

PROJECT MANAGEMENT CAPABILITIES AND PERFORMANCE OF KENYA AIRPORTS AUTHORITY EXPANSION PROJECTS: A CASE OF JOMO KENYATTA INTERNATIONAL AIRPORT

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Abstract: The study investigated the effect of project management capabilities on project outcomes at Kenya airport authority. The explicit objectives were to examine the influence of planning, management commitment, resource allocation and monitoring and evaluation on project results at Kenya Airports Authority. The resource-based theory, contingency theory and stakeholder theory were selected to found the basis of the research. The study was based on the primary data majorly from the closed-ended questions. The study made sure that the reliability and validity of research instruments were ascertained. Data analysis involved inferential (regression) and descriptive analysis. The study concluded that management commitment, resource allocation, monitoring and evaluation and project planning had significant effect on performance of expansion projects at Kenya Airport Authority. The study recommends that KAA should ensure the effective an efficient mobilization and distribution of resources which cut across financial resources, human resources, technological resources and physical resources. The study further recommends that planning policies should be adhered to and also efficient contingency plan be put in place as these ensured greater performance of expansion projects at Kenya Airport Authority.

Keywords: Management Commitment, Resource Allocation, Monitoring and Evaluation, Project Planning, Project Performance.

1. INTRODUCTION

1.1 Background of the Study

A project is a short-medium term undertaking carried out cooperatively by individuals with a goal of coming up with a distinct service or product (Project Management Institute, 2010). Projects vary from operations due to the fact that operations are repetitive and continuous in nature where projects are temporary (Kerzner, 2013). Furthermore, operations deliver similar outcome over time while the outcome of projects are unique in nature (Makori, 2011). If its results are to be delivered, resources are required. Project execution is mostly based on comprehensive plan, which examines the factors externally alongside potential constraints (Wambugu, 2013).

Project Management Solutions (2011) indicates that thirty seven percent of projects do not succeed. Other researchers view project malfunction rates as higher than that (Morris, 2008). Morris (2008) observes that between sixty and eighty

two percent of projects do not succeed. With regards to mega-projects, Cantarelli, Buhl and Flyvbjerg (2012) examined a data set comprised of eight hundred and six projects (energy and transportation) worldwide and discovered that an average cost stood at thirty six percent with heterogeneous performance. Besides, upon their completion, there are fewer benefits that accrue from the project in comparison with the expectations. In spite of this, there are many successful projects as well for instance the Beneluxlijn extension of the Rotterdam metro network (Mendel, 2012) completed before the scheduled time and within budget.

Project performance indicators which can be operationalized tend to be unambiguous and link with on time delivery and specification of budget (Homthong & Moungrnoi, 2016). Since project failure is viewed as prevalent, much emphasis has been thrown towards identification of factors associated with a no success or with its likely inverse, success. Project performance was assessed using indicators such as project timeliness, project cost, project quality, project schedule and user satisfaction.

The transport and infrastructure are anticipated to steer Kenya's economy to a middle-income level as outlined in Vision 2030. KAA is tasked in the vision 2030 towards ensuring that Kenya becomes the aviation hub in the African region with an annual capacity of 45 million passengers by 2030. To achieve this, the MTP II targets the implementation of the following key projects: Construction of Green Field Terminal; Construction of terminal 1A departures at JKIA; Construction of terminal 1A arrivals at JKIA, Second runway alongside other JKIA facilities; enhancement of airside and terminal capability at Kisumu International Airport; Rehabilitation of the existing runway at JKIA; enhancement of support and safety operations at Moi Airport; and Rehabilitation and maintenance of Airstrips.

Various projects are already being implemented at JKIA, others are already running. This study focused on the main projects at JKIA whose capitalization is at least 500 million and with a period of more than 3 months with an input of 2 or more stakeholders at the airport to evaluate the role of resulting conflicts (Omondi & Kimutai, 2018). Notable projects include the establishment of arrival facility that is permanent to serve Terminal 1A building with multi-story car park to handle JKIA's international arrivals, upgrade of landing system, runway capacity and pavement of aircraft rehabilitation and installation of a Baggage Handling System (BHS) at the parking garage as a result of a fire incident.

1.2 Statement of the Problem

Kenya Airport Authority (KAA) is the only institution in Kenya mandated by the laws of Kenya to manage aerodromes. In line with this, KAA over the years has carried out various projects which vary in scope ranging from contract price of Kshs. 10M to Kshs. 4.8B. The projects are implemented by various project implementation teams and these projects had varying project successes. Implementation of projects at JKIA recently past has been a blend of debacle, national shame, failure and doomed projections of associates and a riddle not many people comprehend (Omondi & Kimutai, 2018).

Due to the crucial role performed by Jomo Kenyatta International Airport which contributes about 10 percent of the national economy, the expansion and modernization of JKIA is a key project under the Vision 2030 of Kenya and is a long-term national development plan (KAA, 2016). However, there were projects that faced challenges which subsequently affected the success of the program. Plans of completing the second run way project at Jomo Kenyatta International Airport has not come to fruition despite large amount of money being spent. Due to projects cancellation and 2013 fire tragedy, KAA has not managed to put in place the expansion of the airport as well as plans for modernization as outlined in the year 2011 (GOK, 2014; KAA, 2016)

There are many factors, which could lead to success or failure of a given project. Past literature such as Chege (2011), Machuki (2011), Orora (2011), Ondari and Gekara (2013) and Mungai (2017) found that causes for project failures or successes were attributed to factors involving project management, top management commitment, monitoring and evaluation, resource allocation among others. The current study looked to investigate the effect of project management capabilities on performance of Kenya Airport Authority expansion projects. The research specifically sought to establish the influence of management commitment, resource allocation and monitoring, evaluation on performance of Kenya Airports Authority expansion projects.

1.3 Objectives of the Study

1.3.1 General Objectives

The study reviewed the association of project management capabilities and performance of Kenya airports authority expansion projects.

1.3.2 Specific Objectives

Specifically, the study aimed to;

- i) To examine how management commitment affects performance of expansion plans at Kenya Airport Authority.
- ii) To determine the effect of resource allocation on performance of expansion projects at Kenya Airport Authority.
- iii) To establish the effect of monitoring and evaluation on performance of expansion projects at Kenya Airport Authority.
- iv) To assess how project planning affects performance of expansion projects at Kenya Airport Authority.

1.4 Research Questions

The questions included:

- i) What is the effect of management commitment effect on performance of expansion projects at Kenya Airport Authority?
- ii) What is the effect of resource allocation on performance of expansion projects at Kenya Airport Authority?
- iii) What is the effect of monitoring and evaluation on performance of expansion projects at Kenya Airport Authority?
- iv) What is the effect of project planning on performance of expansion projects at Kenya Airport Authority?

2. THEORETICAL REVIEW OF LITERATURE

Resource Based Theory was propounded by Barney (1991). The RBV of the firm rests on the notion that competitive gain and ultimately performance is dependent on previously developed organizational resources (Wernefelt, 1984). It is argued that with the commonalities of the dynamic capabilities from the dimension of the main features, they go against the resource-based view supposition of relentless heterogeneity across firms. The relationship between resource allocation and project performance is supported by the concepts of this theory. The better the resource allocation the more enhanced the projects' performance.

Contingency Theory was first proposed by Fielder (1960). It is a popular approach in the behavior of organizations where an exegesis is given as to how the functioning and design of an organization is contingent on culture, technology and outside environment. Rather, the effectiveness of an organization is contingent on a balance between volatility in the environment, technology, size, features as well as its system of information (Njeri, 2014). This presumption states that "the design and use of control systems is contingent upon the context of the organizational setting in which these controls operate," (Fisher, 2010). Thus, the suggestion of this concept indicates that the use and selection of a control system of management is dependent on factors that are internal and external. It's apparent therefore that structure, environment, national culture and size affect management control system.

Stakeholder Theory was introduced by Freeman (1984) where he observed that organizations have stakeholders thus outlined the characteristics of stakeholder concept. This concept has been viewed as a powerful way of comprehending the firm in its environment. The proposition is based on the idea that groups or person with genuine interests participate in a business with an ultimate goal of getting benefits and that there is no priority preset for one interest above the other (Donaldson and Preston, 2010). Stakeholder Theory supports the variable project performance, as it is a function of the interests of various stakeholders.

2.1 Empirical Review of literature

2.1.1 Management Commitment and Project Performance

Chege (2011) also did an empirical analysis on the factors that dictate the performance of projects at the Nairobi City Water and Sewerage Company (NCWSC). The independent variables were leadership, organisational resources, management participation, organisational structure, culture, politics and technology and the dependent variables Project performance at NCWSC. The findings reveal that management participation is key in ensuring the performance of projects. Unlike this study which focused on Nairobi City Water and Sewerage Company, the ongoing study is going to be based on Kenya Airports Authority (KAA).

Ondari and Gekara (2013) did a research on the factors impacting on the successful conclusion of Kenyan roads projects. The research was guided by multiple regression analysis and the findings reveal that coordination from the management is significant in ensuring timely completion of roads projects in the country. The current study focused on project performance at KAA.

Lecomber (2013) scrutinized on the key factors affecting the success of project implementation. The study indicated that the initiation phase of projects is vital to its success. The study concluded that planning and communication by the management influences the success of project implementation. The study was however based on correlation analysis which only depicts the strength and direction of association between research variables. This study applied multiple regression analysis in addition to correlation analysis.

Castillo, Alarcón, and Pellicer, (2018) investigated how organizational characteristics affect outcomes of Construction Projects Using Corporate Social Networks. The results proved that a relation between project management commitment and KPIs of construction project performance exists. The study however centered on Chilean construction firms. This study would focus on expansion projects of JKIA. Due to the different socio-cultural conditions of countries, findings of studies for other countries may not be directly applicable to the Kenyan context.

2.1.2 Resource Allocation and Project Performance

Machuki (2011) conducted an investigation of the factors affecting the projects performance at Kenyan local Authorities: the case of Kisii Municipal Council and recognized the factors as; insufficient physical resource allocation. The study however was based on the case of Kisii Municipal Council whereas the current study focused on KAA thereby addressing the contextual gaps.

Orora (2011) sought factors affecting project performance at Gusii Mwalimu SACCO. Organizational factors such as technological capability, management commitment, organizational culture and organizational resources were the main research variables. It was noted that technological setup has a significant effect in predicting the performance of projects. Conversely, the examination was centered on Gusii Mwalimu SACCO and not on the Kenya Airports Authority.

Garbharran, Govender and Msani (2012) carried out a study on the analytical success factors affecting project success in the construction industry in Durban South Africa. Using regression analysis, the study found out that the allocation of financial resources has a crucial effect on project success. However, the study was based on project implementation in the construction industry in Durban South Africa. This study was based on project performance at KAA, Kenya.

Mungai (2017) carried out an investigation on effect of institutional factors on implementation of projects while focusing on United Nations Human Settlements Programme in Somalia. The study focused on organizational structures and organizational resources as the independent variables which were denoted by institutional factors. Similarly, project implementation was the dependent variable. The study had a response rate of 56 which represented 85.7% of the questionnaires. Using multiple regression analysis, findings revealed that objective allocation of the human resource significantly improves project implementation of UN Human Settlements Programme in Somalia.

2.1.3 Monitoring, Evaluation and Project Performance

An empirical analysis was done by Orora (2011) on the factors impacting on project performance at Gusii Mwalimu SACCO. Internal factors such as monitoring and communication were the main variables. The study employed multiple regression analysis and the, empirical findings indicate that feedback was key in affecting performance of projects. The research didn't consider the outcome of evaluation on project performance. Notably, the focus of the study was on Gusii Mwalimu SACCO and not Kenya Airports Authority which was the focus of the current study.

A research was carried out by Chege (2011) on the drivers of Nairobi City Water and Sewerage Company (NAWASCO) projects in Kenya. Data analysis involved correlation analysis. The findings indicated that regular reviews positively impact project outcomes at NAWASCO. Unlike this study which focused on a water and sewerage organization, the focus of the present study is expansion projects by Kenya Airports Authority (KAA).

An empirical research was done by Lecomber (2013) on the key factors which affect the success of projects. The study employed correlation analysis. The research findings reveal that process control is important ingredients to the success of

projects. The research also indicated that the initiation phase of projects is one of the vital stages to success of project and which attention should be given. The study was however based on correlation analysis. In addressing this gap, the current study will apply both multiple regression analysis and correlation analysis, thereby providing more concrete results.

A study was carried out by Mungai (2017) which sought to analyze the effect of institutional factors on implementation of projects while focusing on United Nations Human Settlements Programme in Somalia. Institutional factors include organizational resources, monitoring and evaluation. The study was based on a response rate of 85.7% which was considered to be very good. Multiple regression was applied in the study and the outcome revealed that undertaking corrective measures are key in determining the successful implementation of projects. The study was however based on project implementation of United Nations Human Settlements Programme in Somalia.

2.1.4 Project Planning and Project Performance

Lecomber (2013) did an analysis of the major factors impacting on the project success implementation. The study indicated that the initiation phase of projects is vital to its success. The research findings reveal that project planning positively influences the success of project implementation. Notably, the research applied correlation analysis which only shows the strength and direction of association between research variables. This study is going to apply multiple regression analysis in addition to correlation analysis.

De Moura, Carneiro and Diniz (2018) examined the outcome of project manager's personal characteristics on project performance the goal of this research is to analyse the personal characteristics of project manager as it relates to its impact on project performances by making use of an empirical survey of two hundred and forty-four project managers. The outcomes show that planning skills straightforwardly affect project performance whereas personality affect attitudes indirectly. The study was however based on project manager's skills. Whereas this study is largely based on project management capabilities.

Castillo, Alarcón, and Pelicer, (2018) scrutinized on Influence of Organisational Characteristics on Construction Project Performance Using Corporate Social Networks. Nine firms in Chile that are engaged in construction were considered. KPIs were utilised in periodically capturing the performance of forty-one projects. A correlation analysis depicted the relationships among 4 metrics from 6 social networks and 9 KPIs. It was noted that project planning had significant correlations project performance. The study however centered on Chilean construction firms.

3. RESEARCH METHODOLOGY

3.1 Research Design

Kothari (2011) states that the design in a research provides a framework through which assembling, measuring and data scrutiny can be carried out. It is an outline upon which a researcher is able to come up with answers for the questions that a research aims to unravel (Mugenda & Mugenda, 2013). The design that is going to be utilised is descriptive. This design gives a description of the broad characteristics that a populace has specifically on the variables to be analysed (Cooper & Schindler, 2009). The study sought to look into the effect of organizational capabilities on project performances at Kenya Airport Authority.

3.2 Target Population

Target population constitutes the total individuals, objects or elements that a researcher might be interested in. The unit of analysis were the seven (7) key expansion projects at JKIA by Kenya Airport Authority, Kenya while the unit of observation are the 281 employees handling these expansion projects.

3.3 Sampling Design

Sampling entails choosing a populations subset. The examination adopted random sampling technique. The unit of observation was randomly sampled. Mugenda and Mugenda (2013) The sample size was therefore 85 which constitute 30 percent of the target populace as outlined by Mugenda and Mugenda (2013) which covered the employees of KAA handling expansion projects at JKIA.

3.4 Empirical Model

The study utilized a multiple regression model in the analysis. Project Performance was expressed as a function of project management capabilities (management commitment, resource allocation, monitoring and evaluation).

$$PP = \beta_0 + \beta_1MC + \beta_2RA + \beta_3ME + \beta_4PPL + \epsilon$$

Where:

PP = Project performance

MC= Management commitment

RA= Resource allocation

ME= Monitoring and evaluation

PPL= Project Planning

β_0 = Constant

β_0 - β_4 = Beta Coefficients

ϵ = Error term

4. DATA ANALYSIS AND DISCUSSIONS

4.1 Response Rate

This is the study's response rate as indicated in Figure 4.1.

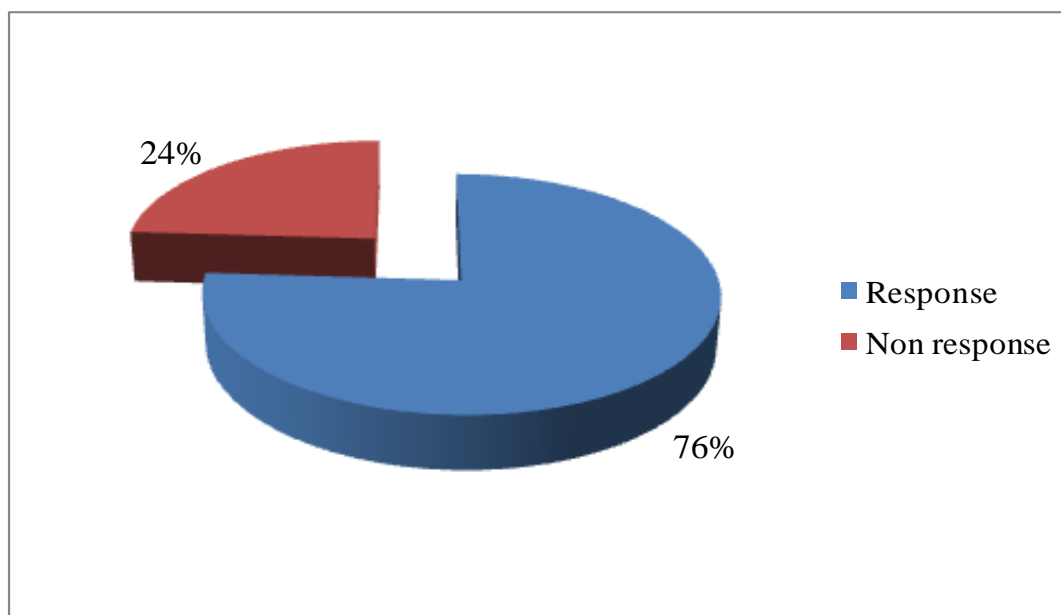


Figure 4.1 Response Rate

Source: Survey Data (2020)

Figure 4.1 reveal that out of eighty-five (85) targeted respondents, fifty-seven (57) responded which translated to 76 percent. Mugenda and Mugenda (2013) opined that a 60% response rate was adequate for statistical analysis. A 76% rate of response is a very good rate of return.

4.2 Reliability

Reliability aims at achieving the consistency of a survey, test, or device of measurement. The paramount index of internal consistency is the index alpha which is accredited to the variables' correlation means notwithstanding their arrangement (Anastasidou, 2006). Field (2009) puts forward an alpha value of 0.70 or more as sufficient in making a conclusion that the item is reliable. This was the threshold in the current study.

Table 4.1: Reliability Results

Item	N	Cronbach's Alpha	N of Items
Project performance	6	.773	4
Management commitment	6	.782	4
Resource allocation	6	.760	4
Monitoring and evaluation	6	.781	4
Project planning	6	.720	4

Source: Survey Data (2020)

The above results indicate that the study variables had attained a Cronbach alpha of above 0.7 which is the threshold for acceptability of the research instrument. Thus, the research adopted the questionnaire for the main research study.

4.3 Correlation Analysis

The aim of the study was to establish the effect of management commitment, resource allocation, monitoring and evaluation, project planning on the project performance. The study adopted Pearson Correlation analysis and the results are presented in Table 4.2

Table 4.2: Correlation Matrix

		Management Commitment	Resource Allocation	Monitoring and Evaluation	Project Planning	Project Performance
Management Commitment	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	57				
Resource Allocation	Pearson Correlation	.377**	1			
	Sig. (2-tailed)	.004				
	N	57	57			
Monitoring and Evaluation	Pearson Correlation	.416**	.513**	1		
	Sig. (2-tailed)	.001	.000			
	N	57	57	57		
Project Planning	Pearson Correlation	.495**	.369**	.515**	1	
	Sig. (2-tailed)	.000	.005	.000		
	N	57	57	57	57	
Project Performance	Pearson Correlation	.611**	.417**	.467**	.604**	1
	Sig. (2-tailed)	.000	.001	.000	.000	
	N	57	57	57	57	57

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

Source: Study Data (2020)

The first objective sought to establish the effect of management commitment on the project outcomes at Kenya Airport Authority. The study results showed that management commitment significantly improves project outcomes ($p = .611$, Sig = $.000 < .05$). The study findings concur with that of Chege (2011) who revealed that management participation is key in ensuring the performance of projects. Similarly, Ondari and Gekara (2013) opined that coordination from the management is significant in determining the successful completion of roads projects in Kenya.

The next objective was establishing how resource allocation affects project results at Kenya Airport Authority. The study results indicated that effective resource allocation positively impacts project results ($p = .417$, Sig = $.000 < .05$). The results are in agreement with earlier empirical evidence by Machuki (2011) recognized the factors insufficient physical resource allocation as predictor of project performance. This was echoed by Orora (2011) who showed that the resource allocation

is significant in predicting the performance of projects. Garbharran, Govender and Msani (2012) found out that the allocation of financial resources has a significant effect on project success. Mungai (2017) also reported that organizational resources and allocation of the human resource improve project implementation significantly.

The other objective was establishing the effect of monitoring and evaluation on the project outcomes at Kenya Airport Authority. It was determined that monitoring and evaluation significantly improves project performance ($p = .467$, $Sig = .000 < .05$). The results are in agreement with Orora (2011) who found out that monitoring had strong effect on project performance. Chege (2011) found that regular reviews improve performance NAWASCO projects. Mungai (2017) also found that undertaking corrective measures are key in determining the successful implementation of projects for United Nations Human Settlements Programme in Somalia.

The fourth objective was determining the effect of project planning on project outcomes at Kenya Airport Authority. It became clear that project planning significantly improves performance of KAA projects ($p = .604$, $Sig = .000 < .05$). These findings reflect findings by Lecomber (2013) who revealed that project planning positively influences the success of project implementation. De Moura *et al.* (2018) showed that planning significantly affects project performance.

4.4 Regression Analysis

The main purpose of the study was determining how project management capabilities impacts an organization's ability to effectively execute its plans. A multiple linear regression analysis was employed in determination of the relationship between the independent and dependent variables.

Table 4.3: Regression Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.717 ^a	.514	.476	2.07639

a. Predictors: (Constant), Project Planning, Resource Allocation, Management Commitment, Monitoring and Evaluation

Source: Study Data (2020)

The above regression findings show a coefficient of determination ($R^2 = .514$). This implies that 51.4% of the changes in the project performance at Kenya Airport Authority can be determined by the project management capabilities proxies (project planning, resource allocation, management commitment, monitoring and evaluation). This shows that at least 48.6% of changes in project performance are determined by factors not considered in this study. The findings are consistent with Chege (2011), Machuki (2011), Orora (2011), Ondari and Gekara (2013) and Mungai (2017) who found that causes for project successes were attributed to factors involving project management, top management commitment, monitoring and evaluation as well as resource allocation.

ANOVA analysis was applied in determination of the statistical significance of the regression model with findings indicated below.

Table 4.4: ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	236.789	4	59.197	13.730	.000 ^b
	Residual	224.193	52	4.311		
	Total	460.982	56			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Project Planning, Resource Allocation, Management Commitment, Monitoring and Evaluation

Source: Study Data (2020)

The ANOVA analysis is focussed on the critical significance measures; the f-statistic and the significance. The findings indicate a $f\text{-calculated} = 13.730 > F\text{- (critical } f; 1.162)$. The study also indicated a $\text{Sig} = .000 < .05$. This signifies that the regression model adopted in the study was statistically significant; thus, there is an important relationship between project management capabilities and performance of expansion projects at Kenya Airport Authority.

Table 4.5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.095	2.247		.042	.966
	Management Commitment	.402	.127	.366	3.164	.003
	Resource Allocation	.121	.125	.112	.968	.338
	Monitoring and Evaluation	.108	.165	.082	.659	.513
	Project Planning	.307	.110	.340	2.800	.007

a. Dependent Variable: Project Performance

Source: Study Data (2020)

The study results yielded a $\beta = .095$ which was not statistically significant since the sig-value $.966 > .05$. The findings of the study show that management commitment had a coefficient $\beta = .402$ which was statistically significant since sig-value $.003 < .05$. This indicates that a change in the level of management commitment will yield a .402 change in the project performance. The findings also indicate a coefficient of resource allocation $\beta = .121$ which was not significant since $.338 > .05$. The study results showed a coefficient of monitoring and evaluation $\beta = .108$ which was not significant since $.513 > .05$. The research results show that project planning had a coefficient $\beta = .307$ which was statistically significant since sig-value $.007 < .05$. This indicates that any change in the level of project planning will yield a .307 change in the project performance. Castillo *et al.* (2018) found out that project planning and project performance had a positive and significant relationship.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The findings of the study indicate that project management capabilities have a significant relationship with project performance. The research concludes that changes in project performance can statistically be determined by management commitment and project planning.

The study concludes that management commitment has a significant and positive influence on the project performance. The study opines that timely communication by the management, active participation, coordination of different tasks and careful planning for the various activities by the management can significantly lead to better project performance.

The research also concludes that project planning has a positive and significant influence on the project performance at Kenya Airports Authority. The study concluded that adherence to policies, following implementation plan and having contingencies in place are instrumental to better project performance at Kenya Airports Authority expansion projects.

5.2 Policy Recommendations

The study recommends that the management of Kenya Airport Authority be more involved in the execution of projects. The management should continually support initiated projects of the organization through timely decision making and timely release of funds and project materials. The study further recommends that the management should implement robust feedback systems to ensure there is effective communication of project activities. Further the management should align the firm structures to enhance coordination of tasks and ensure smooth planning for project execution.

The study also is of the recommendation that planning policies should be adhered to and also efficient contingency plan be put in place as these will ensure greater performance of expansion projects at Kenya Airport Authority. The research also recommends that the organization should put up a clear project implementation that will help in guiding project execution which can foster project performance. In addition, the study recommends that implementation of any activities should be carried out as per the plan if project success is to be realized.

5.3 Areas for Further Research

The research was only focussed on the project performance at Kenya Airport Authority. To foster the generalizability of the research results. Hence another study could focus on the effect of project capabilities on the performance of projects within state corporations in Kenya. Further a study can focus on how resource capacity impacts project success within state agencies.

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