized as a part of venture administration for both arranging and observing of activities. Log an edge grid is an instrument that is pertinent for all associations both government and nongovernmental that are occupied with improvement exercises (Middleton, 2005; Martinez, 2011).

John (2020) assessed the impact of monitoring and evaluation on project performance and found that World Vision Rwanda had integrated all the activities of improving these techniques of which help to better the project performance including the use of stochastic techniques in conducting monitoring. These techniques ensured the improvement of the accuracy and efficiency of data analysis from monitoring activities and provided more comprehensive information for decision making during project implementation. Njeru and Kirui (2022) studied the influence of M&E practices on the performance of Kenya National Highway Authority road construction projects in Nairobi City County, Kenya and affirmed that the projects had benefitted from the adequate allocation of funds for M&E which had ensured the proper handling and documentation of change requests as result of comprehensive baseline surveys.

A study by Chepkemoi (2020) on the influence of project management skills on performance of road construction projects in Machakos County, Kenya established that the application of suitable project management skills such as variance analysis of performance, scheduling and costing project activities had positively impacted the performance of these projects. This was facilitated by the adequate allocation of funds for the training of County staff in modern M&E techniques.

A study by Njuki, Kaaria, Chitsike and Sanginga (2015) on Participatory Monitoring and Evaluation (PM&E) for stakeholder engagement, evaluation of project impacts, and for institutional and community learning and change enabling rural innovation in Africa - CIAT-Africa, Uganda, investigating the role of stakeholders and their contribution in project implementation. The study suggested that to improve the delivery of outputs, outcomes, and the results explained the need to integrate the local indicators with project level indicators so as to provide a more holistic view of the project benefits. This process is facilitated by engaging with different stakeholders who are able to participate in the development of project plans. A different study by Kavindu (2018) on the influence of project management committee factors on the performance of water projects in Kenya found that as a result of the enrolment of committee members in training and skilling workshops, they had been able to integrate greater transparency in in committee operations which is important for project success and overall effectiveness. Indeed, this was reinforced by the introduction of consistent consultative forums with intended project beneficiaries so as to incorporate feedback from them.

Kihuha (2018) studied the influence of the practices of monitoring and evaluation on the performance of UNEP GEF Kenyan chapter projects and found low-level application of stakeholder analysis or feedback and communication strategy that reflects community needs or people's interest in the implementation or enable stakeholders to influence project acceptance based on their needs. This led to the poor contribution of resources by community stakeholders to the implementation of the project. A study by Mwanza, Namusonge and Makokha (2020) on the influence of stakeholders' practices on the performance of construction projects in Kakamega County, Kenya determined that the projects

had established a clear stakeholder engagement strategy that prioritised the consultation of stakeholders on the project resources needed so as to ensure their buy-in and congruence amongst all stakeholders on all decisions undertaken by the project management team.

Mandala (2018) conducted a study on the influence of stakeholders' involvement in project management on the performance of road construction projects in Kenya and ascertained that the projects had ensured the involvement of stakeholders in decisions related to project identification, project initiation, project planning and project implementation. However, the study found that there was only a limited involvement of stakeholders in resource planning, assignment and allocation of project resources, and the control of the projects.

A study by Mutai (2017) studied determinants of completion rate of county government funded project in Kenya and found that the most critical factors that influence the timely completion of county projects are: the availability of funds, skilled manpower, and the effectiveness of project plans. However, the study established that the completion of many county projects had been adversely affected by misappropriation of funds, irregular disbursement of funds, and inadequate support from project sponsors. Karuingi (2014) studied the determinants of timely completion of projects in Kenya and posited that despite the well acknowledged importance of project planning, the projects had experienced problems with timely completion owing to the lack of adoption of planning tools; additionally those projects whose implementation was done during the rainy season experienced delays owing to unfavourable and disruptive weather; and finally, the lack of adequate involvement of stakeholders.

Kipchirchir (2022) examined the influence of resource management on performance of road construction projects in Kenya and explained that owing to bureaucracies experienced due to the fact that funds needed to be approved by the national Government before disbursement, delays were experienced in the availability of funds and poor monitoring evaluation led to deficient management of the funds which invariably caused some of the projects to exceed the projected budgets. In a study on the influence of cost management on the implementation of construction projects in Elgeyo Marakwet County, Kenya, Onyango and Kirui (2021) opined that due to frequent design changes the projects could not be completed within budget since these changes led to additional costs which had not been budgeted for. Indeed, these frequency design changes were an indicator of technical design deficiencies on the part of the technical staff of the project and called for the recruitment of more competent staff.

Momanyi and Kamau (2020) affirmed that contractor's management practices had influenced the performance of housing projects in Kisii County, Kenya through collusion with unscrupulous government officials who decided to take bribes instead of enforcing compliance to industrial standards thereby leading to the collapse of many projects. More specifically, the study found that poor quality was caused by inadequate worker trainings, and poor pre-task planning for safety. Mimiti and Moronge (2018) added that the implementation of county government projects in Nakuru County, Kenya had been adversely affected by inadequate participative monitoring and evaluation which had led to deficiencies in the quality of the finished projects since timely corrective actions were not taken owing to the lack of knowledge regarding gaps in performance.

Research Gap

Majority of previous empirical studies on project monitoring and implementation of infrastructure projects have been conducted in developed or developing countries of Asia and Latin America (Meltem & Konrad, 2014; Schwedes, Riedel, & Dziekan, 2017; Angelopoulos, Cowx, & Buijse, 2017). There is relatively small body of work and attempts to systematically examine the evidence on the impact of project monitoring on implementation of aviation infrastructure projects in Sub-Saharan Africa. Consequently, the link between project monitoring and implementation of

infrastructural construction projects in the context of Sub-Saharan Africa is scarcely explored. Only a limited number of studies have so far examined the impact of dynamic infrastructure projects in the context of Sub-Saharan Africa (Ika & Saint-Macary, 2014; Okereke, 2017; Han & Webber, 2020). The near absence of research in Africa in this area raises a question as to whether project monitoring influences implementation of aviation infrastructure projects in Africa. Empirical findings in developed countries may not be generalized in developing countries due to different cultural and political context. Further, there is also the need to test if dynamic project monitoring frameworks, models or theories developed in western countries are applicable in poor African countries suffering high unemployment rates. Moreover, it has been argued that projects, people's attitudes, beliefs and values vary across countries, cultures and continents. Hence, this study to bridge the knowledge gap by establishing the impact of project monitoring practices on implementation of aviation infrastructural construction projects in a less developed, non-Western context like the Kenyan context

Research Methodology

The study adopted a descriptive research design to obtain information for the study on the influence of project monitoring practices on implementation of airport projects in Kenya.The target population for the study was 305 (consultants, contractors and project team) implementing aviation infrastructural projects in Kenya. The unit of analysis was Jomo Kenyatta International Airport construction projects in Kenya. The study unit of observation was the project managers (supervisors and engineers) of the health infrastructure construction projects. In this study the sample size was determined by the use Slovins formula recommended by Saldana (2015) when the population is less than 1000. The formula is stated as follows;

$$n = \frac{N}{1+N(\partial)^2}$$

Where: N represents target population; n represents sample size; ∂ represents significance level (0.05), at 95% confidence level. The study adopted stratified random sampling technique to collect data from the respondents. .

Results and Discussion

A multiple regression analysis was conducted to investigate the joint causal relationship between the independent (monitoring practices) and dependent variables (implementation of airports construction projects).

Table 1: Model Summary (Combined Effect)

R	R-Square	Adjusted R Square	Std. Error Watson of the Estimate	Durbin-
.891	.794	.778	5.2324	1.2145

In Table 1, the correlation coefficient (R) of 0.891 shows that there is a positive joint correlation between project planning (monitoring planning, techniques, tools and stakeholder participation) with implementation of airports construction projects. From the study findings, it is notable is notable that correlation determination of by R^2 value (0.794). The study results imply that stakeholder, scope, resource, risk planning jointly accounted for 79.40% of the implementation of airports construction projects as represented by the R^2. This therefore means that other factors not studied in this research contribute 20.60% to implementation of airports construction projects. This implies that these

variables are very significant and need to be factored to implementation of airports construction projects.

Table 2: ANOVA Statistics (Combined Effect)

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	784.373	4	196.093	133.943	.000
	Residual	203.503	139	1.464		
	Total	987.876	143			

Further, the analysis of variance was used to examine whether the regression model was a good fit for the data. The F-critical (4, 139) was 2.46 while the F-calculated was 133.943 as shown in Table 2. This shows that F-calculated was greater than the F-critical and hence linear relationship between the project monitoring practices and implementation of airports construction projects. In addition, the p-value was 0.000, which was less than the significance level (0.05). Therefore, the model can be considered to be a good fit for the data and hence it is appropriate in predicting the influence of the four independent variables (monitoring planning, techniques, tools and stakeholder participation) on the dependent variable (implementation of airports construction projects).

Table 3: Regression Coefficient Results (Combined Effect)

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value.
		B	Std. Error	B		
1	(Constant)	5.654	1.234		4.581	.000
	M. Planning	.502	.109	.565	4.605	.004
	M. Techniques	.418	.132	.467	3.167	.008
	M. Tools	.589	.098	.625	6.009	.000
	Stakeholder Participation	.523	.101	.587	5.178	.002

Further, the study ran the procedure of obtaining the regression coefficients, and the results were as shown on the Table 3. The coefficients or beta weights for each variable allows the researcher to relative importance comparatively of the project monitoring practices. In this study the unstandardized coefficients and standardized coefficients are given for the multiple regression equations. However, discussions are based on the unstandardized coefficients. The Multiple regression model equation would be ($\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$) becomes: $Y = 5.654 + 0.502X_1 + 0.418X_2 + 0.589X_3 + 0.523X_4$. This indicates that implementation of airports construction projects = 5.654 + 0.502 (Monitoring planning) + 0.418(Monitoring techniques) + 0.589(Monitoring tools) + 0.523(Stakeholder participation). According to the regression equation established, taking all factors into account monitoring planning, techniques, tools and stakeholder participation constant at zero, implementation of airports construction projects was 5.654. Findings in Table 3 showed that monitoring planning had coefficients of estimate which was significant basing on $\beta_1 = 0.502$ (p-value = 0.004 which is less than $\alpha = 0.05$). Also, the influence of monitoring planning is more than the influence attributed to the error and supported by the t values whereby $t_{cal} = 4.605 > t_{critical} = 1.96$ at a 5 percent level of significance, thus we conclude that monitoring planning significantly influence implementation of airports construction projects. The study findings are in agreement with the literature review by Williams and Johnson (2014) that monitoring planning plays an important role in the implementation of construction projects. In addition, the findings in Table 3 indicates that monitoring techniques had coefficients of estimate which was significant basing on $\beta_2 = 0.418$ (p-value = 0.008 which is less than $\alpha = 0.05$). Also, the effect of monitoring techniques is more than the

effect attributed to the error and supported by the t values whereby $t\ cal = 3.167 > t\ critical = 1.96$ at a 5 percent level of significance, thus we conclude that monitoring techniques significantly influence implementation of airports construction projects. The study findings are in agreement with the findings by Halpin (2016) that the main objective of monitoring techniques is to produce time tables for individual activities following the plan. There are numerous possible plans available for any given project hence evolving different schedules.

Further, the findings in Table 3 indicates that monitoring tools had coefficients of estimate which was significant basing on $\beta_3 = 0.589$ (p-value = 0.000 which is less than $\alpha = 0.05$). Also, the influence of monitoring tools is more than the effect attributed to the error and supported by the t values whereby $t\ cal = 6.009 > t\ critical = 1.96$ at a 5 percent level of significance, thus we conclude that monitoring tools significantly influence implementation of airports construction projects. The findings in Table 3 indicates that stakeholder participation had coefficients of estimate which was significant basing on $\beta_4 = 0.523$(p-value = 0.002 which is less than $\alpha = 0.05$). Also, the effect of stakeholder participation is more than the effect attributed to the error and supported by the t values whereby $t\ cal = 5.178 > t\ critical = 1.96$ at a 5 percent level of significance, thus we conclude that stakeholder participation significantly implementation of airports construction projects. The study results are in tandem with the findings by Mulwa (2012) that the stakeholder participation projects rely on people and success is determined by their involvement and cooperation. Several projects have collapsed due to lack of significant stakeholder participation involving people and hence project management gaps emerge and this threatens the survival and success of these projects.

Conclusion

The main purpose of this study was to examine the relationship between project monitoring practices and implementation of airport construction projects in Kenya. The results showed that monitoring planning, tools, techniques and stakeholder participation had a positive and statistically significant influence implementation of airport construction projects in Kenya. The study recommends that there is need for the management of airports to embrace monitoring planning is key in determining the appropriate strategies for the achievement of predefined project objectives. The employees need to be well trained on effective monitoring planning practices and network diagrams and frameworks need to be made use of scheduling organization construction projects.The well-executed monitoring plan will contribute to both project outcomes and international standards of doing things as required in the airport construction projects. The study recommends that managers of the airports require to enhance appropriate monitoring techniques that are instrumental in enhancing project implementation success. There is, therefore, need to make thorough appraisals and cost benefit analysis to develop reference points on what needs to be accomplished and what needs to be done to accomplish the said plans. The management also make use of forecasting to determine the type of projects to pursue and assess the potential of the ongoing construction projects. The study recommends that the project managers of the airport construction projects to have appropriate monitoring tools for the successful implementation of the projects. The monitoring tools for all projects will improve easy storage, retrieval and analysis of project data. The tools will help the management of the projects to track and measure progress towards achievement of the goals, allowing one to make data-driven decisions and take action where needed most.The study recommends that there is need for management of airports to enhance stakeholder participation to improve implementation of projects. The study recommended that stakeholders need to be involved in the implementation process of a project. The stakeholder holders need to be consulted before making any changes to the project management. The government and other stakeholders should make sure all the stakeholders are involved in the decision-making process of airport construction projects.

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