

**INFLUENCE OF MANAGEMENT STRATEGIES ON PROJECT
SUCCESS, THE CASE OF PROJECTS UNDERTAKEN BY
CONSTRUCTION COMPANIES IN MOMBASA COUNTY, KENYA.**

BY

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DECLARATION

This research project report is my original work which has never been presented to any other institution or university for the award of any degree, diploma or certificate whatsoever.

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L50/69963/2013

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DEDICATION

This research project report is dedicated to my beloved husband Harun Waweru for his invaluable support and encouragement throughout my studies, our lovely children Grace and Joshua, and my beloved mother Sarah who has always been an inspiration to me.

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ABSTRACT

Kenya has seen a significant rise in infrastructure developments in the recent past, especially in the fields of real estate development with several construction projects having failed to achieve project success. This is due to increase in risk, complexity and uncertainty. The general purpose of the study was to establish the influence of management strategies on success of projects undertaken by construction companies in Mombasa, Kenya. The research objectives included; to determine the extent to which top management support influences success of, to establish the extent to which the training of employees influences the success of construction projects Mombasa County, Kenya and to establish the extent to which project risk planning influences the success of construction projects in Mombasa County, Kenya. To achieve the objectives, descriptive survey design was adopted. This research design involves gathering data that describes events and then organizes, tabulates, depicts, and describes the data. The population of the study included the employees of Bamusa construction Ltd. The primary data for this study was collected using both closed and open ended structured questionnaires. The data was summarized, coded and tabulated. Descriptive statistics like means, standard deviation and frequency distribution was used to analyze the data. Data presentation was done by frequency tables for ease of understanding and interpretations. Inferential statistics such as correlation analysis were used to determine the relationship between management strategies and project success in the construction industry. The study established level of top management support including holding of regular meetings, support in risk identification and involvement in solving conflicts and mediating between groups were the greatest roles of the top level management. It also established that 40% of project officials understand the project requirements to a very little extent. Therefore training of the employees is very important for project success. A majority of the employees reported that lack of planning affects project success. The study recommends that a project risk manager should be appointed for the construction projects and that training programs be put in place for both new and existing employees.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

It is inevitable for unexpected events to occur during a project (Pinto, 2007). Risk often varies in the likelihood of its occurrence and its impacts on the success of one project to another and it also changes its nature during the project life cycle (Smith et al, 2006). Risks in the construction projects are a combination of activities that affect the project objectives of time, scope, cost and quality leading to the projects being unsuccessful. These risks are related to technical, management, logistical aspects or natural disasters. Some risks in the construction projects can easily be predicted while others are completely unforeseen. Project risks include changes in design and scope and also changes in the timelines for project completion, (Ewelina et al, 2006),

The construction industry is heterogeneous and enormously complex. There are several major classifications of construction that differ markedly from one another: housing, nonresidential building, heavy, highway, utility, and industrial (Keoki et al, 2008). Construction projects include new construction, renovation, and demolition for both residential and nonresidential projects, as well as public works projects, such as streets, roads, highways, utility plants, bridges, tunnels, and overpasses. The success parameters for any project are in time completion, within specific budget and requisite performance (technical requirement). The main barriers for their achievement are the change in the project environment. The problem multiplies with the size of the project as uncertainties in project outcome increase with size, (Dey, 2011).

Project management is applied in all industries, from IT related projects, pharmaceutical industry, to the construction sector. Each industry has developed their own management strategies, though the foundational ideas of the concept usually

remain the same regardless of the sector. No construction project is risk free and hence risk should be managed, minimized, shared, transferred or accepted but should never be ignored, (Jardine, 2007), in order to realize project success. Many problems encountered in the later phases of the construction projects lifecycle arise from unmanaged risks at the early stages (Chapman & Ward, 2003).The turmoil of the construction industry emphasizes the importance of effective project management strategies.

Management strategies help the key project participants – client, contractor or developer, consultant, and supplier – to meet their commitments and minimize negative impacts on construction project performance in relation to cost, time and quality objectives. The construction industry operates in a very uncertain environment where conditions can change due to the complexity of each project (Sanvido et al., 1992). The management strategies are beneficial to the project itself and the stakeholders since they provide a clear understanding and awareness of potential risks in the project. They also enable control over the whole project, provide more efficient problem solving processes, and effective use of resources. This is as a result of the analysis of project conditions already in the beginning of the project, (Perry, 1986).

Different countries report different challenges in successful completion of construction projects. In the case of the UK, the top three causes of failure in the housing construction projects are commercial risk, contractual risk and operational risk (Amos & Dents, 1997). In China project time overruns are caused by factors that are related to the contractor, the design team, the project, labour, client, material, equipment, (Zhang et al, 2003). In Vietnam infrastructure development and urbanization is at its highest level. However, cost and time overruns top the list of problems of project implementation in the country. Five major factors were identified

as the causes of poor project management. These included poor site management and supervision, poor project management assistance, financial difficulties of owner, financial difficulties of contractor, and design changes, (Le-Hoai et al, 2008).

In developing countries, 80% of the unsuccessful projects fail as a result of poor scope management (Nganga, 2013). In Botswana, most construction projects encounter cost overruns due to four related factors: variations, re-measurement of provisional works, fluctuation in the cost of labour and materials and contractual claims for extension of time with cost, (Chimwaso, 2000). Project management in the construction industry in Kenya is not effectively applied, (Gwaya et al, 2013). Out of one hundred of the public building projects in Kenya, seventy three experienced time overruns while thirty eight out of one hundred suffered cost overruns, (Mbatha, 1986). The resources in public and private building projects are not properly managed (Talukhaba, 1989). Project risks are also not adequately examined prior to the award of contracts in the projects and therefore, the major causes of cost and time risks in building projects in Kenya during the construction period is the variations that occurs in 73.50% of the building projects, (Gichunge, 2000).

1.2 Statement of the problem

Construction is an important player in the economy of developing countries, (Choge & Muturi, 2014). Construction projects are usually more risky as compared to other projects due to the complexity and uniqueness of the construction process like long period, complicated process, financial intensity and dynamic organization structures (Flanagan & Norman, 1993) and coordinating several activities. Each new project is unique and is often incorporated with new techniques and procedures. Hence management strategies must be integrated as a part of the project management in construction projects.

Construction is an important sector in Kenya which has seen a significant rise in infrastructure developments in the recent past, specifically in the areas of real estate development, energy and transport infrastructure. (Aleem et al, 2012). This rise has been accelerated by the rising population growth and the governments Vision 2030. Achieving project completion on time, within budget and meeting the specified quality standards are the criteria for project success.

However the construction projects in Kenya succumb to risks in cost overruns, delays in completing the projects and building defects, (Choge & Muturi, 2013). The failures are due to ineffective management practices and cost controls, inappropriate building regulations and codes as well as a lack of basic project planning and provisions, (Zwikael & Ahn, 2011). The function of the management strategies is to predict as many of the risks and problems as possible and to plan, organize and control activities so that the project is completed successfully. In order to assure the achievement of the project objectives, effective management strategies should be emphasized in construction project regardless of the project size (Hwang et al, 2013). The current economic downturn and challenges in a highly competitive construction sector require contractors to manage risks by themselves. This study investigated the influence of the support of top management, employee training and project risk planning as some of the management strategies employed in the construction industry.

1.3 Purpose of the study

The purpose of this study was to determine the influence of management strategies on the success of construction projects in Mombasa County, Kenya.

1.4 Research objective

The study was guided by the following research objectives:

- (i) To establish the extent to which the support from top management influences success of construction projects in Mombasa County, Kenya.
- (ii) To establish the extent to which the training of employees influences the success of construction projects Mombasa County, Kenya.
- (iii) To establish the extent to which project risk planning influences the success of construction projects in Mombasa County, Kenya.

1.5 Research questions

The study was guided by three questions

- (i) How does commitment and support from top management affect the success of construction projects in Mombasa County, Kenya?
- (ii) How does the training of employees affect the success of construction projects in Mombasa County, Kenya?
- (iii) How does project risk planning affect the success of construction projects in Mombasa County, Kenya?

1.6 Significance of the study

Since management is part of every project, the overall objective of this study was to establish the influence that certain management strategies have on the success of construction projects. This study will be of great value to project managers and other professionals in the construction industry by providing information on the influence management strategies on project success. The findings of this research will inform decision making for the management in future construction projects. The policy makers in the construction industry will gain from the study since it will highlight the aspects of management strategies which if incorporated in the regulations of construction projects success can be achieved.

1.7 Limitations of the study

The researcher encountered some limitations that challenged the access to information sought in the study. The information that was sought after was subject to feelings, beliefs attitudes and perceptions of the respondents. The respondents were reluctant to volunteer information fearing that the information required would expose their company and hence have a negative impact. The researcher countered this by having an introduction letter from the company and assuring them that confidentially will be observed and the findings will be strictly used for academic purposes. The study was also limited in achieving its objectives by lack of sufficient funds and time to access all the construction companies in Mombasa County.

1.8 Delimitations of the study

The aim of this study was to determine the influence of management strategies on project success in Mombasa County. The study focused on the case of one Construction Company in Mombasa County namely, Bamusa Construction Company even though there are several construction companies in Mombasa County.

1.9 Assumptions of the study

The study assumed that the respondents would give objective and honest responses. Another assumption of the study was that the questionnaire would be an adequate instrument in gathering sufficient information on support of top level management, employee training and project risk planning in construction companies.

1.10 Definition of significant terms

Project risk: This is an unforeseen event or activity that can impact on the progress or outcome in a negative way.

Project Risk Management: This is a process that involves identification of risk, implementing strategies to manage it and mitigation of those risks which can cause project not achieving its set objectives.

Project success: This is the achievement of all the project objectives which include cost effectiveness, quality, scope, timeliness and satisfaction of the users of the product.

Top Management Support: This is the executive management commitment towards project management decisions.

Training of employees: This is enabling the employees working on the project to access and gain competency in the relevant knowledge area.

Project risk planning: This refers to the process that involves setting the roadmap towards all activities necessary to achieve structured and systematic proper risk management

1.11 Organization of the study

The study is organized into five chapters. Chapter one covered the background of the study, statement of the problem, purpose of the study, research question, significance of the study, limitations of the study, delimitation of the study, definition of significant terms and the organization of the study. Chapter two is the literature review which captures the theoretical background and the management strategies in construction projects. Chapter three covered the research methodology under the sub-topics; Research design, Target population, Sample and sampling procedures, Research instrument, Validity of the instrument, Reliability of the instruments, data collection and data analysis. Chapter four was a representative of research data presentation, analysis and interpretation. Chapter five focused on the summary of the study findings, discussions, conclusions and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the past studies in relation to the strategies applied in risk management. The theoretical foundation on risk management practices will be discussed in detail. This chapter also presents the conceptual framework of the study.

2.2 Theoretical Review

The discipline of project management in the construction industry is still in its infancy according to Raz, (2002). Several theories applicable to project risk management and project success have been outlined. These include the agency theory, the utility theory and the uncertainty theory.

2.2.1 The agency theory

Agency theory extends the analysis of the firm to include separation of ownership and control and managerial motivation. In the field of corporate risk management agency issues have been shown to influence managerial attitudes toward risk taking and hedging (Smith & Stulz, 1985). The theory explains how best to organize relationships in which one party determines the work and the other party does the work. It also explains a possible mismatch of interest between shareholders, management and debt holders due to asymmetries in earning distribution, which can result in the firm taking too much risk or not engaging in positive net value projects (Mayers & Smith, 1987). Consequently, agency theory implies that defined hedging policies can have important influence on firm value (Fite & Pflleiderer, 1995). It becomes necessary to carefully identify the risks that may occur over the life of the project, from conception to operation, and allocate those risks to the participants who

are best able to manage them (Zou, Zhang & Wang, 2007). This study examined the support of top management in project success.

2.2.2 Utility theory

The utility theory describes the change in the tolerance for risk as the amount at stake. The decision maker is faced with a choice between two contradicting choices. The two contrasting cases of function of utility, that is the characteristic of a decision maker with an aversion to risk (Kaplinski, 2013). Reaction to risk depends on the views of damage of loss or benefits of gains. Reaction to outcome depends on the original expectation. Immature organizations seek absolute certainty while mature organizations expect to be able to manage risks and make proper provisions (Weaver, 2007). Risk planning will not change many aspects of what will actually happen, but key is preparing for the most likely eventuality and reacting

2.2.3 The uncertainty Theory

Uncertain entailment was proposed by Liu, 2010 as a methodology for calculating the truth value of an uncertain formula when the truth values of other uncertain formulas are given. Uncertainty is an important aspect in project management. It is closely associated with uncertainty management which is the process of integrating risk management and value management approaches to the construction process, (Smith, 2003). Uncertainty in projects is about ambiguity and variability (Chapman et al, 2006). Uncertainty can potentially have damaging consequences for the construction projects since risk is one of the implications of uncertainties on projects, (Perminova et al, 2008) and it culminates to unsuccessful projects.

Project management techniques and strategies are methods for reducing uncertainty and improving our odds of success. These strategies reduce risks in three fundamental ways namely: active planning and future stimulation, early problem recognition and

improved communication. Therefore, uncertainty requires disciplined risk management, the identification of potential risk that could affect the project followed by the planning of preventive measures to block adverse events, (Young & Jordan, 2008). The study will further investigate the influence of management strategies employed by construction companies on the project success. These are support and commitment from top level management, training of employees and project risk planning.

2.3 Support of top-level management and project success

Several researchers have studied on management in construction companies and identified various factors that affect the success of construction projects. There is a clear, widespread view that visible commitment from the very top is “a critical condition precedent to project adoption hence success. Belassi & Tukel, (1996), underline the importance of strong commitment by the top management in project success. They state that commitment of senior management in the sponsoring projects is crucial. Ifinedo, (2008) suggests that top level management support influences the success levels of the organizational system. Young and Jordan, 2008, argue that the essence of top management support is related to effective decision making to manage risk and to authorize process change. Galorath, (2006) in one of the studies argues that risk management needs top level management support in an organization.

Top management support in project implementation has two main facets: One providing leadership; and two providing the necessary resources. For successful implementation of the project, management should monitor the implementation progress and provide clear direction of the project. They must be willing to allow for a mindset change by accepting and supporting learning at all levels, including themselves (Rao, 2000). Other roles of top management in support of risk

management, developing project risk management procedures, , and establishing a project risk management department, (Zikwael & Ahn, 2011). The management should formulate a clear strategy that is tightly linked with the project and outlines the risk management activities, (Beckers & Chiara, 2013). Wang and Nah, (2010) add that overcoming resistance of project implementation is a key role of the top management. Hence, top management should involve itself in resolving conflict by mediating between groups and promoting project acceptance, by building cooperation between various stakeholders and involving users in the project implementation process. The top management supports the effective decision-making process in order to manage risk and helps in inculcating the culture of risk management in the company. It is important in every kind of management and it is thus an important factor for project success, (Zou, Zhang & Wang 2007).

In a study by Jones and Blunt (1999), two Swedish twinning projects were examined. The more successful one was the one between the Swedish National Audit Bureau and the Namibia Office of the auditor general, and the less successful partnership between Statistics Sweden and the National Statistical Center of Laos. They attributed the greater success of the Namibia project to factors relating to leadership and communication. At the individual level, the Namibia project was characterized by strong leadership in an auditor general who encouraged the kind of questioning climate and open, participatory management style'' that enhances organizational learning. Communication is yet another functional skill for top level management. It is a very important consideration for project success .According to Grabowski and Roberts, (1999) communication plays an important role in risk mitigation by providing opportunity for clarification and providing a channel for members to discuss how to improve the organization. The top management should ensure there is

a culture of openness where employees are encouraged to report potential risks to the management, (Seitter, 2006). The communication should start early in any project implementation and can include overview of the system, the reason for implementing it and the risk factors already identified. It should be consistent and continuous (Davenport, 1993, Dixon et al., 1994).

2.4 Training of employees and success of construction projects

Robbins, (1998) stated that a work team generates positive synergy in project risk management through coordinated effort. Risk strategies effectiveness is vital for the success of a project, (Kerzner, 1997). Some of the strategies to counter of the project team's incompetence are training and education, good staffing and effective teamwork. Training and education are actually considered a competitive way for organizations to achieve improvement. In order to complete a project successfully, it is critical that every project team member has a good understanding of the fundamental project requirements, and training on these requirements which is vital for the team to be competent to handle the project (Cleland & Ireland, 2002).The biggest tool to minimizing risk in construction projects is to ensure that the employees are well trained and they receive updated instruction on spotting potential risks.

Risk management is rarely applied in construction projects. The project teams handle the risks from informal approach. This technique is not employed because of less knowledge and awareness among the construction industry. Risk management should be applied into any construction project at the initial stage of the project in order to achieve the project objectives. This presents the need for project team training in the area of risk management. All participants in the project should be aware of risk management since risks occur in all stages of the project life cycle.

Construction companies provide training for their employees. This training can be classified into two methods namely: on the job training and the off the job training which is conducted way from the work site, (Treven, 2003).The success of the training programmes for construction companies is influenced by the high quality of the training manual, the high degree of the interactive learning employed, the extensive use of peer group critiquing skills and the critical support of highly motivated training staff, (Moss, 1997).

A plan of orientation training for new employees and updating existing workers training should be put in place. There should be written materials for all employees, and orientation training should be supplemented by ongoing training which can include instruction by supervisors, to peer trainers or outside expertise. This ensures that employees are aware of the building codes, and are updated on the building regulations, laws and other standards, (Seitter D, 2006). Nur et al (2012), in their study titled significant risk factors in construction projects identified the five most important risk factors in construction projects as shortage of material, late deliveries of materials, insufficient technology, poor quality of workmanship and cash flow difficulties. Poor quality workmanship is the result of insufficient training in the workforce. This study will focus on the extent to which training of employees affects risk management.

In a study on clients' perspectives of risk management practice in Malaysian construction industry , Norazian et al ,(2008) sought to identify the level of awareness among construction professionals towards risk management and to examine the policy undertaken when dealing with risks in a construction project. The findings were that 44.4% of the respondents claimed that the construction companies provide very minimum training on risk management, and even if it is so, it is for relevant personnel

only. This study will examine further the role of the three factors that is commitment of top leadership, communication and training to project risk management success. Saminu et al, 2003 in their study on factors affecting risk management in construction projects in India, recommended that well trained and experienced workmen should be employed.

Another descriptive study on factors affecting adherence to cost estimates, a survey of construction projects of Kenya National Highways Authority was carried out by Choge and Muturi, (2014). The study concluded that factors like design variation, and contractor experience are the major factors that affect adherence to cost estimates. Design variation factors include unexpected ground conditions, unrealistic requirements and specification, inadequate planning and poor design. The contractors experience is affected by inadequate technical and managerial skills, inadequate quality control skills, and poor site management. Ngundo, (2014), carried a research on factors affecting effectiveness of risk management in public housing construction projects in Kenya. He identified four important factors namely support of the top management, competence of the project team, project risk planning and project approval procedure as having an effect on the effectiveness of the risk management process. This study will further expound on the competence of the project team in terms of availability of training.

2.5 Project risk planning and success of construction projects.

Risk management is one of the nine knowledge areas propagated by the Project Management Institute (PMI). Risk management involves managing the potential risks by identifying, analyzing and addressing them. This helps to mitigate the likelihood of risk occurring and the negative impact when it happens (Partnerships BC, 2005). The PMBOK presents four phases of the risk management process: identification,

quantification, responses development and control. Risk identification is the first in the risk management process, as it attempts to identify the source and type of risks. It includes the recognition of potential risk event conditions in the construction project and the clarification of risk responsibilities (Wang & Chou, 2003). It develops the basis for risk analysis and control of risk management.

Risk analysis is the second stage in the risk management process where collected data about the potential risk are analyzed. Risk analysis can be described as short listing risks with the highest impact on the project, out of all threats mentioned in the identification phase (Cooper *et al.*, 2005). In the analysis of the identified risk, two categories of methods – qualitative and quantitative – have been developed. The qualitative methods are most applicable when risks can be placed somewhere on a descriptive scale from high to low level. The quantitative methods are used to determine the probability and impact of the risks identified and is based on numeric estimations (Winch, 2002). More companies tend to use a qualitative approach since it is more convenient to describe the risks than to quantify them.

This third step of the process, response development, indicates what action should be taken towards the identified risks and threats. The response strategy and approach chosen depends on the kind of risks concerned (Winch, 2002). The risk needs to have a supervisor to monitor the development of the response, which will be agreed by the actors involved in this risk management process. (PMI, 2004) .Winch (2002) argues that the lower the impact the risk has, the better it can be managed. Most common strategies for risk response are: avoidance, reduction, transfer and retention (Potts, 2008).

This final step of the risk management process is vital since all information about the identified risks is collected and monitored (Winch, 2002). The continuous supervision

over the risk management procedures helps to discover new risks, keep track of identified risks and eliminate past risks from the risk assessment and project (PMI, 2004). PMI (2004) also states that the assumptions for monitoring and controlling are to supervise the status of the risks and take corrective actions if needed. PMI (2004) describes the tools and techniques applied to monitor and control risk. These are risk reassessment identification of new potential risks, monitoring of the overall project status – are there any changes in the project that can effect and cause new possible risks, status meetings discussions with the risk owner, share experience and helping managing the risks and risk register updates. Risk register update is a method of creating a risk register where all risks and their management can be allocated in order to facilitate future projects (PMI, 2004).

Though risk management has become a concern in most projects, project risk management is not commonly applied with regard to the construction projects, (Klemetti, 2006). More construction companies are starting to become aware of the risk management procedures, but are still not using models and techniques aimed for managing risks. Cost of risk is a concept many construction companies have never thought about despite the fact that it is one of the largest expense items, (Cavicnag, 2009).

Risk management planning develops a detailed strategy for risk responses depending on the nature of likely risks. The plan should include formally defined and agreed milestones and deliverables (Holland & Light, 1999). These milestones and timelines enable appropriate project monitoring and control, as well as timely mitigation decisions when risk events emerge. Management of these deadlines needs to be met in order for the project to stay within agreed schedules and budgets and to maintain project team credibility. A workable risk plan should include a risk breakdown

structure, a quantification of impact values of identified risks, a risk register, and mitigation and contingency response plans, (Schroeder et al, 2011). Inadequate planning is among the factors which cause risk in construction projects. If adequate planning of the entire project is not observed due to negligence or inexperience it may lead to loss or even failure of the project, (Saminu et al, 2003).

2.6 Conceptual framework

Independent Variables

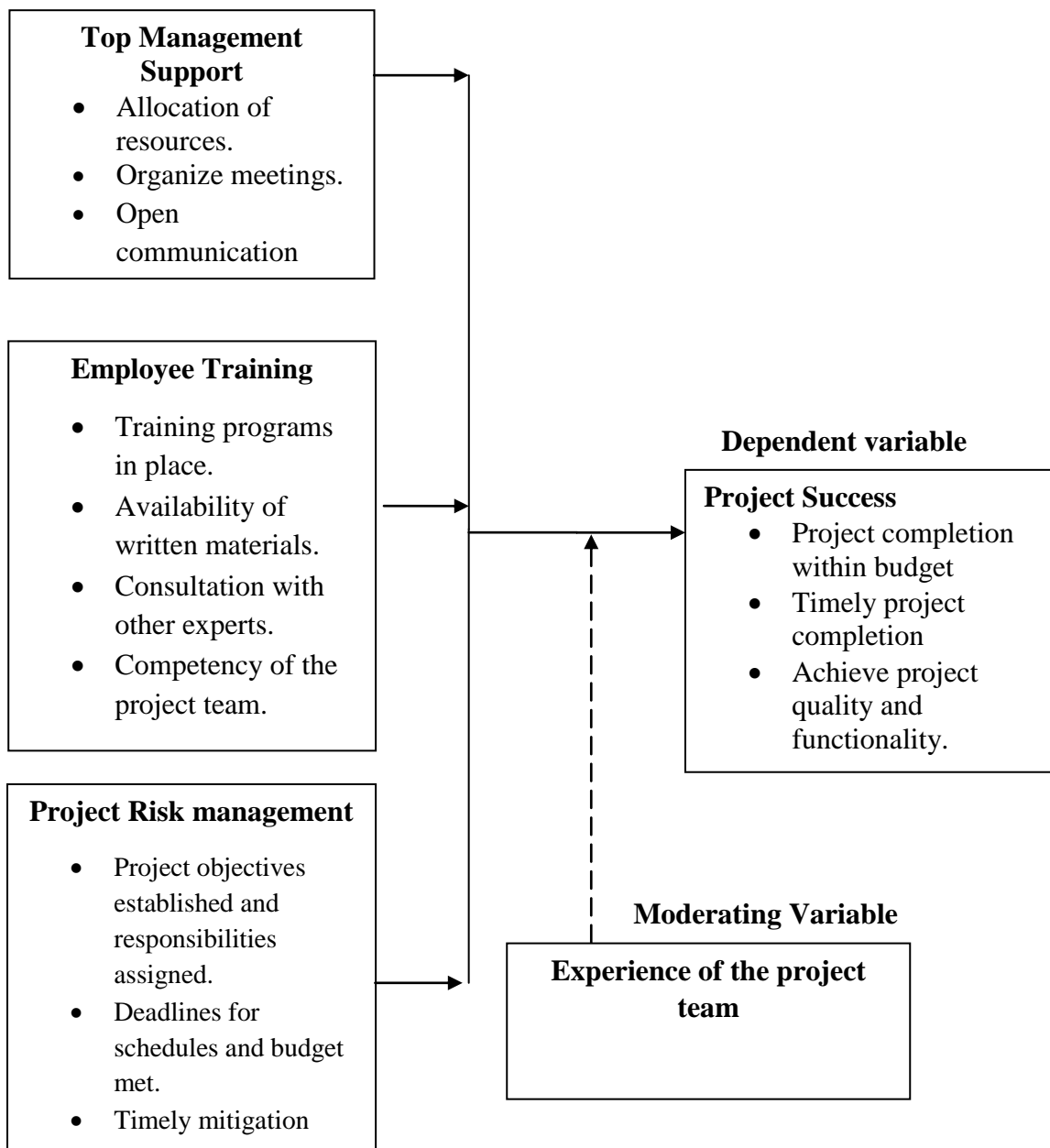


Figure 1: Conceptual Framework

2.7 Summary of Chapter

This chapter discussed the theoretical background on project success under three theories namely the agency theory, the utility theory and the uncertainty theory. The chapter has also reviewed the available literature on the support of top level management, the training of employees and project risk planning as pertains to project success.

2.8 Research Gaps

Construction is an important sector in Kenya which has risen due to population growth. Effective management strategies in projects are an area that needs to be stressed and investigated especially in the construction industry. The reviewed studies in Kenya identify and prioritize risks through empirical research with an aim to make suggestions for mitigating risks. Ngundo, (2014) carried out a research on effective risk management in housing projects, a case of Kibera Housing Scheme. The study identified the factors affecting effective risk management. Choge & Muturi, 2014 studied construction projects of Kenya National Highways Authority with focus on factors affecting adherence to cost estimates in construction projects. However in Kenya, there is no study done to investigate the influence of the management strategies on the success of projects from the view point of the construction company employees. This study is important in order to inform the decisions to be made by the stakeholders surrounding management and to ascertain the effectiveness of the strategies.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides information about the applied research process for the project report. This includes research design, target population, sample size and sampling procedures. It also includes research instruments, data collections procedures, data analysis techniques.

3.2 Research design

Descriptive survey research design was used. This research design is desirable for this study because it is used to obtain information concerning status of the phenomena to describe what exists with respect to variables or conditions in a situation, it allows the researcher to describe record, analyze and report conditions that exists or existed, (Kothari 2005).

3.3 Target population of the study

The population consisted of employees working in five projects managed by Bamusa Construction Company in Mombasa County. Each of the five projects has several staff working on it at different capacities comprising of foremen, site managers, engineers and the project managers and the general builders adding to a total of seventy staff.

Table 3.1: Target Population of the Study

| Respondents | Number | Population % |
|---------------------|-----------|--------------|
| Project Managers | 2 | 2.8 |
| Site Managers | 2 | 2.8 |
| Engineers | 4 | 5.7 |
| Supervisors | 8 | 11.4 |
| General contractors | 54 | 77.3 |
| TOTAL | 80 | 100 |

3.4 Sample size and sampling techniques

There are approximately 70 staff in the company. The sample size was calculated using the Yumane Formula which gave a sample size of 59 respondents. According to Mugenda and Mugenda (2003), a calculated sample size, of 10% to 30% of the targeted population would be sufficient. The research conducted a census of all the project managers, the engineers and the supervisors and site managers since the time and resources allowed. (Kothari, 2004). Simple random sampling was applied to sample the general builders. The categories and the way of distribution of questionnaires will be done across the employees are as follows.

Table 3. 2: Sample size of the study

| Respondents | Number | Sample size | Sample Proportion % |
|------------------|-----------|-------------|---------------------|
| Project Managers | 2 | 2 | 100 |
| Site Managers | 2 | 2 | 100 |
| Engineers | 4 | 4 | 100 |
| Supervisors | 8 | 8 | 100 |
| General Builders | 54 | 43 | 87 |
| TOTAL | 70 | 59 | 84 |

3.5 Data collection instruments

The questionnaire was the main source of primary data. This is because it provides a detailed individual feedback on project success. The questionnaire included an introductory section explaining the purpose of the study and was divided into sections relating to the study objectives. The questionnaire mainly contained closed and open ended questions and had 5 point Likert scale questions. A letter requesting for information was attached to the questionnaire explaining the purpose of the study to the respondents.

3.5.1 Pilot Testing

Key informants in the three categories of respondents was used in the pilot test to establish the reliability and validity of the instrument, the questionnaires were administered to the key informants and the information was analyzed to establish its validity and reliability. Any questions within the instrument found to be resulting in unreliable or invalid information was altered in order to result in more reliable and valid information.

3.5.2 Validity of the instrument

Validity refers to getting results that accurately reflect the concept being measured. In order to test and hence improve validity of the results the questionnaires were used in a pre-test where they were administered to two staff in the project team in order to get feedback and input on other important issues that should be considered. The pre-test confirmed that the questionnaire would measure the right concept.

3.5.3 Reliability of the instrument

Reliability is the extent to which results are consistent over time and an accurate representative of the total population of a study. The results of a study are said to be

reliable if they are reproducible under similar methodology, (Nahid 2003). Mugenda and Mugenda, (2003), define reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. The split-half method was used to test reliability of the tool. The sample was split into two, tests administered to the two halves using same tool, and the coefficient was computed using Spearman's Rank Correlation method. The instruments were concluded to be reliable since the coefficient of 0.903 was obtained a good indicator that the tools were reliable. The value of rank correlation nearer to +1 or -1 indicates high degree of positive or negative correlation between variables respectively.

3.6 Data collection procedure

The data was collected by the use of questionnaires to collect both quantitative and qualitative information. The questionnaire contained semi-structured questions since they are easy to analyze. The questionnaires were self-administered using give and take method.

3.7 Data analysis

Since some of the issues in the study involve perceptions descriptive statistics was the most appropriate method of data analysis. Descriptive techniques were chosen for this study because they involve measurement, classification, analysis, comparison and interpretation of data as well as describing the state of affairs as it exists (Kombo, 2006). Factor analysis was done to measure and establish the influence of management strategies on the success of construction projects. Information was categorized and grouped together to give a summary of results using descriptive statistics. The descriptive statistics used included measures of central tendency (mean), and measures of dispersion (standard deviation). These statistics were used to determine the relative importance of the critical factors of both the dependent and

independent variables. To determine the relationship between the different types of variables, Pearson's correlation was conducted.

3.8 Operational definitions of variables

Operational definitions are specific ways in which real cases can be classified into categories of the concept ones wants to use in research. The indicators were denoted by the main variables under study in order to render them measurable.

Table 3.3 Operational Definition of variables

| Objective | Variable | Type of Variable | Indicators | Measurement | Scales of measurement | Tools of analysis |
|---|-------------------------------|------------------|--|----------------------|-----------------------|-------------------|
| To establish the influence of the support from top management on the project success. | Project success | Dependent | Completed within budget Timely completion Achieved quality and functionality | Dimension of success | Nominal | Descriptive |
| To establish the influence of the support from top management on the project success | The support of top management | Independent | Conflict resolution and mediating between groups. Clear communication strategy Monitoring project. | How many | Ordinal | Descriptive |
| To establish the influence of Project risk planning on project | Project risk planning. | Independent | Timely decisions Deadlines met for schedules and budgets | | Nominal | Descriptive |

| | | | | | | |
|---|-------------------|-------------|--|----------|---------|-------------|
| success. | | | Established objectives and allocation of risks. | | | |
| To establish the influence of training of employees on the success of projects. | Employee Training | Independent | <p>Training programs in place</p> <p>Quality of training materials used.</p> <p>Availability of written materials for reference</p> <p>Instructions given by supervisor.</p> | How many | Nominal | Descriptive |

**CHAPTER FOUR:
DATA PRESENTATION, ANALYSIS AND INTERPRETATION**

4.1 Introduction

This chapter focused on presentation, data analysis and interpretation .The objectives of the study were to establish the influence of management strategies on the success of construction projects.

4.1 Response rate

Table 4.1 shows the results of the response rate. The rate of 77.97% was achieved and the study considered this response rate adequate for the research.

Table 4.1 Response rate

| Category | Frequency | Percentage |
|---------------|-----------|------------|
| Responded | 46 | 77.97 |
| Not responded | 13 | 22.03 |
| Total | 59 | 100.0. |

4.2 Demographic characteristics of respondents

The study sought to establish the profile of the respondents in terms of gender, age bracket, and education level and working experience and the results are as shown on table 4.2.

Table 4.2 Demographic characteristics of respondents

| Characteristic | Frequency | Percentage | Cumulative percentage |
|--|-----------|------------|-----------------------|
| 1) Gender | | | |
| Male | 46 | 100.0 | 100 |
| 2) Age | | | |
| Below 30 | 7 | 15.2 | 15.2 |
| Between 31 - 40 | 29 | 63.1 | 78.3 |
| Between 41 - 50 | 10 | 21.7 | 100.0 |
| Total | 46 | 100.0 | |
| 3) Highest level of education attained | | | |
| University Level | 6 | 13.0 | 13.0 |
| Tertiary Level | 24 | 52.2 | 65.2 |
| Secondary | 1 | 2.2 | 67.4 |
| Primary | 15 | 32.6 | 100.0 |
| Total | 46 | 100.0 | |
| 4) Designation of the respondents | | | |
| Project Manager | 2 | 4.3 | 4.3 |
| Engineer | 4 | 8.7 | 13.0 |
| Site Manager | 2 | 4.4 | 17.4 |
| General Builders | 38 | 82.6 | 100.0 |
| Total | 46 | 100.0 | |
| 4) Length of time in the company | | | |
| 1 - 5 Years | 14 | 30.4 | 30.4 |
| 6 - 10 Years | 28 | 60.9 | 91.3 |
| 11 - 15 Years | 2 | 4.4 | 95.7 |
| Above 15 Years | 2 | 4.3 | 100.0 |
| Total | 46 | 100.0 | |

All the respondents in the study (100%) were men. This was representative of the population of the study. A greater percentage of the respondents (63.1%) were

between 31 to 40 years while 20.7% were between 45 and 50 years. The remaining 15.2% were below 30 years of age. A majority of the respondents 60.9% of the respondents reported to have worked there for between 6 and 10 years. 4.4% had worked for between 11 and 15 years while another 4.3% had worked there for above 15 years. A good percentage of the respondents (52.2%) reported to have tertiary level of education which comprises of certificate and diploma holders. 32.6% had primary level, 13% had university level and 2.2% had secondary school level. A greater percentage (82.6%) of the respondents reached to were general builders. 8.7% were engineers, 4.3% were project managers and 4.3% were site managers.

4.3 Rate of success of projects

The study sought to find the rate of success of projects undertaken by construction companies in Mombasa County. Table 4.3 below shows the results of the responses.

Table 4.3 Success rate of projects

| | Frequency | Percentage | Cumulative Percentage |
|-------|-----------|------------|-----------------------|
| Yes | 36 | 78.27 | 78.27 |
| No | 10 | 21.73 | 100.0 |
| Total | 46 | 100.0 | |

Most of the respondents (78.27%) reported that project success has been attained in the construction projects undertaken by the company. Only 21.73% reported that project success has not been attained.

4.3 Support of top level management and project success.

Table 4.4 shows the results on the responses on whether support of top level management influences project success.

Table 4.4 Support of top Management and project success

| | Frequency | Percentage | Cumulative Percentage |
|-------|-----------|------------|-----------------------|
| Yes | 35 | 76.0 | 76.0 |
| No | 11 | 24.0 | 100 |
| Total | 47 | 100 | |

Of all the respondents, 76% reported that the level of support from the top management has an influence on project success.

The study was interested in finding out the four highly loaded roles as the major roles of the top management. Table 4.5 shows the results of the factor analysis.

Table 4.5 rotated component matrix^a of the support of top level management

| | Component | | | |
|--|-----------|-------|-------|-------|
| | 1 | 2 | 3 | 4 |
| Establishing clear communication strategy | .923 | -.040 | -.015 | .015 |
| Assistance with extra resources when required | .234 | .764 | .203 | -.413 |
| Troubleshooting on behalf of project team | -.032 | .172 | .886 | -.127 |
| Embracing a culture of risk management | .055 | -.156 | .740 | .328 |
| Support in risk identification | -.045 | .021 | .117 | .895 |
| Solving conflicts and mediating between groups | -.208 | .921 | -.055 | .192 |
| Monitoring project implementation | .620 | .316 | .292 | .005 |
| | .663 | .528 | -.211 | .402 |
| Promoting project acceptance | -.802 | .287 | .061 | .244 |

Four roles were established to be the most important which are establishing a clear communication strategy, trouble shooting on behalf of the project team, support in risk identification and solving conflicts and mediating between group.

4.4 Relationship between the most important roles of top management.

By means of the Pearson correlation calculation, the study sought to establish the relationship between the major roles of the top management. Table 4.6 below represents the relationships.

Table 4.6 Cross tabulation of support in risk identification and establishing clear communication strategy

| | | Establishing clear communication strategy | | | | | Total |
|--------------------------------|--------------------|---|------------------|---------|--------------------|------------------|-------|
| | | Does not affect | Slightly affects | Affects | Moderately affects | Strongly affects | |
| Support in risk identification | Does not affect | 0 | 0 | 0 | 0 | 0 | 0 |
| | Slightly affects | 0 | 0 | 0 | 9 | 5 | 14 |
| | Affects | 0 | 0 | 5 | 5 | 5 | 15 |
| | Moderately affects | 0 | 1 | 7 | 0 | 7 | 15 |
| | strongly affects | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 1 | 12 | 14 | 17 | 44 |

It was seen that 70.6% of those who reported that establishing clear communication strategy as a role of top management strongly affects project success also reported that support in risk identification as a top management role either affects or moderately affects project success. 100% of those who reported that establishing clear communication strategy affects project success also reported that support in risk identification either affects or moderately affects project success.

Table 4.7 Chi-Square Tests on establishing a clear communication strategy and support in risk identification.

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 17.834 ^a | 6 | .007 |
| Likelihood Ratio | 25.184 | 6 | .000 |
| Linear-by-Linear Association | 2.261 | 1 | .133 |
| N of Valid Cases | 44 | | |

A strong relationship was established between the two roles of the top management at a significance level of 0.007. This shows that establishing a clear communication strategy to discuss arising problems greatly affects how support in risk identification is handled.

Table 4.8 Cross tabulation of solving conflicts and mediating between groups against establishing clear communication strategy.

| | | Establishing clear communication strategy | | | | | |
|--|--------------------|---|---------------|---------|--------------------|------------------|-------|
| | | Does not affect | Little effect | Affects | Moderately affects | Strongly affects | Total |
| Solving conflicts and mediating between groups | Does not affect | 0 | 0 | 0 | 4 | 1 | 5 |
| | Little effect | 0 | 0 | 0 | 0 | 1 | 1 |
| | Affects | 0 | 0 | 1 | 5 | 9 | 15 |
| | Moderately affects | 0 | 1 | 7 | 5 | 7 | 20 |
| | Strongly affects | 0 | 0 | 4 | 0 | 0 | 4 |
| Total | | | 1 | 12 | 14 | 18 | 45 |

Of those respondents who said that establishing clear communication strategy as a top management role strongly affects project success 88.9% reported that solving conflicts and mediating between groups affects or moderately affects project success.

Table 4.9 Chi-Square Tests on establishing clear communication strategy and solving conflicts and mediating between groups.

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 23.973 ^a | 12 | .021 |
| Likelihood Ratio | 25.164 | 12 | .014 |
| Linear-by-Linear Association | 5.445 | 1 | .020 |
| N of Valid Cases | 45 | | |

A strong relationship was seen between the two roles in relation to project success at a p value of 0.021. This suggests that establishing clear communication strategy greatly has an effect on how solving conflicts and mediating between groups is handled by the top management in relation to project success.

Table 4.10 Cross tabulation of troubleshooting on behalf of project team against Establishing clear communication strategy.

| | | Establishing clear communication strategy | | | | | Total |
|--|--------------------|---|------------------|--------------------|------------------|----|-------|
| | | Does not affects | Slightly affects | Moderately affects | Strongly affects | | |
| Troubleshoot on behalf of project team | Does not affect | 0 | 1 | 7 | 2 | 10 | 20 |
| | Slightly affects | 0 | 0 | 5 | 12 | 4 | 21 |
| | Affects | 0 | 0 | 0 | 0 | 4 | 4 |
| | Moderately affects | 0 | 0 | 0 | 0 | 1 | 1 |
| | Strongly affects | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 1 | 12 | 14 | 19 | 46 |

Of those who agreed that establishing a clear communication strategy as a role of the top management strongly affects project success, 73.7% also reported that troubleshooting on behalf of the project team will then have either very little effect or no effect at all in project success.

Table 4.11 Chi-square Tests on troubleshooting on behalf of project team and establishing clear communication strategy.

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 19.498 ^a | 9 | .021 |
| Likelihood Ratio | 22.005 | 9 | .009 |
| Linear-by-Linear Association | 2.340 | 1 | .126 |
| N of Valid Cases | 46 | | |

A strong relationship was established between the two roles of the top Management in relation to project success with a p value of 0.021. This was very significant at 95% Confidence Interval. This might imply that establishing a clear communication strategy will reduce the incidents of the top management having to troubleshoot on behalf of the project team.

4.4 Training of Employees and Project success

The study was interested in finding out the influence of employee training on the project success. Below are the findings.

4.4.1 Influence of lack of training on project success

The study sought to find out from the respondents whether lack of training for employees influences project success. The table 4.12 shows the results.

Table 4.12 Influence of lack of training on success of projects

| | | Frequency | Percentage | Cumulative Percentage |
|-------|-----|-----------|------------|-----------------------|
| Valid | Yes | 31 | 67.0 | 67.0 |
| | No | 15 | 33.0 | 100.0 |
| Total | | 46 | 100.0 | |

Of all the respondents 67% reported that lack of training of employees has an influence on project success while 33% responded that lack of training employees has no influence on project success.

4.4.2 Offering of training for new and existing employees

The study sought from the respondents whether the company offers training for new and existing employees. The results are indicated on table 4.13.

Table 4.13 Training for existing and new employees.

| | Company offers training for new employees | | Company offers ongoing trainings for existing employees | |
|-----|---|------------|---|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Yes | 42 | 95.5 | 41 | 93.2 |
| No | 2 | 4.5 | 3 | 6.8 |

The findings indicate that 95.5% of the respondents reported that the company offers training for new employees. 4.5% said that the company does not offer training to new employees. 93.2% reported that the company offers training to existing employees.

4.4.3 The extent of understanding of fundamental project requirements.

From the study the following were the results on whether the project officials understand the project requirements. Table 4.14 below represents the findings of the study.

Table 4.14 The extent to which project officials understand the project requirements.

| | Frequency | Percentage | Cumulative Percentage |
|-------------------|-----------|------------|-----------------------|
| Very great extent | 3 | 6.7 | 6.7 |
| Great extent | 8 | 17.8 | 24.4 |
| Moderate extent | 16 | 35.6 | 60.0 |
| Little extent | 18 | 40.0 | 100.0 |
| Total | 45 | 100.0 | |
| Missing System | 1 | | |
| Total | 46 | | |

It was reported that 40% of the project officials understand fundamental project requirements to a very little extent. 35.6% understand fundamental project requirements to a moderate extent and a cumulative of 24.4% to a great and very great extent. The study sought first to get the three highly rated statements to be the main statements of interest for employee training by use of factor analysis Table 4.15 indicates the results.

Table 4.15 Rotated Component Matrix^a of the aspects of employee training

| | Component | | |
|--|-----------|------|-------|
| | 1 | 2 | 3 |
| Knowledge and awareness of the risk management technique | .105 | .239 | .870 |
| Provision of training and orientation to new employees | .084 | .810 | .296 |
| Use of high quality training manuals in training program | .126 | .834 | -.120 |
| Availability of written materials for employees to refer | -.138 | .553 | -.688 |
| Provision of instructions by supervisors | .919 | .099 | .154 |
| Provision of training for existing employees | .937 | .064 | .044 |

The three major aspects of employee training were found to be provision of training for existing employees, use of high quality manuals in training programs and knowledge of the risk management technique.

4.4 Relationship between the most important factors of employee training

The study further sought to establish the relationship between the three most important factors of employee training. The table 4.16 illustrates the results.

Table 4.16 Cross tabulation between provision of training for existing employees and use of high quality training manuals.

| | | Use of high quality training manuals in training program | | | | | Total |
|--|--------------------|--|---------------|---------|--------------------|------------------|-------|
| | | Does not affect | Little effect | Affects | Moderately affects | Strongly affects | |
| Provision of training for existing employees | Does not affects | 0 | 0 | 0 | 0 | 0 | 0 |
| | Slightly Affect | 0 | 1 | 7 | 4 | 0 | 12 |
| | Affects | 0 | 5 | 4 | 1 | 0 | 10 |
| | Moderately affects | 0 | 3 | 1 | 0 | 4 | 8 |
| | Strongly affects | 0 | 5 | 0 | 10 | 1 | 16 |
| Total | | 0 | 14 | 12 | 15 | 5 | 46 |

It was seen that 100% of those who reported that the use of high quality training manuals in training program affects the project success also reported that provision of training for existing employees moderately affects or strongly affects project success. Further, 73.3% of those who reported that the use of high quality training manuals in training program moderately affects the project success also reported that provision of training for existing employees either affects or strongly affects project success.

Table 4.17 Chi-Square Tests on use of high quality manuals and provision of training for existing employees.

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 36.121 ^a | 9 | .000 |
| Likelihood Ratio | 39.030 | 9 | .000 |
| Linear-by-Linear Association | 1.255 | 1 | .263 |
| N of Valid Cases | 46 | | |

A strong relation was noted between the two statements at a p value of 0.000 which was very significant at 100% Confidence Interval. This implies that use of high quality training manuals in training program affects greatly the provision of training for existing employees.

Table 4.18 Cross tabulation of provision of training for existing employees : knowledge and awareness of the risk management technique

| | | Knowledge and awareness of the risk management technique | | | | | |
|--|--------------------|--|---------------|--------------------|------------------|----|-------|
| | | Does not affect | Little effect | Moderately Affects | Strongly affects | | Total |
| Provision of training for existing employees | Does not affect | 0 | 0 | 0 | 0 | 0 | 0 |
| | Slightly affects | 0 | 0 | 11 | 0 | 1 | 12 |
| | Affects | 0 | 0 | 6 | 4 | 0 | 10 |
| | Moderately affects | 0 | 0 | 0 | 0 | 8 | 8 |
| | Strongly affects | 0 | 1 | 9 | 4 | 2 | 16 |
| Total | | | 1 | 26 | 8 | 11 | 46 |

From the findings, 90.9% of those who reported that knowledge and awareness of the risk management technique strongly affects project success were also seen to agree that provision of training for existing employees either moderately affects or strongly affects project success. 100% of those who agreed that knowledge and awareness of

the risk management technique moderately affects project success also reported that provision of training for existing employees either strongly affects or affects project success.

Table 4.19 Chi-Square Tests on awareness of risk management techniques and provision of training for existing employees

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 39.839 ^a | 9 | .000 |
| Likelihood Ratio | 41.135 | 9 | .000 |
| Linear-by-Linear Association | 2.073 | 1 | .150 |
| N of Valid Cases | 46 | | |

A strong relationship was also established between the two at a significant level of 0.000. This shows that provision of training for existing employees has a great effect on the knowledge and awareness of the risk management techniques.

4.5 Project risk planning and project success

The study investigated the influence of project risk planning on project success. The respondents were requested to respond to whether project risk planning influences project success. Table 4.20 indicates the results.

4.20 Influence of project risk planning on project success

| | | Frequency | Percentage | Cumulative Percentage |
|---------|--------|-----------|------------|-----------------------|
| Valid | Yes | 28 | 62.0 | 63.0 |
| | No | 17 | 38.0 | 100.0 |
| Missing | System | 1 | | |
| Total | | 46 | 100 | |

It was found that 62% of the respondents reported that project risk planning has an influence on project success. Another 38% reported that project risk planning has no influence on project success. The study also was interested on the extent of the influence of lack of planning on the project success and the extent of the failure of management to allocate time and resources. The table 4.21 below illustrates the results.

Table 4.21 Lack of planning and project success

| | To what extent does lack of planning affects project success? | | To what extent does management fail to allocate resources and time for risk planning? | |
|-------------------|---|------------|---|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Very great extent | 19 | 41.3 | 0 | 0 |
| Great extent | 13 | 28.3 | 14 | 30.4 |
| Moderate extent | 14 | 30.4 | 27 | 58.7 |
| Little extent | 0 | 0 | 5 | 10.9% |

From the findings, 41.3% of the respondents reported that lack of planning affects project success to a very great extent and 28.3% to a great extent. 58.7% also reported that the management fails to allocate resources and time for risk planning to a moderate extent. 10.9 % of the respondents reported that the management fails to allocate resources and time for risk planning to a little extent. From the five factors on project risk planning in relation to project success, we wanted to find out the extent to which these factors affect project success. Using factor analysis, we first got the three highly loaded factors to be considered the main factors on project risk planning.

Table 4.22 Rotated Component Matrix^a for project risk planning.

| | Component | | |
|--|-----------|-------|-------|
| | 1 | 2 | 3 |
| Project team understanding of risk management procedure | -.608 | -.374 | .262 |
| Establishing of objectives and allocation of risks | -.111 | -.031 | .861 |
| Timely mitigation decisions when risks arise | .300 | .603 | -.416 |
| Establishment of formally defined and agreed upon milestones | .384 | .281 | .540 |
| Adherence to schedules and budget | .931 | -.079 | .102 |

The most important factors were found to be adherence to cost schedules and budgets, timely mitigation decisions and establishing of objectives and allocation of risks.

4.5.1 The relationship between the important factors of project risk planning.

By calculating the Pearson correlation, the study investigated the relationship between the three most important factors in project risk planning. The results are as shown in the table 4.23 below.

Table 4.23 Cross tabulation of establishing of objectives and allocation of risks against timely mitigation decisions when risks arise.

| | | Timely mitigation decisions when risks | | | | | Total |
|--|--------------------|--|------------------|---------|--------------------|-------------------|-------|
| | | Does not affect | Slightly affects | Affects | Moderately affects | Adversely affects | |
| Establishing of objectives and allocation of risks | Does not affect | 0 | 0 | 0 | 0 | 0 | 0 |
| | Affects | 0 | 4 | 0 | 1 | 1 | 6 |
| | Slightly affects | 0 | 6 | 0 | 1 | 4 | 11 |
| | Moderately affects | 0 | 6 | 0 | 11 | 0 | 17 |
| | Adversely affects | 0 | 3 | 0 | 5 | 4 | 12 |
| Total | | 0 | 19 | 0 | 18 | 9 | 46 |

Amongst the respondents, 88.9% of the respondents who reported that timely mitigation decisions when risks arise moderately affects project success also reported that establishment of objectives and allocation of risks either moderately affects or adversely affects project success.

Table 4.24 Chi-Square Tests on establishing objectives and allocation of risks and timely mitigation decisions.

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 14.595 ^a | 6 | .024 |
| Likelihood Ratio | 18.234 | 6 | .006 |
| Linear-by-Linear Association | 1.715 | 1 | .190 |
| N of Valid Cases | 46 | | |

There was found to be significant at a significance level of 0.024. This shows that timely mitigation decisions when risk arise influences how establishing of objectives and allocation of risks is carried out in the company.

Table 4.25 Cross tabulation of establishing of objectives and allocation of risks against adherence to schedules and budget.

| | | Adherence to schedules and budget | | | | | Total |
|--|--------------------|-----------------------------------|---------|------------------|--------------------|-------------------|-------|
| | | Does not affect | Affects | Slightly affects | Moderately affects | Adversely affects | |
| Establishing of objectives and allocation of risks | Does not affect | 0 | 0 | 0 | 0 | 0 | 0 |
| | Affects | 0 | 0 | 5 | 1 | 0 | 6 |
| | Slightly affects | 0 | 1 | 6 | 4 | 0 | 11 |
| | Moderately affects | 0 | 5 | 5 | 4 | 3 | 17 |
| | Adversely affects | 0 | 0 | 9 | 3 | 0 | 12 |
| Total | | 0 | 6 | 25 | 12 | 3 | 46 |

All the respondents who reported that adherence to schedules and budgets adversely affects project success also reported that establishment of objectives and allocation of risks moderately affects project success.

Table 4.26 Chi-Square Tests on establishing of objectives and allocation of risks against adherence to schedules and budget.

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 15.601 ^a | 9 | .076 |
| Likelihood Ratio | 18.037 | 9 | .035 |
| Linear-by-Linear Association | .029 | 1 | .866 |
| N of Valid Cases | 46 | | |

The two factors were seen to be related at a p value of 0.076 which is significant at 90% confidence interval. This shows that adherence to schedules and budgets has some effect on how establishing objectives and allocation of risks is done.

4.6 Combined influence of the management strategies on projects success.

The study sought to establish the extent to which certain management strategies influence project success. The table 4.27 below shows the results.

Table 4.27 Influence of management strategies on project success

| | Extent to which support of top management affects project success | | Extent to which project risk planning affects project success | | Extent to which training of employees affects project success | |
|--------------------|---|------------|---|------------|---|------------|
| | Frequency | Percentage | Frequency | Percentage | Frequency | Percentage |
| Does not affect | 0 | 0 | 0 | 0 | 1 | 2.2 |
| Slightly affects | 8 | 17.4 | 22 | 47.8 | 6 | 13.0 |
| Affects | 0 | 0 | 0 | 0 | 0 | 0 |
| Moderately affects | 24 | 52.2 | 13 | 28.3 | 10 | 21.8 |
| Adversely affects | 14 | 30.4 | 11 | 23.9 | 29 | 63.0 |

From the findings, 52.2% of the respondents feel that support of the top management moderately affects the success of the projects while 17.4% had opinion that the support of the top management has a slight effect in the success of the project. On Project risk planning, 47.8% of the respondents feel that project risk planning slightly affects the project success. However 23.9% said that project risk planning adversely affects project success. On Employee training, 63% of the respondents had the opinion that training of employees adversely affects project success. The descriptive statistics comparing the mean and standard deviation are shown of table 4.28 below.

Table 4.28 Descriptive statistics

| | N | Range | Mean | Standard deviation | variance |
|------------------------|----|-------|------|--------------------|----------|
| Top management support | 46 | 3 | 3.43 | 1.15 | 1.32 |
| Employee training | 46 | 4 | 4.09 | 1.78 | 3.17 |
| Project Risk planning | 46 | 3 | 3.00 | 1.43 | 2.04 |

From the descriptive statistics, employee training had the highest mean of 4.09 which implies that training strongly influences project success. The other variables of top management support and projects risk planning had a mean of 3.43 and 3.00 respectively. This implies that they moderately influence project success.

CHAPTER FIVE:

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This research aimed at examining the influence of various management strategies on the success of projects undertaken by construction companies in Mombasa County, Kenya. The study was conducted on the employees of Bamusa Construction Company. This chapter will discuss the summary of the findings, the conclusions from the research and the recommendations to help in achievement of project success.

5.2 Summary of study findings

The findings of the study are based on a survey done at Bamusa Construction Company via questionnaires completed by the employees.

A majority, 76% of the respondents reported that support of the top management influences project success. Top level management support was established to have a moderate influence on project success with a mean of 3.43. Four roles of the top management were found to have the greatest influence on projects success. These are establishing clear communication strategy, troubleshooting on behalf of project team, support in risk identification and conflict resolution and mediation. These four factors were also found to have a strong correlation.

Employee training was found to have the greatest influence on project success with a mean of 4.06. From the finding 67% of the respondents reported that lack of training for employees has an influence on project success. The study found out that 40% of the project officials understand fundamental project requirements to a very little extent. 35.6% understand fundamental project requirements to a moderate extent and

a cumulative of 24.4% to a great and very great extent. Further study indicated that the most important aspects of employee training are provision of training for existing employees, use of high quality manuals in the training program and knowledge and the awareness of the risk management technique with the component of 0.937, 0.834, and 0.874 respectively.

A strong relationship at a p value of 0.00 between high quality training manuals and provision of training for existing employees was established. A strong relationship between provision of training for existing employees and the knowledge and awareness of the risk management techniques was also established.

From the findings 41.3% of the respondents reported that lack of planning affects project success to a very great extent and 28.3% to a great extent. However project risk planning was found to have the least influence on success of projects at a mean of 3.00. 58.7% also reported that the management fails to allocate resources and time for risk planning to a moderate extent. 10.9 % of the respondents reported that the management fails to allocate resources and time for risk planning to a little extent. The five most important aspects of project risk planning were found to be adherence to schedules and budgets, establishing of objectives and allocation of risks and timely mitigation decisions when risks arise.

There is a strong relationship between timely mitigation decisions and establishing of objectives and allocation of risk at 0.024 level of significance. Between establishing of objectives and allocation of risks and adherence to schedules and budgets ,a p value of 0.076 was found implying that adherence to schedules and budgets has some effect on how establishing objectives and allocation of risks is carried out in the project.

5.3 Discussions

The findings of the study are in agreement with Ifinedo 2008, who found out that commitment of senior management in projects is critical. One of the major roles of top management was established to be resolving of conflict which is in line with the conclusion of Wang & Nah, (2010) that overcoming the resistance of project implementation is a key role of top management. Establishing clear communication strategy greatly impacts on how solving conflicts and mediating between groups is handled by the top management in relation to project success. There is also strong indication that establishing a clear communication strategy will reduce the incidents of the top management having to troubleshoot on behalf of the project team.

The findings emphasize the role of training in establishing project objectives as 67% of the respondents reported that lack of training affects project success. As discussed by Cleland & Ireland 2002, training on the fundamental project requirements is vital for the project team to be competent. This is also in agreement with Ngundo, 2014 who found out that one of the major factors affecting effective risk management in projects is the competence of the project team.

From the findings, 62% of the respondents confirmed that lack of project risk planning affects project success. The respondents confirmed that timely mitigation decision is crucial to projects success which is in agreement with the discussion of Schroeder et al, 2011. It was found that is that timely mitigation decisions affect how establishing of objectives and allocation of risks is carried out in the project. According to Holland & Light 1999, the project risk planning should include formally defined and agreed milestones.

5.4 Conclusions

The study concluded that top management support is very important in successful completion of projects. The roles played by top managements during project implementation influence the success of projects. Employee training is very crucial and influences the success of construction projects as majority of the respondents were in support of this. Project risk planning has a significant influence on projects success.

5.5 Recommendations

The study makes some recommendations that will enhance the success of projects undertaken by construction companies. The top management support and commitment is very crucial in the success of construction projects. The roles that the top management plays during project implementation greatly affect the overall success of project and should be taken seriously. Top management support should be standardized to all projects undertaken by the construction companies.

23.9% of the respondents agreed that project risk planning adversely affects while 47.8% feel that it slightly affects the project success. The study recommends appointment of a project risk manager to assist the project manager in risk management and a risk management department in the construction companies to ensure project success.

63% of the respondents were of the opinion that training of employees adversely affects projects success. Therefore the study strongly recommends that there should be standardized training programs in place for both new and existing employees in the construction companies. All the employees should be trained on the risk management procedure.

5.6 Suggestions for Further Research

The study gave consideration to a few management strategies and therefore did not exhaust and it could not exhaust all the management strategies that influence the success of construction projects. Therefore there is need for more research which will be inclusive of other management strategies that influence success of construction projects.

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APENDICES

APENDIX I: INTRODUCTORY LETTER

DAMARIS GITAGIA,
P.O. BOX 87168-80100
MOMBASA

Dated: August, 2015

Dear (Respondent),

I am a post graduate student at University of Nairobi undertaking a research project on, **Factors affecting effectiveness of risk management in construction projects undertaken by construction companies in Mombasa, Kenya.**

You have been selected for this study and you have been selected to fill the questionnaire.

Kindly respond to the questions in the attached questionnaire. The information provided will exclusively and solely be used for academic purposes and will be treated with the confidence it deserves. Upon request, you will be furnished with a copy of the final report.

Your cooperation will be highly appreciated.

Yours Faithfully,

Damaris Gitagia.

APPENDIX II: QUESTIONNAIRE

Please tick (√) the box that matches your answer to the questions and give the answers in the spaces provided as appropriate. The information you provide will be treated with utmost confidentiality.

SECTION A: BACKGROUND INFORMATION

1) Gender (Tick the appropriate answer)

- i. Male
- ii. Female

2) What is your age? (Tick appropriate range).

- i. 30 years and below
- ii. 31 – 40 years
- iii. 41 – 50 years
- iv. Over 50 years

3) Highest level of education attained

- i. University Level
- ii. Tertiary Level
- iii. Secondary level
- iv. Primary level

4) What is your designation in the enterprise?

- i. Project Manager
- ii. Engineer
- iii. Site manager
- iv. General builders

5) How long have you worked with the construction company in Mombasa County?

- i. 1-5 years []
- ii. 6-10 years []
- iii. 11-15 years []
- iv. Above 15 years []

6. Is project success attained in construction projects undertaken by your company in Mombasa County?

- i. Yes []
- ii. No []

SECTION B

7. In your opinion rank the extent to which the three factors below affect the success of construction projects in your company. (1= Does not affect at all, 2=Affects, 3=Slightly affects, 4=Moderately affects, 5=Strongly affects)

- i. Support of the top management []
- ii. Project risk planning []
- iii. Training of employees []

PART (I) SUPPORT OF THE TOP MANAGEMENT AND PROJECT SUCCESS.

8. Does support from top management influence project success in your company?

- i. Yes []
- ii. No []

9. How does each of the following top management roles in the company affect success of construction projects in Mombasa? (5=strongly affects, 4=moderately affects, 3= affects 2= little effect, 1= does not affect)

| Top management support | 1 | 2 | 3 | 4 | 5 |
|--|----------|----------|----------|----------|----------|
| Establishing a clear communication strategy | | | | | |
| Assistance with extra resources when required | | | | | |
| Trouble shooting on behalf of the project team | | | | | |
| Embracing and inculcating a culture of risk management awareness | | | | | |
| Support in risk identification | | | | | |
| Solving of conflicts and mediating between groups. | | | | | |
| Monitoring project implementation | | | | | |
| Promoting project acceptance | | | | | |

10. To what extent does effective decision making by the top management affect project success

in Mombasa County?

- i. Very great extent []
- ii. Great extent []
- iii. Moderate extent []
- iv. Little extent []
- v. Not at all []

PART (II) TRAINING OF EMPLOYEES AND PROJECT SUCCESS.

11. Does lack of training of employees influence project success of construction projects in Mombasa county?

- i. Yes []
- ii. No []

12. Does your company offer training for new employees?

- i. Yes []
- ii. No []

13. Does your company offer ongoing training for existing employees?

- i. Yes []
- ii. No []

14. To what extent do project officials understand the fundamental project requirements?

- vi. Very great extent []
- vii. Great extent []
- viii. Moderate extent []
- ix. Little extent []
- x. Not at all []

15. To what extent based on a likert scale with values 1-5 do you rate each of the following statements concerning training of employees and their effect on project success of construction projects in Mombasa County?

(5=strongly affects, 4 =moderately affects, 3= affects 2= little effect, 1= does not affect)

| Training of employees | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| Knowledge and awareness of the risk management technique | | | | | |
| Provision of training and orientation for new employees. | | | | | |
| Use of high quality training manuals in the training programmes | | | | | |
| Availability of written materials for employees to refer. | | | | | |
| Provision of instructions by supervisors | | | | | |
| Provision of training for existing employees. | | | | | |

PART (III) PROJECT RISK PLANNING AND PROJECT SUCCESS

16. Does project risk planning in construction projects influence project success

in Mombasa County? (Tick One)

i. Yes

ii. No

17. To what extent does lack of planning for construction projects affect project

success in Mombasa County? (Tick one)

i. Very great extent

ii. Great extent

iii. Moderate extent

iv. Little extent

v. No extent

18. To what extent does top management in the company fail to allocate resource and time for project risk planning in Mombasa County?(Tick one)

- i. Very great extent []
- ii. Great extent []
- iii. Moderate extent []
- iv. Little extent []
- v. Not at all []

19. In your opinion rank the extent to which the factors below affect the success of construction projects in Mombasa County. (1= Does not affect at all, 2=Affects,3=Slightly affects,4=Moderately affects, 5=Strongly affects)

- i. Project team understanding of the risk management procedure []
- ii. Establishing of objectives and allocation of risk []
- iii. Timely mitigation decisions whenever risks arise []
- iv. Establishment of formally defined and agreed upon milestones []
- v. Adherence to schedules and budget []