

## ASSESSMENT OF THE DETERMINANTS OF IMPLEMENTATION OF HOUSING PROJECTS IN KENYA

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### ABSTRACT

Kenya housing construction industry is facing enormous challenges in quality assurance from cases of collapsing buildings, unfinished and substandard constructed and uninspected houses . Cases of overruns in cost, schedule, technical quality and safety have also been rampant. The main purpose of this study therefore was to assess the determinants of housing projects implementation in Kenya. The study aim was to assess project planning, project control, motivated project team and project management competency, on housing project implementation in Kenya. The study employed descriptive study. Data was collected using questionnaires for project managers. The research instruments were validated by use of a pilot study, which was assessed by the supervisor. The target population of the study was project managers implementing housing project in Nairobi. Random sampling was used to sample the project managers. Data collected was analyzed by use of Statistical Package for Social Sciences (SPSS) Computer Package to assess the determinant of housing projects implementation. Regression models were used to examine the influence of project planning, project control, motivated project team and project management competency, on housing project implementation in Kenya. The study found that project planning, project control, motivated project team and project management competency have a great influence on housing project implementation in Kenya. Project Control measures was found to be the most significant with correlation coefficient of 76.6% element influencing implementation housing projects in Kenya. The study therefore recommends that project managers should take adequate control measures over every aspect in the project which requires attention during its implementation process to adequately ensure project success.

**Keywords:** *Assessment, Implementation, Housing Projects, in Kenya*

## Introduction

Construction projects are a mix of very complex processes that seldom go according to the implementation plan. Project implementation is the stage where all the planned activities are put in to action, the project is produced and the performance capabilities are verified. A project is generally considered to be successfully implemented if it comes in on-schedule, comes in on-budget, and achieves basically all the goals originally set for it and is accepted and used by the clients for whom it is intended (Mbaluku & Bwisa, 2013).

Under the Vision 2030, the Kenyan government has committed to provide adequate, affordable and quality housing for all citizens, particularly the low income groups. The Kenyan government has therefore incentivized developers to move down market by offering, among other things, tax breaks for housing units that cost less than KES 1.6 million ( USD 18,000). And with the inclusion of the right to adequate housing in the 2010 Constitution of Kenya, understanding how to provide affordable housing has become a priority. Further, provision of housing has been devolved to the county governments, making the Nairobi County Government directly responsible for ensuring that all of its 3.5 million inhabitants are adequately housed.

Ministry of Transport and Infrastructure Development (MTID) reports on collapsed structures apportion the blame to lack of proper supervision and poor construction procedures (MTID, 2006). Muguchu (2012) provides evidence that despite the high quality of training of consultants in the building industry in Kenya and regulation of the industry in major urban areas, construction projects do not always meet key performance goals. This is manifested by myriad projects that have cost overrun, delayed completion period and poor quality resulting to collapsed buildings in various parts of the country, high maintenance costs, dissatisfied clients and even buildings which are not functional.

## Statement of the Problem

In Kenya the gap between demand and supply for housing continues to widen in the country. The estimated housing demand in urban areas is approximately 150,000 units per year yet the current supply is about 30,000 units (HASS, 2013). According to KNBS (2013), the sector recorded a

growth of 4.8 per cent in 2012 while cement consumption rose by 1.7 per cent (from 3,870.9 thousand tonnes in 2011 to 3,937.3 thousand tonnes in 2012). The total value of new private and public buildings completed went up by 9.6 per cent from KSh 46.4 billion in 2011 to KSh 50.8 billion in 2012. The recurrent problems of time and cost overruns that are widely prevalent in the public sector construction projects (Mwandali, 2009, Karimi, 2011, & Musa, 2010). For example the collapse of a building in Nairobi Ronald Ngala in 2006, Kiambu town in 2009 and 2010 and at pipeline, Embakasi in June 2011. Mambo (2013) attributes the collapse to inadequate geotechnical and materials investigations. Charagu (2013) concluded that it is due to deficiency of the designs in construction sector. This call for research on innovative, adaptive and dynamic project management approaches to construction projects from inception to successful completion (Leung, 2010, Mawdesley & Askew, 2011).

In Saudi Arabia, Assaf and Al-Hejji (2009) found that only 30% of construction projects were completed within the scheduled completion dates and that the average time overrun was between 10% and 30%. Odeyinka and Yusif (2010) have shown that seven out of ten projects surveyed in Nigeria suffered delays in their execution. Miller and Lessard (2011) contends that close to 40% of large engineering projects researched on a worldwide basis experienced serious performance problems (\$985 million average cost). Shanmugapriya and Subramanian (2013) posit that up to 60 per cent of construction projects in India are overwhelmed by time and cost overruns (Gupta., 2009). Studies in the U.S. (Ahmed et al., 2009) and in other developed economies revealed a trail of time and cost overruns on building. El-Razek et al. (2008) found that delayed payments, coordination difficulty and poor communication in Egypt, Sambasivan and Soon (2007) established poor planning, poor site management, in Malaysian Construction Industry. Kaliba et al. (2009) in road construction in Zambia were delayed payments, construction mistakes, labour disputes and strikes.

A number of studies have been done to investigate factors that determine project implementation (Chan et al., 2008; Anderson et al., 2009; Toorand Ogunlana, 2012). EC (2012) study identified lack of effective project management as the cause of cost, time and schedule overruns. Frimpong et al. (2012) revealed that PM tools and techniques play an important role in the effective management. This study was an effort in this direction by focusing on human and technical

determinants of construction management implementation. In this study, an assessment of the determinants of implementation of housing projects in Kenya was explored.

## Objectives of the Study

### General Objective

The general objective of the study was to assess the determinants of housing projects implementation in Kenya.

### Specific Objectives

- i. To assess the extent to which project planning influence implementation of housing projects in Kenya.
- ii. To establish the extent to which project control influence implementation of housing projects in Kenya.
- iii. To determine the extent to which project team motivation influence implementation of housing projects in Kenya.
- iv. To establish the extent to which project competency influence implementation of housing projects in Kenya.

## Literature Review

### Management by Objective Theory

Management by objectives (MBO) was first popularized by Drucer (1954). MBO is based on the thinking that various hierarchies within companies need to be integrated. Drucer argued that all organizations exist for a purpose, and, to achieve that purpose, top management sets goals and objectives that are common to the whole organization. The MBO approach injects an element of dialogue into the process of passing plans and objectives from one organizational level to another. The superior brings specific goals and measures for the subordinate to a meeting with this subordinate, who also brings specific objectives and measures that he or she sees as appropriate or contributing to better accomplishment of the job. Together they develop a group of specific goals, measures of achievement, and time frames in which the subordinate commits himself or herself to the accomplishment of those goals. The subordinate is then held responsible for the accomplishment of the goals. In other words MBO is participative goal setting, choosing course of actions and decision making. An important part of the MBO is the measurement and

the comparison of the employee's actual performance with the standards set. Ideally, when employees themselves have been involved with the goal setting and choosing the course of action to be followed by them, they are more likely to fulfil their responsibilities. Some of the important features and advantages of MBO are Motivation – Involving employees in the whole process of goal setting and increasing employee empowerment. This increases employee job satisfaction and commitment, Better communication and coordination – Frequent reviews and interactions between superiors and subordinates help to maintain harmonious relationships within the organization and also to solve many problems, Clarity of goals, Subordinates tend to have a higher commitment to objectives they set for themselves than those imposed on them by another person, Managers can ensure that objectives of the subordinates are linked to the organization's objectives, and everybody will be having a common goal for whole organization.

### Control Theory

Control theory, invented by Ouchi (1979) and Eisenhardt (1985) uses the notion of modes of control to describe all attempts to ensure that individuals in organizations act in a way that is consistent with organizational goals and objectives (Kirsch, 1997). The concept of control is based on the premise that the controller and the controlee have different interests. These different interests will be overcome by the controller's modes of control (Tiwana, 2009). Modes of control may distinguish between formal and informal mechanisms. Formal modes of control are defined as Behavior control and Outcome control. Behavior control consists of articulated roles and procedures and rewards based upon those rules. Outcome control is mechanisms for assigning rewards based on articulated goals and outcomes. The informal modes of control are carried out by the control modes labeled as clan and self. Clan are the mechanisms of a group sharing common values, beliefs, problems, and these mechanisms work through activities as hiring & training of staff, socialization etc. The control mode of the self is about individually defined goals and can be carried through the mechanisms of individual empowerment, self-management, self-set goals, etc. (Kirsch, 1997).

In the context construction project management the project manager and the project teams have different interests. In order for the project manager to control cost and schedules during the project execution phase, he has to come up with different modes that ensure that teams are compliant. The control mechanisms and rules must also be aligned with the overall construction goals as well as the goals of individual teams. Based on this understanding, PM this research will use control theory to focus on modes of control in different phases of construction project implementation

### Goal - Setting Theory

Locke, (2010) proposed that people are motivated to work when they have a goal (Greenberg & Baron, 2000). Goals tell an employee what needs to be done and how much effort will have to be expended. This theory is widely utilised in the construction industry because productivity per day of any trade is based on a certain output of work. For example, masons/ block layers need to lay a certain number of blocks to account for the day's work and pay. This is related to the concept of goal-setting theory which presupposes that an individual is committed to the goal, that is, is determined not to lower or abandon the goal. Locke, (2010) observes that goal-setting focuses behaviour and motivates employees. This is most likely to occur when goals are made public, the phenomenon most often experienced in the construction industry. It is note-worthy that resistance is greater when goals are difficult.

This theory will be used to analyse how team motivation through piece work targeting influences project implementation. The assumption under this theory is that construction worker's perception of the value of the incentives accorded to them will be important in improving the work performance in effect determine project implementation.

### Project Management Competency Theory

The work of McClelland & McBer in the 1980s established the competence theory. The authors defined competency as the underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation. Since then a number of competency frameworks have been developed by different project management institutes.

Crawford (as cited in Boyatzis, 1982 & Spencer, 1993), puts a model of competence that integrates knowledge, skills, demonstrable performance, and core personality characteristics, noting the last, personality characteristics, as challenging to develop and assess through training. She argues that two of the most influential project management standards, the PMBOK, address only the knowledge aspect of competence while a third, Australia's National Competency Standards, draws from knowledge but focuses only on demonstrable performance. Crawford, (2010) study found out that project managers "do not necessarily have the required competence or perform the full activities required to promote and implement the changes that they are leading as part of their projects.

Interest in project management competence stems from the very reasonable and widely held assumption that if people who manage and work on projects are competent, they will perform effectively and that this will lead to successful projects and successful organizations (Beer, 1990; Smith, 1976). Competence is generally accepted, however, as encompassing knowledge, skills, attitudes and behaviors that are causally related to superior job performance. Crawford (as cited in Boyatzis, 1982 & Spencer, 1993), stated 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.

Previous management studies have investigated the impact of competency on performance. Dainty,(2004) have argued 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 to comprise team building, leadership, decision-making, mutuality and approachability, honesty and integrity, communication, learning, understanding and application, self-efficacy, and maintenance of external relations. In the context of construction project management; it is assumed that if the project manager and the project team have all the required competence for the work then the project implementation will be successful.

### Project Planning

The study aimed to identify the best practices for planning and executing a project, and then employ it as a benchmark for improving project planning in other industries (Tonquist, 2010).. Physical planning includes the scheduling of the project's tasks in terms of time while financial planning shows the required cash flow for each time period Zwikael and Saleh (2006). Regular plan review should focus more on the role level rather than the activity level. This approach is said to increase the planning of a project which will lead to better completion results. The Gantt chart is the commonly used planning tool on projects.

### Project Control

Project managers often use project plans, milestones and budgets to reduce risks and obtain project control (Mata & Ashkenas, 2005). The common thread from the surveys on why construct projects succeeds include among others; clear goals, management support, control mechanism and communicating (Rozenes, Spraggett & Vitner, 2006). ). The proposed approach raises a major conflict issue with the role of the project manager as it is very hard for project managers to keep the pace of the project when kept under a constant auditing (Alshanbari, 2010). According to (Dawood & Mallasi, 2006) the Gatt Chart widely used in project does not capture the visual interaction between the construction activities during the implementation phase. Continuous monitoring and evaluation have show to produce the desired results.

### Project Team Motivation

Andawei (2002) reports on a study finding that motivational factors significantly influence the performance of workers. Chan et al., (2002) research also found out that project team commitment is one of the most important factors for project implementation. Darrington (2010) emphasized that motivation schemes on construction site workers should not be centred on monetary incentives because it destroys intrinsic motivation, which makes construction site workers be less productive.

He proposed that intrinsic motivation should be encouraged so that parallel positioning of incentive structures with motivation can result in successful projects for the client and economic and psychological advantage to the contractor. Lewis (2003) pointed that a project manager needs to understand the individual desires of each team member. To achieve a project environment where the majority of the members involved are motivated about the project, project managers have to be sensitive to the needs and wants of the team members.

### Project Management Competency

The required project management skills can include: communication and feedback systems, quality, safety, risk and a conflict management system, supervisory skills, experience, coordination and leadership, communication skills, organizational structures, control mechanisms of subcontractors' works, and the overall managerial actions in planning, organizing, leading and controlling (Lam & Chan, 2004). Lam (2008) states that the management needs to be involved in the up-front planning efforts and effectiveness of communication, control system, management system and organizational culture. Studying the significant factors that cause delay of construction projects in Malaysia, Alaghbari, Kadir, Salim and Ernawati (2007) three categories for analysis, namely contractor, consultant and owner. As far as causes related to contractor actions are concerned, 'financial problems', 'shortage of materials' and 'poor site management' were ranked among the top three. Owner causes included 'delayed payments', 'slow decision-making' and 'contract scope changes'. The top three consultant causes were 'poor supervision', 'slowness to give instructions' and 'lack of experience'.

### Data Analysis/Findings

#### Regression analysis

The Multiple regression analysis model the relationship between the Project Planning as independent variable and Housing Project Implementation as dependent variable. The coefficient of determination ( $R^2$ ) and correlation coefficient (R) shows the degree of association between the two. The results of the analysis indicates that  $R^2=0.464$  and  $R = 0.681$  that indicates that there is a positive relationship between project planning and success of Project Implementation.

From the model, it is found that project implement would be at 1.000 holding determinants constant. A unit increase in Organization Planning would lead to significant increase in project implementation as  $R = 0.681$ ,  $t=7.814$  and  $P= 0.03 < 0.05$

**Model Summary (a) of project planning on implementation of housing projects in Kenya**

Model Summary	
R	R Square
0.681	0.464

The independent variable was project planning

**ANOVA (b)**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	12.425	3	4.141		33.128
Residue	7.130	57	0.125		0.001(a)
Total	19.555	60			

a. Predictors: (Constant), Project Planning, Project Control, Project Motivation and Project Management Competency

b. Dependent Variable: Implementation of housing projects in Kenya

Table 4.12 shows the F-Test results ( $F=33.128$ ,  $P=0.001 < 0.05$ ) which indicated that the model formed between Project Implementation and determinants of implementation of housing projects had a good fit for the data.

The four independent variables that were studied explain only 69% (since  $R=0.69$ ) of the regression model. This therefore means that other factors not studied in this research contribute 31% of the role the variables play in implementation of housing projects.

The significance value of 0.001 which is less than 0.05 thus the model is statistically significant in predicting the influence of the four variables on implementation of housing projects.

**Coefficients (a)**

Model	Unstandardized Coefficients			t
Sig.				
1	Constant	1.000		1.314
0.004				
	Project Planning	0.681	7.814	0.030
	Project Control	0.766	3.078	0.010
	Project Team Motivation	0.571	1.129	0.020
	Project Management Competency	0.478	2.715	0.400

a. Predictors: (Constant), project planning, project control, project team motivation and project management competency

b. Dependent Variable: Implementation of housing projects in Kenya.

**Conclusions**

The conclusions of the whole study was be made through comparison of the project objectives and the end results. The broad aim of this study has been largely achieved in a number of ways. Sufficient evidence has shown that in Kenya there have been investments in housing projects implementation which are influenced by various determinants.

The study concludes that good project implementation is essential. An individual or group of people should be given responsibility to drive success in project implementation. First, scope should be established and controlled and must be clearly defined and be limited. This includes the amount of the systems implemented and amount of projects process reengineering needed. Any proposed changes should be evaluated against projects benefits and, as far as possible, implemented at a later phase. The project must be formally defined in terms of its milestones. The critical paths of the project should be determined. Timeliness of project and the forcing of timely decisions should also be managed.

The study also concludes that formulation of clear project mission, project planning and controlling, project team motivation and top management support, government involvement/regulation and policy, objective management, stakeholder management and assigning of efficient and also interface towards surrounding projects and management. This is in line with

Crawford & Nahmias, ( 2010) who found that top management, objective support and stakeholder management are critical factors in implementation of housing projects in Kenya. Lack of finance seems to be the main constraint which prevents house development in Kenya. It has also shown that the available source of finance; the building materials have been unable to provide adequate funding to a reasonable and affordable standard.

The study also concludes that the practices that lead to reduction in delay on implementation of housing projects in Kenya are use of efficient project-specific technology, allocation of enough financial resources projects, assigning well trained workers for specific tasks, good project planning and controlling, conflict resolution during project implementation, establishment of good governance, good public accountability, management and good forecasting of work plan, estimation project duration, assigning specific tasks to project teams and also assigning projects to specific teams.

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