International Journal of Innovative Research and Advanced Studies (IJIRAS)
Volume 3 Issue 11, October 2016

ISSN: 2394-4404

The Influence Of Project Manager Capability On Implementation Of Construction Projects: A Case Study Of Kenya Airports Authority

Evelyn Nelima Masinde

Department of Entrepreneurship and Technology, Leadership and Management, Jomo Kenyatta University of Agriculture and Technology

Dr. Samson Nyang'au Paul

Jomo Kenyatta University of Agriculture and Technology, Kenya

Abstract: ***Construction projects are one of the endeavors with many unique features such as long time spans, complicated processes, extremely challenging environments, financial strain and dynamic organization structures. Owing to this unique nature, construction projects are being faced by numerous challenges which have impacted negatively on project success. Project success is judged by meeting the criteria of cost, time, safety, resource allocation and quality as specified by the owner. Most recent research literature clearly indicates that delays are one of the biggest problems faced by construction industry. The study was motivated by the changing social, dynamic – economic and technological environment which continue to affect the way projects are managed. The objective of the study was to examine the extent to which project manager capabilities affect implementation of projects in Kenya's aviation industry with reference to Kenya Airports Authority. The study adopted descriptive research design in which data was gathered through questionnaires. The target population for this study was 1000 employees drawn from various departments in Kenya Airports Authority. This population was targeted because of their participation in various projects with Kenya Airports Authority.***

Stratified sampling technique was adopted to select the study participants. Data collected was analyzed by use of Statistical Package for Social Sciences (SPSS) version 23 to assess the determinant of implementation of construction projects. Regression models were used to examine the influence of project manager capabilities on effective implementation of construction projects at Kenya Airports Authority. The study found that project manager capabilities had a strong positive relationship on implementation of construction projects with correlation coefficient of 0.720.

Keywords: Project Manager Capability, Effective Implementation

I. INTRODUCTION

Aviation industry is one of the industries in today's world that has grown immensely over a period of time. As a result of this growth, aviation activities have taken different forms resulting into more complex and sophisticated projects. Aviation industry projects are grouped into five types of projects namely civil engineering and construction, manufacturing, information technology, management change, and projects of pure scientific research. All these mentioned projects are unique in nature and their uniqueness calls for assessment of their own condition. Construction projects are one of the endeavors with many unique features such as long time spans, complicated processes, extremely challenging environments, financial strain and dynamic organization structures (Zou et al, 2007). Most recent research literature clearly indicates that delays are one of the biggest problems faced by the construction industry. Delay can be defined as a situation when the contractor and the project owner jointly or severally contribute to the non-completion of the project

within the original, stipulated or agreed upon contract period (Aibinu & Jagboro, 2002). Delays in project implementation are recognized worldwide as a characteristic of construction projects (Sambasivan & Soon, 2007).

Ozdemir (2010) stated that the construction industry has a very poor reputation for coping with delays. Delay analysis is generally either ignored or performed subjectively by simply adding a contingency. As a result, many major projects fail to meet scheduled deadlines. In a construction project, the management of time is critical (Duran, 2006), thus predicting a likelihood that schedule delay plays a key role in overall project success (Luu et al., 2009).A number of studies have been done to investigate determinants that aid in the successful implementation of projects (Martin, 1976; Locke1984); Baker et.al, 1983 and Pinto & Slevin 1989). A project is considered successful if it is completed on time, at cost and according to the specifications of the customer (Nguyen *et al.*, 2003). Diallo & Thuiller (2005) observed that time and quality are the management measures of success. Project performance in the management functions of time, quality and cost are currently used to measure project success (Moura *et al.*, 2007). Time has always been at the center of evaluation of project success because it has a direct effect on cost and owner satisfaction. Time is an important parameter of measuring project success, an assessment of delays in project implementation indicates the performance of projects. This project builds on the past studies by examining determinants that are most influential in avoiding the delays in construction industries and hence improving projects.

A. PROJECT IMPLEMENTATION IN KAA

Kenya Airports Authority (KAA) was established by Kenya African National Union government in 1992. It's the custodian of nine airstrips and airports in Kenya. Its head office is based at Jomo Kenyatta International Airport in Embakasi, Nairobi. Kenya Airports Authority (KAA) manages both international and domestic airports in Kenya, including Jomo Kenyatta International Airport (JKIA) the busiest airport in East and Central Africa. JKIA was constructed in 1978 to accommodate 2.5 million passengers annually. Foot traffic at JKIA has since almost tripled leading to modernization and expansion initiatives. In 2004, a Canadian-Kenyan consortium won the consulting contract for the renovation and forecast expansion requirements for JKIA.

Facility evaluation and conceptual recommendations were completed and officially accepted in January 2005, leading to the detailed design and tender documents. The expansion project was divided into three phases to avoid disrupting the airport's operations. The first phase involved, apron construction, a taxiway, civil works for the new terminal building, extension of the fuel hydrant system and fencing .The first phase of the project started in September 2006, it was expected to complete in 2007 but was completed in mid-2008 due to rains, shortage of cement and delivery of equipment .The second phase, which started in mid-2008, included construction of unit 4 and a car parking facility that could accommodate 1,500 cars. The expansion was expected to take three years. However, phase one, which was scheduled for completion in June 2007, was completed in mid- 2008. This resulted into the subsequent delay of other phases of construction.

B. STATEMENT OF THE PROBLEM

Construction industries in all countries face many difficulties and challenges. Some of the challenges have been frequent and lengthy delay of projects impacting negatively on the project success.) According to Chan *et al, (*2008) the goal of all projects is to successfully complete the project on schedule, within the planned budget with the highest quality and safest manner. However this has not been the case with many construction projects. Kenya Airport Authority construction project is not exceptional. In October 2005, the K.A.A announced the expansion of JKIA. To avoid interfering with the airport operations, the expansion process was divided into three phases. The first phase of the project which involved a taxiway, apron construction, civil works for the new terminal building, extension of the fuel hydrant system and fencing started in September 2006.It was expected to complete in 2007 but was completed in mid-2008.The delay was attributed to shortage of cement, delivery of equipment and adverse weather conditions.

The expansion project was expected to take three years but since phase one failed to meet the scheduled time it resulted into the subsequent delay of other phases of construction. A project is generally considered to be successfully implemented if it comes in on schedule, comes on in budget and achieve basically all the goals originally set for it (Mbaluku & Bwisa, 2013).In recent years researchers have become increasingly interested in factors that have an impact on project management effectiveness and the success of projects (Jugdev & Muller 2005, Crawford et al.2006.). However, there is lack of studies focusing on the determinants influencing effective implementation of construction projects in aviation industry. This study therefore, sought to examine project manager capabilities as the determinant for effective implementation of construction projects in the aviation industry.

B. OBJECTIVES OF THE STUDY

The general objective of the study was to examine the determinants of effective implementation of construction projects in aviation industry. Specifically the study sought to assess the extent to which project manager capabilities influence effective implementation of construction projects in aviation industry.

II. THEORETICAL FRAMEWORK

A. PROJECT MANAGEMENT COMPETENCY THEORY

The competence theory was established by McClelland & McBer in the 1980s .They defined competency as the underlying characteristic of an individual that is causally related to criterion-referenced effective or superior performance in a job or situation.

Project management competence originates from widely held assumption that if people who manage and work on projects are competent, they will perform effectively and this will lead to successful projects and successful organizations (Beer, 1990; Smith, 1976). Competence is generally accepted as encompassing skills, knowledge, attitudes and behaviors that are related to superior job performance. Crawford (as cited in Boyatzis, 1982 & Spencer, 1993), explained that professional competence in project management is attained by combination of knowledge acquired from training and its subsequent application and other skills developed in the course of work.

Dainty, (2004) advocates for a competency based performance model for construction project managers where managerial behavior input is appraised and nine performance indicators for PM competency are developed. They entail decision-making, leadership, team building, mutuality and approachability, honesty and integrity, communication, learning, understanding and application, self-efficacy, and maintenance of external relations. Based on this theory, KAA needs to employ competent project managers to enhance successful implementation of projects. KAA should also embrace a competency performance model for appraisal of managerial behavior.

Further, the theory is supported by the conceptual framework which clearly indicates that for projects to be implemented within the given time restrictions, budget and owner specification, the project manager need to possess the right skills, knowledge and experience.

The conceptual framework in the study was summarized in figure 1

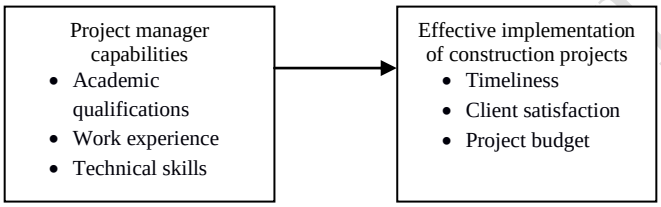

Figure 1: Conceptual framework

B. EMPIRICAL REVIEW

a. EFFECT OF PROJECT MANAGER CAPABILITIES ON PROJECT IMPLEMENTATION

A project manager has the overall responsibility for successful initiation, planning, design, execution, monitoring, controlling and closing of a project. Construction industries use this title when executing project (Haughey, 2015). Essentially, project managers should have a combination of skills from good decision making, ability to resolve conflicts, recognition of risk and general management skills. Many examples of projects that have exceeded their budgets by enormous amounts or finished after the stipulated time have been experienced in the aviation industry worldwide. A project manager should ensure that the results of the project satisfy the project sponsor or purchaser and all other principal stakeholder within the promised timescale, budget allocation and any other specification. (Haughey, 2015)

The Project management Institute in 2004 chose David Buisson who at the time had over thirteen years' experience and a set of skills as the lead project manager to transform the world's busiest airport the Heathrow Airport. The complexity was that he needed to transform the terminals while at the same time constantly allowing normal operations of the airport to its 20 million customers. With his capabilities and experience the project was completed on the strict deadline it had been provided with considering quality standards such as health and safety issues (Project Management Institute, 2008). Despite the challenging problems the project team under the project manager delivered its 42phase work while on time and within the stipulated budget ensuring normal operations.

Hart(2012), argues that project managers capabilities and experience play a key role in determinig positive outcomes. He further argues that current capabilities, potential capabilities and the perceived desire to achieve potential should be considered when acquiring a project manager. Project managers must demonstrate financial aptitude, attention to detail, credibility, active listening and flexibility when taking projects. The aviation as a field is a complex aggregation of technical knowledge and skills. Its project and operation are subject to scrutiny and approval from both national and international regulating authorities and hence requires an experienced project manager who can understand the regulatory background as well as the industry jargon. Pinto &Slevin(1989) demonstrated the importance of selecting project managers who possess the necessary technical and administrative skills for effective project execution. Project manager's commitment and competence was shown to be most critical during planning and execution stage. Verma (1995) lists the following people skills that are more important for project manager: motivation and negotiation, self-confidence, communication, maturity and emotional stability, reliability, a constructive positive attitude, and flexibility and tolerance for ambiguity and uncertainty.

Munns (1996), on effective project managers in achieving project success revealed that project management techniques to implement projects successfully was established in areas such as planning and control of time, cost and quality Further it was established that project management was efficient to handle complex undertakings such as those in the aviation industries. Effectively, to ensure the success of projects, the project manager must have the requisite knowledge of project management which is defined as the planning, organizing, monitoring and controlling of all aspects of a project (Project Management Institute, 2008). According to Pinkertons (2003) project management shapes the competences of various individuals by enabling them to achieve the objectives of the project and hence success of the project. However Murch (2001) states that project manager turns out to be successful by combination of experience, time, and talent and training. Construction in the aviation industry is quite complex and hence the right set of skills and experiences are required to ensure successful and quality projects. As such the KAA whilst undertaking their projects need to ensure they put competent project managers to increase potentialities of project success.

III. RESEARCH METHODOLOGY

The study used descriptive research design which seeks to describe the situation as it appears in its natural phenomenon (Mugenda, 2010). The study sought to examine project implementation process and the factors affecting it without changing anything on the ground. The target population was 1000 employees who were divided into three categories of the organization namely, project managers, support staff and technical officers.

A sample size of 91 was arrived at based on sample size determination formula by Yamane Taro. Structured questionnaires, whose Cronbach's Alpha value exceeded 0.7, were used as data collection instrument, as a result of which 100 questionnaires were sent out to respondents, out of which 88 were sufficiently filled.

The findings revealed that the entire questionnaire was reliable for all the five variables reliable as values of Cronbach's Alpha exceeded the threshold of 0.7 recommended by Nunally & Bernstein (1994).

IV. RESULTS AND DISCUSSION

A. DEMOGRAPHIC CHARACTERISTICS

Fifty seven percent of the respondents sampled were male while the rest were of female gender. The number of male respondents exceeded that of the female gender by a small percentage (15) and majority of the respondents (73%) had attained at least diploma qualification, which supports studies by King & McGrath (2002) who indicated that education is one of the factors that impact positively on growth of their firms. The majority of those sampled had served in KAA for between 6 to 15 years indicating in depth knowledge of the organization and could be relied upon to have relevant and accurate information regarding implementation of construction projects.

B. INFLUENCE OF PROJECT MANAGERS' CAPABILITIES ON PROJECTS

In order to assess the influence of project managers' capability on implementation of construction projects at the Kenya Airports Authority, the respondents were provided with statements related to management capability and asked to indicate the extent of their agreement with each of the statements by ticking as appropriate along a Likert five – point scale, where the responses were coded as follows for analysis with SPSS version 23;Strongly Agree(SA) = 1, Agree(A) = 2, Undecided(U)= 3, Disagree(D) = 4, Strongly Disagree (SD)= 5. The mean and standard deviation (SDv) were calculated and the results presented in table 1.

Statement	Response (%)					Mean	SDv
	SA	A	U	D	SD		
Project management have the technical capability required to spearhead project implementation	30.7	54.5	11.4	1.1	2.3	**1.9**	**0.8**
Project managers exhibit good working relations with employees	27.3	42.0	17.0	5.7	8.0	**2.3**	**1.2**
Managers highly motivate employees toward the project goal	21.6	29.5	20.5	14.8	13.6	**2.7**	**1.3**
Managers are well versed with project systems	26.1	53.4	8.0	3.4	9.1	**2.2**	**1.1**
Managers understand their role in employee interrelationship	28.4	46.6	15.9	4.5	3.4	**2.2**	**1.4**
Manager capability affect project implementation in KAA	33.0	38.6	13.6	5.7	9.1	**2.2**	**1.2**
n = 88							

Table 1: Responses on project manager capabilities

From Table 1, the majority of the respondent 85.2% agreed that project management have the technical capability required to spearhead project implementation followed by 79.6% and79.5% respectively who felt that Managers are well versed with project systems and easily teach this to other employees and managers use their ability and knowledge base to improve the productivity of the project team. A combined percentage (71.6 %) of the respondents agreed that project manager capability affect project implementation in KAA.

Regression analysis for project manager capability in relation to implementation construction projects at Kenya Airports Authority was performed using SPSS version 23 to predict the relationship between the two variables. The results were summarized and presented in table 2.

Model	R	R Square	Adjusted R Square	Std. Error	Sig
1	.720[a]	.519	.465	.079	0.007

a. Predictors: (Constant), academic qualifications, work experience, technical skills

b. Dependent Variable: Implementation of construction projects

Table 2: Relationship of manager capability with project implementation

From table 2 the coefficient of correlation, R, was found to be 0.72 indicating a strong positive relationship between project manager capability and implementation of construction projects in KAA. The computed coefficient of determination, R Squared was found to be .519. This implied that about 52% % variability in achieving successful project implementation is attributable to academic qualification, work experience and technical skills of the project manager.

Table 3 below shows the coefficients of correlation between project manager capabilities and implementation of construction projects in Kenya Airports Authority.

Independent variable	Karl Pearson coefficient	Significance (2 - tailed)	Spearman Rank Coefficient	Significance (2 - tailed)
Project manager capability	0.712	0.000	0.722	0.001

Table 3: Correlation Results

The results of the analysis performed at 95% confidence level showed a high positive correlation between the independent variable, project manager capability and

implementation of construction projects in Kenya Airports Authority.

C. DISCUSSION

Project manager capability was found to be a factor influencing implementation of construction projects at KAA. The study found out that academic qualification, work experience and technical skills are major contributors to the effectiveness of a project manager. Most respondents agreed that the project manager capabilities had a direct influence on implementation of projects. At KAA the managers are well versed with project systems and easily share project knowledge with the project team.

Further, the project manager capabilities were found to bear positive relationship with implementation of projects at KAA. Coefficient of correlation and coefficient of determination were found to be 0.720 and 0.519 respectively.

The findings of the study are in line with other previous studies in related areas. Hart (2012), Pinto & Slevin (1989) and Verma (1995) noted that project manager's capabilities and experience play a key role in determining positive outcomes.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

A. SUMMARY

Based on the findings of this study a combined percentage (71.6 %) of the respondents agreed that project manager capability affect project implementation in KAA.

B. CONCLUSION

The study therefore concludes that the project manager plays a critical role in successful implementation of construction projects and hence needs to possess the necessary knowledge, combination of skills from good decision making, ability to resolve conflicts, recognition of risk, general management skills and experience to spearhead project implementation. In order to handle complex projects such as those of aviation industry, project management knowledge is quite essential as it shapes the competencies of the manager thus enabling him to achieve the objectives of the project and hence success of the projects. Apart from the required knowledge, skills and experience the manager should ensure that the results of the project satisfy the project sponsor or purchaser and all other principal stakeholder within the promised timescale, budget allocation and any other specification given.

C. RECOMMENDATIONS

Based on the findings of the study the following recommendation can be made; Effective implementation of aviation project requires human resources who are skilled, experienced and knowledgeable in construction industry issues specifically in the field of aviation. There is need for the management in the organization to employ competent project managers to enhance successful implementation of projects. The management in the organization should also embrace a competency performance model for appraisal of managerial behavior.

REFERENCES

[1] Aibinu, A., & Jagboro, G. (2002). Effects of construction delays on project in Nigeria construction industry. *International Journal of Project Management, 20* (8), 593–599.
[2] Albert, P. (2004). Key performance indicators for measuring construction success. *An international Journal*, 203-221.
[3] Beer, M., & Nohria, N. (2000). Cracking the Code of Change. *Harvard Business Review, 98* (3), 133-141.
[4] Crawford, L., & Nahmia, A. (2010). Competencies for Managing Change. *International Journal of Project Management, 28* (4), 405-412.
[5] Dainty, A. (2004). Competence, Competency, Competencies. Performance Assessment in Organization. *Work study , 51* (6), 314-319.
[6] Flouris, T., & Lock, D. (2008). *Aviation Project management.* Aldershot: Ashgate.
[7] Hart, S. (2012). *10 capabilities of an effective project manager.* Retrieved February 20, 2016, from PM-Foundations: https://pm-foundations.com/2012/09/16/pm-foundations-10-capabilities-of-an-effective-project-manager/
[8] Haughey, D. (2015). *The role of project manager.* Retrieved February 20, 2016, from Project Smart: http://www2.parkland.edu/businesstraining/documents/keystosuccessfulprojectplanning.pdf
[9] Jugdev, K., & Muller, R. (2005). A Retrospective Look at our Evolving Understanding of Project
[10] King, K., & McGrath, s. (2002). Globalisation, Enterprise and Knowledge: Educational Training and Development. *Internatinal Review of Education, 50* (1), 74-76.
[11] Luu, V., Kim, S., Van Tuan, N., & Ogunlana, S. (2009). Quantifying Schedule Risk in Construction Projects using Bayesian Belief Networks. *International Journal of Project Management, 27* (1), 39-50.
[12] Mbaluka, H., & Bwisa, H. (2013). *Delay factors in Construction Projects implementation in the Public.A case study of the Kenya Agriculture Research Institute Construction Projects.*
[13] Mugenda, M. O. (2010). *Research Methods, Quantitative and Qualitative Approaches.* Nairobi: Acts Press.
[14] Munns, A. K. (1996). The role of project management in achieving project success. *International journal of project management* .
[15] Murch, R. (2001). *Project Management Best Practices for IT Professionals.* New York: Prentice Hall.
[16] Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3 ed.). New York: McGraw-Hill.
[17] Pinto, J. k., & Slevin, D. P. (1989). Critical Success Factors in R&D Projects. *Research Technology Management, 32* (1), 31-35.

[18] Project Management Institute. (2008). *Changing the face of the busiest airport in the world through project management.* Retrieved February 20, 2016, from Project Management Institute: http://www.pmi.org/-/media/pmi/documents/public/pdf/case-study/heathrow-airport.pdf

[19] Sambasivan, M., & Soon, Y. W. (2007). Causes and Effects of Delays in Malaysian Construction Industry. *International Journal of Project Management, 25* (5), 517-526.

[20] Verma, V. K. (1995). *Organizing Projects for Success: The Human Aspects of Project Management, Volume One.* Chicago: Project Management Institute.

[21] Zou, P., Zhang, G., & Wang, J. (2007). Understanding the Key Risks in Construction Projects in China. *International Journal of Project Management, 25* (6), 601-614.