

**ROLE OF PROJECT MANAGEMENT SKILLS ON PERFORMANCE OF
CONSTRUCTION PROJECTS: A CASE OF SELECTED
CONSTRUCTION FIRMS IN MOMBASA COUNTY, KENYA**

BY

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DECLARATION

I hereby declare that this research project is my own original work and that no part of it has been submitted for another dissertation in this university or elsewhere for the purpose of examination or otherwise

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DEDICATION

This project is dedicated first and foremost to the Almighty God whose providence, grace, and care I cherish.

I sincerely dedicate this project to my family (Angella, Earnest & Elsie Gitonga) for their understanding while I was away from them pursuing the studies and for their support. If it were not for you I would not have gone this far.

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ACRONYMS AND ABBREVIATIONS

| | |
|--------------|---|
| BSI | British Standards Institute |
| CBNP | Central Bureau of National Planning |
| DPPPD | Directorate of Public-Private Partnership Development |
| EU | European Union |
| GoK | Government of Kenya |
| GDP | Gross Domestic Product |
| IPMA | International Project Management Association |
| KAM | Key Account Manager |
| KRA | Kenya revenue Authority |
| MDG | Millennium Development Goals |
| PM | Project management |
| PMI | Project Management Institute |
| RM | Risk Management |
| RoK | Republic of Kenya |
| SPSS | Statistical Package for Social Sciences |
| WB | World Bank |

ABSTRACT

Various construction firms have used project management skills and techniques as a means of bridging the gap between failure and success in implementation of projects. Despite this increased awareness of construction project management skills, by these construction firms, projects still fail. The objective of this study was to investigate the role of construction project management skills on performance of construction projects with reference to construction firms based within Mombasa. The survey targeted selected construction firms within the Mombasa county and especially the ones that deal with the major projects that have high impacts to the country economy currently being undertaken within the County. The specific objective was to determine the role of project Planning skills on construction projects in construction firms based within Mombasa, to assess the role of communication skills on construction projects in construction firms based within Mombasa, to assess the role of risk management skills on construction projects in construction firms based within Mombasa. Lastly, the study sought to determine the role of monitoring and control skill on construction projects in construction firms based within Mombasa. The study will be of benefit to the projects managers, sponsors, public & private sector, research organizations and scholars who would want to carry out further research in this area. The study adopted a descriptive research design with a target population of 111 staffs working at the construction firms in Mombasa which generated a sample of 33 respondents. Questionnaires was the main data collection instruments. The study employed both quantitative and qualitative research in its data analysis. Data was presented using tables. The study found out that Projects are constrained by inadequate planning skills that are required for effective planning for project success; Project planning is complicated and risky, hence requires varying skills sets for successful project implementation and management; Increasing complexity in the projects with pressure of time and costs has led to the introduction of high quality software and hardware which requires skilled planning.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The construction industry accounts for 6-9% of the Gross Domestic Product (GDP) of many countries (Chitkara, 2011). In various construction firms, the rate of business failure is lack of skills and knowledge. There is vast scope for improving performance through project management skills in construction industry, where men, materials, machinery, money and management work together to build a facility. The value of annual construction activity in the world exceeds one trillion dollars.

The total annual cost of worldwide project failures alone is \$7.5 trillion dollars, according to Maylor, (2009). A government report from the Ministry of Roads & Public Works (GoK, 2009) identified eight main reasons for the failure of government projects: inadequate planning; insufficient buy-in by senior management; failure to engage effectively with key stakeholders; a lack of technical skills; poor project monitoring and review; inadequate initial evaluation of the project; poor networking skills; and failure to integrate the disparate parties needed to deliver project success. All are issues that can be improved through training and development. Moreover, these reasons apply equally to projects in public and private-sector organizations.

The construction industry is one of the key contributors to most economies. The importance of the construction industry to the economy can be measured by its contribution to the Gross Domestic Product (GDP); its contribution to investment; and the volume of labour employed. Internationally, the construction industry contribution to GDP is from 3% to 10%; typically lower in developing countries and higher in developed countries. Since early 1970s, the construction industry has played an important role in terms of the economic, social and cultural development of Indonesia. The industry contribution to the GDP increased from 3.9% in 1973 to 7.9% in 1996. This constitutes about 60% of gross fixed capital formation. Construction work from 1996 to 1999 was sharply reduced due to the Asian monetary crisis, but went into an upswing from 2000 to 2007. The construction sector's contribution to the country's total GDP increased from 5.5% to 7.7% in 2007 and

this is set to expand to 7.8% in 2012. Despite this, the growth in construction activity has been slowing since mid-2008, according to Indonesia Economic Quarterly data (World Bank, 2009) but the slowdown has not been great and spending was still 6.3 percent higher in the first quarter of 2009 on a year earlier. Central Bureau of National Planning (Bappenas) projected the construction market of this country for the period of 2010 – 2014 to be about US\$180 billion (Directorate of Public-Private Partnership Development, 2009).

Construction activities and its output is an integral part of a country's national economy and industrial development. The construction industry is often seen as a driver of economic growth especially in developing countries. The industry can mobilize and effectively utilize local human and material resources in the development and maintenance of housing and infrastructure to promote local employment and improve economic efficiency (Anaman and Amponsah, 2007).

Field and Ofori (2008), stated that the construction makes a noticeable contribution to the economic output of a country; it generates employment and incomes for the people and therefore the effects of changes in the construction industry on the economy occur at all levels and in virtually all aspects of life (Rameezdeen, 2007). This implies that construction has a strong linkage with many economic activities (Rameezdeen, 2007), and whatever happens to the industry will directly and indirectly influence other industries and ultimately, the wealth of a country. Hence, the construction industry is regarded as an essential and highly visible contributor to the process of growth (Field and Ofori, 2008).

The significant role of the construction industry in the national economy has been highlighted by Turin (2009). On the basis of cross section of data from a large number of countries at various levels of development, Turin (2009) argued that there is a positive relationship between construction output and economic growth. Furthermore, as economies grow construction output grows at a faster rate, assuming a higher proportion of GDP. (Turin, 2009).

The construction industry plays significant role in the economy of developing countries. For example, in many developing countries, major construction activities account for about 80% of the total capital assets, 10 % of their GDP, and more than 50% of the wealth invested in fixed assets. In addition, the industry provides high employment opportunity, probably next after agriculture (Ofori, 2006). Despite the construction industry's significant contribution to

the economy of developing countries and the critical role it plays in that country's development, the performance of the industry still remains generally low. As (Idoko, 2008) noted, many projects in developing countries encounter considerable time and cost overruns, fail to realize their intended benefit or even totally terminated and abandoned before or after their completion . Moreover, the development of the construction industry in developing countries generally lags far behind from other industries in those countries and their counter parts in developed nations.

1.2 Statement of the problem

The business and construction industry is becoming increasingly global and the role of the project management professional now includes many front-end services, which increases the required skill set of new graduates (Choudhury, 2000; Kay, 2001). Project management is no longer a special-need management (Arain, 2005a). Alternative contractual delivery systems, collaborative partnerships, new management initiatives, and global product markets require professionals and students to have a broader awareness of construction methods and project management issues. Duncan (1996), defined project management as the application of knowledge skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from the project. Project management is rapidly becoming a standard way of doing business (Arain and Assaf, 2003). An increasing percentage of the typical firm's effort is being devoted to projects. The future promises an increase in the importance and the role of projects in contributing to the strategic direction of organizations (Arain, 2005b). In the developed world, many academic disciplines inside and outside of project management education have successfully used study abroad programs as an effective means of broadening project management students' academic, personal, and professional views of the world (NASFA, 2003). This certainly is the dawning of the age of Project Management in the developing countries. Duncan (1996) identified different stages of project management such as project initiation, planning, execution, control and the closing process. Bryde (2003) discussed different terms which have emerged since the beginning of 1990's to describe the project management approach. These terms include: modern project management, management-by-projects, projects (project management) culture, and beyond the Gantt chart.

Empirical data (Chamoun,2011)and (World Bank, 2009) shows project management skill as having the most significant impact on achieving project success which is equated to achieving project objectives. Cooke-Davies, (2010) consistently shows well-trained teams deliver more benefit to project management than undertrained teams. Well trained and knowledgeable project managers and staff aggressively seek ways to control cost and to effectively reduce risks to projects by carefully selecting the most appropriate technologies, hiring the most affordable and experienced consultants, and using sophisticated management practices to ensure functional success. A project's level of embedded skill will affect project outcome regardless of project complexity. The likelihood of project success is proportional to the skill level of the team working on it (International Labour Organization, 2001). Stated bluntly, the risk of a project failing to meet its objectives rises when the project team does not have the skills to do the job.

Indeed when these private projects fail to achieve the set objectives, the basic project constraints are usually advanced as reasons for the same. However this would have been avoided or reduced if the project sponsors and managers were more skilled in the application of prudent project management policies and practices. Thus, this research study sought to examine the role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa

1.3 Purpose of the study

The purpose of the study was to investigate the role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa.

1.4 Objective of the study

The study was guided by the following research objectives:

- i. To assess the role of Project Planning skills on construction projects in construction firms based within Mombasa county, Kenya.
- ii. To assess the role of project communication skills on construction projects in construction firms based within Mombasa county, Kenya.

- iii. To assess the role of project risk management skills on construction projects in construction firms based within Mombasa county Kenya.
- iv. To determine the role of project monitoring and control skills on construction projects in construction firms based within Mombasa county, Kenya.

1.5 Research Questions

The study answered the following research questions :

- i. To what extent does the role of Project Planning skills contribute to construction projects undertaken by construction firms based within Mombasa?
- ii. What is the role of project communication skills on construction projects undertaken by construction firms based within Mombasa?
- iii. How does the project risk management skill affect construction projects in construction firms based within Mombasa?
- iv. What is the role of project monitoring and control Skills on construction projects undertaken by construction firms based within Mombasa?

1.6 Research hypothesis

The study tested the following four alternative hypotheses

- i. H₁; There is a significant relationship between Planning and role of management skills on performance of construction projects in Mombasa based construction firms
- ii. H₁; There is a significant relationship between communication and role of management skills on performance of construction projects in Mombasa based construction firms
- iii. H₁; There is a significant relationship between risk management and role of management skills on performance of construction projects in Mombasa based construction firms
- iv. H₁; There is a significant relationship between monitoring and control, and role of management skills on performance of construction projects in Mombasa based construction firms

1.7 Significance of the Study

The study findings will be significant to the projects management and sponsors because they will be able to understand the importance of the role of project management skills on Performance of construction projects and seek ways to strengthen the variables so as to achieve project success. The study will also be significant to the public and private sector because they will be able to understand and appreciate the importance of the role of project management skills on Performance of construction projects and other factors that affect the Performance of construction projects and management of Projects and look for ways to enhance the same through application of effective policies and management practices. The study will also provide the background information to research organizations and scholars who would want to carry out further research in this area. The study will also facilitate individual researchers to identify gaps in the current research in this area.

1.8 Basic assumptions of the Study

The study assumed that the respondents understood what was required of them when filling the questionnaire and that the construction firms hired individuals who had relatively similar skills and competency in the cadres of management from the top to the bottom.

1.9 Limitations of the study

The following were the limitations of the study

1. Some respondents who were not willing to provide full information for fear of being reprimanded by their managers for giving out information that they consider confidential. However the researcher assured the respondents of the confidentiality of the information that they would provide and will sought authority from the management to undertake research.
2. Access to accurate information due to respondents' divided attention to questionnaires, desire to safeguard the reputation of the organisation thus hindering information dispatch. Legal and ethical requirements when dealing with respondents hindered cooperation from the respondents; this was mitigated through timely

familiarization with the respondents and creating a friendly environment of trust and mutual benefit.

1.10 Delimitations of the study

The study focused on four project management skills applied by construction firms based only within Mombasa county and particularly those that have had an opportunity to execute construction work in Kenya Ports Authority which is not only one of the biggest client and employer within the county but also where the researcher works and is well familiar with the surrounding construction activities, environment and probable constraints.

1.11 Definition of significant terms used in the study

Communications: Communication refers to all means of symbolic or verbal communication (newspapers, mail, email, telephones, television, radio, etc.) that people and machines use to make contact and share information.

Construction Firms: They are entities that transform various resources into constructed physical economic and social infrastructure necessary for socio-economic development. It embraces the process by which the said physical infrastructure are planned, designed, procured, constructed or produced, altered, repaired, maintained, and demolished.

Construction Project: Is a high value, time bound, special construction mission of creating quality specification, completion time, budgeted cost and other specified constraints.

Monitoring and Controlling: It is the process which oversees all the tasks and metrics necessary to ensure that the approved and authorized project is within scope, on time, and on budget so that the project proceeds with minimal risk.

Planning: Planning is deciding in advance what is to be done, when, where, how and by whom it is to be done.

Project Management: Is the process and activity of planning, organizing, motivating and controlling resources to achieve specific goals.

Risk Management: Risk management refers to the practice of identifying potential risks in advance, analyzing them and taking precautionary steps to reduce/curb the risk.

1.12 Organizational of the study

The study is organized into five chapters excluding the preliminary pages, declaration, table of contents and abstract. Chapter one includes background information on the study, statement of the problem, the purpose of the study, objectives, research questions, research hypothesis, limitation of the study to the body of knowledge and definition of key terms.

Chapter two entails the literature review, giving detailed information on project planning skills, project communication skills, project risk management skills and the project monitoring and control skills, theories of project management and finally summarizing the chapter's literature.

Chapter three entails, research methodology, research design, target population sampling size, sampling techniques used in the study, data collection instruments and procedures, data analysis technique used, ethical considerations and a table illustrating the operationalization of variables.

Chapter four focuses on how data was analyzed tabulated while chapter five gives a summary of research findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theoretical foundation and summarizes the information from other researchers who have carried out their research in the same field of study. Specifically, the chapter reviews project monitoring and control skills, project risk management skills, Project Planning skills, and project communication skills.

2.2 Kenyan Construction Industry

Kenya as a developing country is faced with myriad challenges especially in the building and construction sector. However, according to the statistics derived from the Kenya National Bureau of Statistics' website, it is adept to reiterate that the building and construction sector in Kenya contributes to 7% of the country's gross domestic product (GDP). Among the challenges facing the building and construction industry in the country is (Carter & Fortune, 2002) restated that capital is a major challenge that most of the entrepreneurs in the construction sector encounter together with dissatisfaction as the constructors tend to settle for whatever little they have attained. She adds that in Kenya, building and construction sector has limited capacity and the corresponding gains that the contractors count on are reaped by corruption.

The sector's management does not either honor or promote innovativeness and merit hence impeding the perceived development skills and ideas in the sector. Capital accumulation Building & construction sector is faced with vast issues concerning financial availability. According to (Ayman, Orthman.& Caroline,2005), it is prudent to admit that there are myriad financial issues that need to be resolved in order for the construction companies to be able to accomplish their work accordingly. Financial securities demanded by the banks are huge that not every company is able to avail to the banks. Inflation and high rate of interest charged are making the contractors poorer instead of enhancing their construction process. It is needful that the government of Kenya to review the laws governing construction sector so that then respective contractors would access financial support with ease. Lack of understanding between the contractors and financial institutions has

encouraged the construction of poor quality buildings which are unsafe for use. Most of the contractors are striving to reduce the quantity of materials in order to gain from the same instead of delivering quality work as per the structural designers' perception. This often compromises on the performance and qualification of the contractors and professionals in the sector. Resources according Wang, (2011) reiterated that the industry is composed of conservative leadership that prefers to work with likeminded constructors. This is a hindrance to the lucrative ministry that is concerned with the issues pertaining to the choice of construction and corresponding raw materials, investment and research should be encouraged to enhance construction and development of modern housing that would embrace the decision to accomplish the 2030 millennium development goals (MDG). In addition, Lean (2001) reiterates that the Kenyan Professionals in the building and construction sector should embrace research and innovativeness on the use of readily available resources and raw materials which are not limited to makuti, coral stones, blocks, sand which has been in use since time immemorial.

Skills and application process should be the only variables that create the difference. The decision would encourage growth and development in the sector through home based products that are cheap to acquire comparatively to procuring specific materials imported from other countries. The myriad cases like constructions on public utility spaces, road reserves and collapsing of buildings are challenges to the industry's level of competency and product quality assurance. Forthwith, (Cattell, Bowen& Kaka,2007) stated that the building industry is challenged since the current buildings are not able to last long comparatively to other buildings erected centuries ago. In regard to the same, he cited Fort Jesus in Mombasa, which was constructed in the 15th century using locally available materials in the country but does not show any signs of collapsing.

Procurement Process according to Charmaz, (2006) is adept to reiterate that the concerned ministry has derived reports that indicate lack of capacity in the implementation of the respective quality control measures hence the issues that deals with quality assurance are left to the public health technicians who are not vast with the construction issues. Despite the high competencies showcased by the majority of professionals in the building and construction sector in Kenya, some of the professionals provide poor services through sealed

loopholes of bureaucracy, canvassing, poor decision making, substandard documentation and unnecessary extension of projects completion time.

The Kenyan construction industry involves work done on buildings and infrastructures and consists of consultants and contractors as described by the the table 2.1 and 2.2 below respectively.

Consultants are professionals in the construction industry who are qualified at degree level and who are mandated to conceptualize and design building projects which would be executed by their counterparts, the contractors. They include the following primary and tertiary professionals:

Table 2.1: Categories of Consultants professionals on Construction project management

| Primary professionals | Tertiary Professionals |
|------------------------------|-------------------------------|
| Architects | Landscape architects |
| Quantity Surveyors | Land Surveyors |
| Engineers | Building Surveyors |
| | Town Planners |
| | Country Planners |
| | Environmentalists |

(Source:Moramati Foundation In Conjunction With Proinvest – Modernizing Construction, 2011)

Contractors are practitioners who are authorized are to execute projects conceptualized and designed by consultants and under their supervision. They are typically categorized as local or international, the locals being further categorized as national or regional. They include the following categories of practitioners:-

Table 2.2: Categories of Contractors on construction project management

| Engineering Contractors | Specialist contractors |
|---|------------------------------------|
| Civil Engineering contractors | Telecommunication contractors |
| Building Engineering Contractors | Electrical contractors |
| Combination of the two types of engineering contractors | Sewage contractors |
| | Repair and maintenance contractors |

(Source:Moramati Foundation In Conjunction With Proinvest – Modernizing Construction,2011)

2.3 Project planning skills and performance of construction projects

Planning is an important phase in project management cycle. It must be strategically prepared to provide a more focused goal and greater satisfaction in fulfilling the common vision. A project plan must have: work breakdown structure, team structure, effort and duration estimates, task schedule, and details of resources, budget allocation, and contingency plans, which are necessary in implementing the project plan (Munns et al, 2009). The production of a project plan, or schedule, is a key part of the development of any project. The schedule will set out the key stages to be completed during the project, with their starting and finishing dates, and the resources that need to be allocated. Progress can be monitored against each stage and completion readily reported on (Burke, 2011).

Planning brings other more subtle benefits. Planning can help the team to meet deadlines and stay organized. Good planning not only keeps the project team focused and on track, but also keeps stakeholders aware of project progress. There are many benefits to planning. This is the first step in the project process that allows for a reliable and realistic time-scale to be created, assuring accurate time for cost estimates to be produced and for clear documentation of milestones and deliverables will make things much easier as the project progresses. A proficient plan details all resource requirements and doubles as a warning system. If task slippage is at risk, then a warning system will provide clear visibility of what to expect (Sandoe et al, 2001).

The human resources required by the contractor to execute the work is not adequately managed and that little or no resource planning is done. According to the Project Management Institute, (2000) “the three important processes are organizational planning, staff acquisition and team development”, however many contractors ignore these important aspects and prefer to chase their short-term goals of maximizing profit as opposed to the long term goals of industry development. With respect to managing client specific issues it was discovered that Key Account Manager (KAM), who is the person accountable to the client spends most of his day supervising staff and doing administrative work, instead of being involved in strategic planning, project conceptualization and project evaluation (Avots, 2011).

The knowledge and capabilities of the managers and staff is especially important, i.e. their knowledge about technologies, marketing and management. According to Kerzner, (2011) to succeed in planning needs to be trained in the various facets of project management such as planning resourcing, monitoring and control so as to be able to effectively manage the projects. Planning underpins the efforts of a management team that does not shy away from the challenges of change and proactively seeks to find better ways of doing things (International Project Management Association, 2006).

Managers need to support and engage in effective learning processes. The routine “act, find out what works, reflect and retain desirable behaviors” needs to permeate all levels of organizations at both individual and group level. This does not mean learning for the sake of learning or permanently engaging in one experiment or other. Follow the simple routine - experiment, learn, reflect, do more of what works (Maylor, 2011). Experimentation, reflection and learning will assume greater importance as the future becomes more complex and unpredictable. In short, the challenge is to strike the right balance between learning and control, change and stability, thought and action.

Belout, (2008) argues that maintaining the right skill mix and enhancing employee flexibility are two sides of the same coin and a direct consequence of a more unstable business environment, necessitating more frequent re-inventions and a continuous search for better ways of doing things. The attainment of the desired balances through significant personnel change is more risky when an organization has a strong culture that it wishes to

maintain.(Berkun, 2009). Developing a flexible workforce capable of performing a range of tasks and readily moving from one function to another is potentially a better option when there is no need for a fundamental cultural change, but requires a well-developed training and education programme (Burke, 2009).

2.4 Project communicationskills and performance of construction projects

Communication is an action between at least two persons, where messages are delivered, received and reacted to among participants. In project management, communication should be seen both as a resource and a tool (Ruuska, Project Communication 1996, 67). As a resource, communication can be paralleled to people, time, money and equipment. Just as well the use of time and work power has to be planned and targeted for the project; requires communication same kind of systematic resource allocation. Project communication is also a crucial tool in order to effectively exploit other resources. If you struggle with communication, you will probably struggle with the project as well.

The importance of communication in project management often personifies. For example, as a project manager, your communication skills have a major impact on how you are able to “sell” the project for the stakeholders, and how you manage expectations. And not forgetting how your communication skills result in managing the project team, reducing unnecessary conflicts and even getting “forgiveness” because of communicating effectively (Horine, 2005). Communication is an activity which we perform constantly and without putting much of a thought for it. This might be one reason why we often take it as granted and leave it without specific planning in project management. And yet, time and time again, the lack of, or poorly ran, communication is very often listed as an area needing improvement in the assessment sessions of finished projects (Project Management Communication 2002). Project communication should be systematic, continuous, well planned and informative in the right way. It is easy to slide aside from the golden mean if the communication activities are not planned thoroughly enough; either you give too little or too much of information. With well-constructed and implemented communication plan, project management can engage people to work for the project and this way smooth the overall project operations.

Gould & Joyce, (2009) also address the importance of the quality of communication. They say that communication is not a one-way street but needs to be both delivered *and* received. This means that the person who wants to communicate information needs to pay attention to the receiver. In practice this means that, for instance, a leader needs to carefully choose the time to, for example, critique somebody.

There can also be such a thing as too much information since a person cannot receive an infinite amount of information at once. This could mean that if the information is not explicit and concentrated enough, important parts could be overlooked because the receiver was distracted by all the other information. Most people do not need the big picture, they will work better if they only get the information they need in order to perform their task.

“Timely and precise communication can correct a problem before it becomes serious.”

(Gould & Joyce, 2009, pp.67)

Communication is today not used as an asset in our work, we do not use it for planning and we do not use it as a resource (Segerfeldt, 2002). It might seem like communication occurs once information is produced and delivered, it is not. There is a big difference between information and communication. Information is one out of many different work tasks while the second one is a way of working.

In the end communication always comes down to planning, how people should be informed or how communication should happen. This needs to be planned ahead in order to be efficient and to fulfill its purpose. In many cases people consider information to be enough because of old habits, routines, or a lack of time for communication. For communication to occur, four key aspects needs to be fulfilled and these are that the employees: feel safe, that they feel involved, that they get responsibilities, and when there is interaction and consensus between co-workers.

Segerfeldt, (2002) points out that it is important to be honest when considering whether it is enough to only inform or if communication is warranted. The decision to inform instead of establishing a communication can sometimes be based on lazy preparatory work.

“Change that comes with negative surprises is the result of bad preparations.”

(Segerfeldt, 2002, pp.57), (Author’s translation)

In preparing for changes, the communicative approach is to be honest and trust in the employees’ ability and capacity. This is achieved through communication between top-level

management and employees. The employees in turn take the thoughts in consideration and proceeds with the process. By doing so, the employees are involved and can confirm the *need* for a change, and what that need actually is, instead of the top-level management presenting a result they want at the end of the change. The latter approach is often encountered by resistance. Even though a communication plan for the change is set up and followed, it is still important that the flow of information exists. Everyone who is affected by the change should at all times receive updated information on occurrences and events.

2.5 Project risk management skills and performance of construction projects

Risk is part of every project, Pinto, (2007). A project is: "a temporary endeavor undertaken to create a unique product, service or result" (Project Management Institute, 2008:5), and project management is: ".The application of knowledge, skills, tools and techniques to project activities to meet the project requirements" (Project Management Institute, 2008:6). Planning and scheduling are key aspects of project management (Söderlund, 2004b), and risks are all events and situations that threaten the undisturbed execution of the project plan. Risk therefore relates to expectations of stakeholders regarding when and how the project will deliver, what the project will deliver and at what cost.

Project risks are therefore important factors determining whether the project will be a success. Project risk management is considered in project management handbooks to be an example of rational problem solving (Kutsch & Hall, 2005). According to these handbooks (Association for Project Management, 2004 & Project Management Institute, 2008a), this problem solving approach indicates that actors in the risk management process, based on an information collection and analysis process, decide upon measures which are taken in order to lower the probability of risks occurring, or minimize the impact of the risks that occur, stakeholder experience with risks in similar situations in the past and other historical information, play important roles in the process of information collection, analysis and decision making. The risk management process as a problem solving process assumes that actors are well informed and behave rationally when making a decision. In addition it is assumed that actors demonstrate instrumental behavior, meaning that they invest their resources in mitigating the risks identified, not in a discourse on the meaning of these risks for the projects charter, deliverables or success. Risk management is therefore considered to be a "clean" decision making process.

Risk management comprises the processes concerned with identifying, analyzing, and responding to project risk (Chamoun, 2011). It includes maximizing the results of positive events and minimizing the consequences of adverse events. The processes include determining which risks are likely to affect the project and documenting the characteristics of each; evaluating the risks and risk interactions to assess the range of possible project outcomes; defining enhancement steps for opportunities and responses to threats; and responding to changes in risk over the course of the project (Frascer, 2011).

Clearly most projects are faced by a myriad of risks necessitating increased skill levels among staff and management of the project. However, few projects would be able to demonstrate the application of disciplined risk management on their projects due to lack of training in risk management practices (Frascer, 2011). This can be a major constraint to the success of any project. Improving the application of project risk management involves two main objectives: improving the ability to identify risk, while we still have time in the project lifecycle to influence it, and embedding the management of risk into the mainstream of delivering projects which all require skilled personnel (Bredillet, 2009). As with any process, project risk management must itself be controlled. There should be periodic reviews and events scheduled into the mainstream project plan to address risk. These reviews must be managed with enormous discipline, as they are not brainstorming or analysis sessions - they should review the status of risk mitigation strategies, and assign actions as appropriate (Clarke, 2008).

Increasing team skill and employing successful practices reduces risk and contributes to successful implementations (Belout, 2008). In fact project managers know that things rarely go off exactly as planned. During the planning process, it is vital to produce a risk log with an action plan for the risks that the project could face. If something happens, then a skilled team can quickly resolve the issue with the management plan that has already been set in place. This will give the team confidence when facing project risks and help the clients feel comfortable with the project's progression (Burke, 2009).

In spite of efforts, in many instances with external assistance, opportunities for training in requisite specialized skills are sorely inadequate although the foundation for developing

such skills, in terms of basic education exists in most although not all of them. Effective risk management calls for training in a large number of technical skills and cannot be effectively pursued with the help of manpower that is merely literate at a basic level (Chamoun, 2011). Risk is inherent in every project activity; however, several factors inhibit organizations from realizing their efforts to reduce risk; specifically, changing technologies, processes, and staff each contribute to decreased organizational performance and increased risk (Avots, 2011). Consistently applying standard business practices can contribute to lower risk; standard practices help reduce variation and increase the reliability of installed systems. Organizations that use consistent procedures and reliable systems reduce company exposure to risk. Best practices are often built into significant and mature technologies they are designed to promote the use of labor-saving or risk-reducing activities (Comminos et al, 2010).

During project implementation, problems will inevitably surface which end up with the eventual risk of project failure hence dealing effectively with projects calls for adequate human resources, both in size and level of technical sophistication (Clements et al, 2003). These problems can range from basic staffing decisions to major vendor disagreements over a contract and resolving problems with end users. The project manager must be able to identify the specific problem and to use sound judgment to develop alternative solutions and make recommendations. Making sound well informed decisions is a key competency (Clarke, 2008). The project manager must determine the scope and boundaries on which decisions should be made. Decisions must be made, and frequently they are not major enough to require a principal. Therefore the project manager must be able to make them (Clement et al 2003). Risks and uncertainties inherent in the construction industry are more than other industries. The process of planning, executing and maintaining all project activities is complex and time-consuming. The whole process requires a myriad of people with diverse skill sets and the coordination of a vast amount of complex and interrelated activities.

The situation is made complex by many external factors. The track record of construction industry is very poor in terms of coping with risks, resulting in the failure of many projects to meet time schedules, targets of budget and sometimes even the scope of work. As a result,

a lot of suffering is inflicted to the clients and contractors of such projects and also to the general public. Risk in the construction industry is perceived to be a combination of activities, which adversely affect the project objectives of time, cost, scope and quality.(Avots, 2011). Some risks in construction processes can be easily predicted or readily identified; still some can be totally unforeseen. Construction risks can be related to technical, management, logistical, or sociopolitical aspects or can be related to natural disasters. In the domain of project management, some of the critical effects of risks are failure to achieve operational requirements and the required quality, non-completion of the project within stipulated time and estimated cost (Kerzner, 2011). The current study is focused on concepts of risk management and will cover the related literature on the topic, development of a survey questionnaire and suggestions related to risk management practices in construction industry of Kenya

2.6 Monitoring and Control skills and performance of construction Projects

According to Horner &Yong, (2006) monitoring and controlling processes observes the project executing processes, promptly identifies problems occur during the executions, determines corrective action and controls all project management processes. These processes constantly monitor the performance of the project, identify the variances from project management planning and provide timely corrections. Also, they perform the controlling processes toward changes and problems, in order to provide necessary preventive actions. Monitoring and controlling processes are constant processes, which will help update stakeholders and team members on how well the project has been doing and what may require reviewing, revising or more attention. These processes monitor and control the entire project, interactively provide feedbacks between project phases.

Project control is that element of a project that keeps it on-track, on-time and within budget. Grant, (2006) is of the opinion that project control begins early in the project with planning and ends late in the project with post-implementation review, having a thorough involvement of each step in the process. Projects may be audited or reviewed while the project is in progress. Formal audits are generally risk or compliance-based and management will direct the objectives of the audit. An examination may include a comparison of approved project management processes with how the project is actually being

managed. Each project should be assessed for the appropriate level of control needed: too much control is too time consuming, too little control is very risky. If project control is not implemented correctly, the cost to the business should be clarified in terms of errors and fixes.

Control systems are needed for cost, risk, quality, communication, time, change, procurement, and human resources. In addition, auditors should consider how important the projects are to the financial statements, how reliant the stakeholders are on controls, and how many controls exist. Pinto, (2007) stated that auditors should review the development process and procedures for how they are implemented. The process of development and the quality of the final product may also be assessed if needed or requested. A business may want the auditing firm to be involved throughout the process to catch problems earlier on so that they can be fixed more easily. An auditor can serve as a controls consultant as part of the development team or as an independent auditor as part of an audit.

According to Kerzner, (2011) monitoring and controlling skills includes: Measuring the ongoing project activities (where we are); monitoring the project variables (cost & effort) against the project management plan and the project performance baseline (where we should be); identify corrective actions to properly address issues and risks (how can we get on track again); influencing the factors that could circumvent integrated change control so only approved changes are implemented. They contend that in multi-phase projects, the monitoring and controlling skills process also provides feedback between project phases, in order to implement corrective or preventive actions to bring the project into compliance with the project management plan.

While agreeing with Kerzner, (2011) note that project monitoring and evaluation is an ongoing process, and it includes: Continuing support of end users and correction of errors. In this stage, auditors should pay attention to how effectively and quickly user problems are resolved. Chamoun, (2011) explains that Project Management tries to gain control over variables such as risk: Potential points of failure: Most negative risks (or potential failures) can be overcome or resolved, given enough planning capabilities, time, and resources. He argues that risk can also be categorized as "positive--" meaning that there is a potential opportunity to complete the project faster than expected. Monitoring involve keeping track

of a project's activities and outputs on an on-going basis during the life of the project (Clements et al, 2003). Collecting data on a project's processes is important, because the information can be helpful to those responsible for ensuring that the project is on track (consistent with what it agreed to do). Staff responsible for monitoring and evaluation requires the necessary skill and expertise to effectively undertake this process as this process is essential in keeping project management informed about scheduling, distribution (equity), and effectiveness of the project in delivering the activities and outputs(White et al, 2002).

However in many project especially in the public sector there is a lack of professional and technical skills, which has led to poor project quality (Nwachukwu, 2008). In addition, there is low community participation in monitoring due to the inadequacy of data and general information about the funds. Poor monitoring has led to abuse of funds and fostered a sense of impunity amongst the perpetrators (Kumar, 2008). In general, since capacities for districts to monitor and evaluate projects are inadequate, monitoring mechanisms are not well developed. At the community level, there is a lacuna in terms of who and how projects should be monitored. In addition, there is a glaring lack of computers and modern data storage and retrieval systems for enhancing financial management (Avots, 2011). To properly control these variables a good project manager must have the necessary skills and depth of knowledge in time, cost, scope, and risk fields, and in six other areas as well: integration, communication, human resources, quality assurance, schedule development, and procurement (Meredith & Mantel, 2009). They further argue that project control is that element of a project that keeps it on-track, on-time, and within budget. Project control begins early in the project with planning and ends late in the project with post implementation review, having a thorough involvement of each step in the process. (Meredith & Mantel, 2009) further note that control systems are needed for cost, risk, quality, communication, time, change, procurement, and human resources. In addition, auditors should consider how important the projects are to the financial statements, how reliant the stakeholders are on controls, and how many controls are existing (Murphy, 2011). Each project should be assessed for the appropriate level of control needed: too much control is time consuming, too little control is very risky. If project control is not implemented correctly, the cost to the business should be clarified in terms of errors, fixes,

and additional audit fees and all this is to build on the foundation of staff and management skills (Knoepel, 2000).

Well trained and skilled project managers and staff begin the process of monitoring and early in the project with planning and end late in the project with post-implementation review, having a thorough involvement of each step in the process (Kumar, 2008). In order to ensure the success of monitoring and evaluation in terms implementing control systems which are needed for cost, risk, quality, communication, time, change, procurement, and human resources control, appropriate and relevant training must be given to the relevant staff and management teams. In addition, management and staff should consider how important the projects are to the financial statements, how reliant the stakeholders are on controls, and how many controls exist (Krajewski&Ritzman, 2009).

2.7 Theoretical framework

A theory is an organized system of accepted knowledge that applies in a variety of circumstances to explain a specific set of phenomenon. Thus there are a number of theories that underlie the role of project management skills on Performance of construction projects and these include:

2.7.1 Theory of project management

Theory of project management (PM) can be described as a set of models and techniques for the planning and control of complex undertakings. Theory of project management is prescriptive: it reveals how actions contribute to the goals set to those actions. Project Management is the art of directing and coordinating human and material resources throughout the life of a project by using modern management techniques to achieve predetermined objectives of scope, cost, time, quality, and participant satisfaction (Johann,2005). According to Lauri &Gregory, (2009) the theory of project management is considered to be made of two components: Theory of Project; The main part of theory of project is scope management whose purpose is to ascertain that an adequate or sufficient amount of work is done and also the work that is done delivers the stated business purpose.

The scope is defined through the work breakdown structure. The planning processes are structured into core processes and facilitating processes. There are ten core processes: scope

planning, scope definition, activity definition, resource planning, activity sequencing, activity duration estimating, cost estimating, and schedule development, cost budgeting and project plan development (Johann, 2005). The Execution of the plan indicates the process involved in the execution. The underlying theory of execution provides the interface between plan and work. While the theory of control indicates the core process of controlling two sub-processes: performance reporting and overall change control (Lauri & Gregory, 2009).

2.7.2 Theory of the temporary organization

The other theory is the theory of the temporary organization which is based on the notion that action has a leading role. An empirical reason for adopting action as a primary concept in a theory of temporary organizations is that temporary organizations are almost always motivated by a need to perform specific actions in order to achieve immediate goals. The project on the whole is seen as "the temporary organization (Rolf & Anders, 2004). A good deal of the basic project management theories see project management as being primarily about controlling, planning and scheduling and often assumes that the project work takes place within the boundaries of one organization (Lauri & Gregory, 2009). Thus according to traditional theories projects are carried out under conditions of almost complete rationality (Johann, 2005). But the fact of the matter is that majority of projects are carried out under conditions of limited rationality and they are not repetitive, stable and linear. There is thus a part from the core constraints of time, scope and finance, there are a number of other factors that influence the implementation and management of these projects such as stakeholders' participation, planning and monitoring.

2.7.3 Traditional waterfall management

There are many different construction management methods used today and many of them are quite old. This is a brief introduction to one of these traditional management methods also known as waterfall management. This introduction is given to ease the understanding of the more traditional way in which construction industry is managed.

In traditional project management there are distinct phases throughout the project life cycle

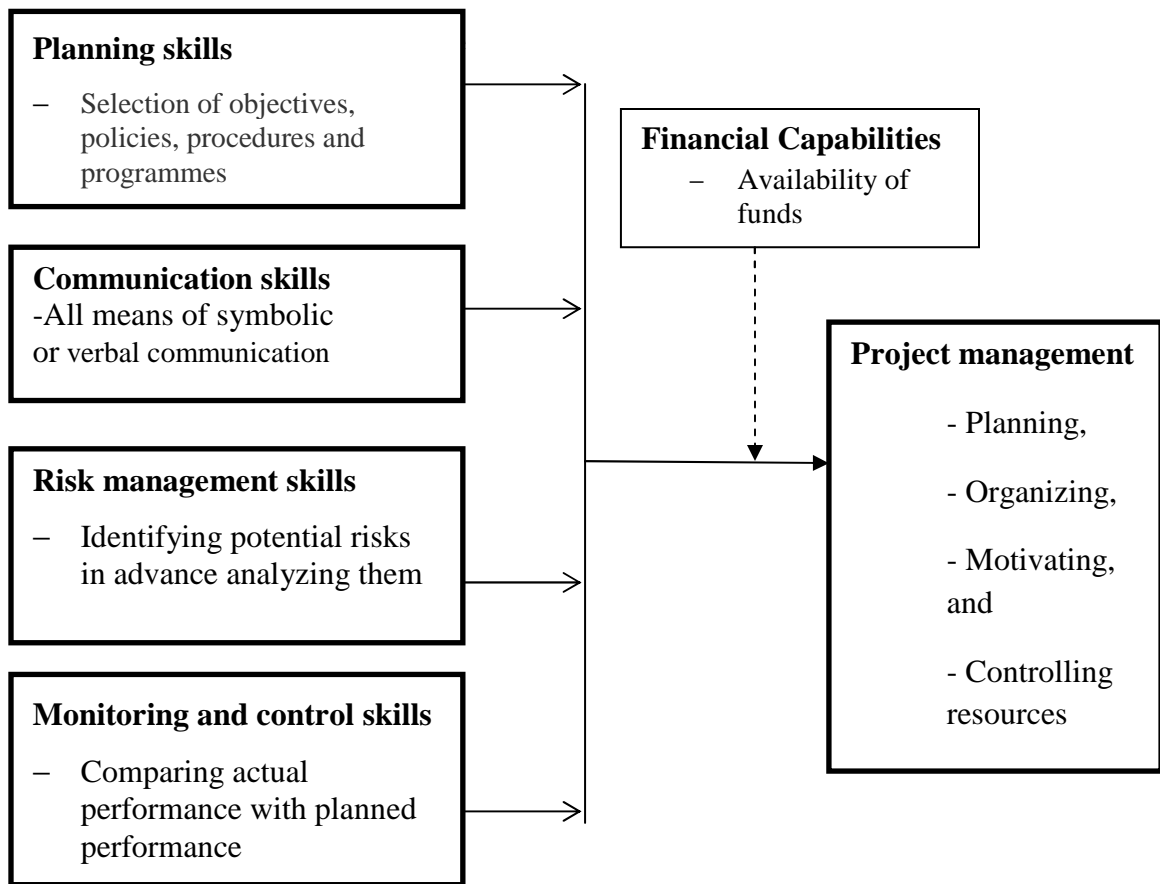
(Hass, 2007). In this approach, an important part is the disciplined planning and control methods. The activities are performed in planned and orderly series. In order to perform such extensive planning the projects following this approach have the assumption that the project's future is predictable. Once a phase is completed it should not be revisited. There are of course both advantages and disadvantages with this approach as there are with any other approach. One advantage is that it is very structured and easy to follow. It also emphasizes the importance of the client's requirements. On the other hand it is very seldom that a project can fully follow the series as planned, since the conditions usually change over time and also it is difficult for the client to specify in detail all requirements at the start.

2.7.4 Phases of construction projects

A construction project consists of several different phases. In the book *Construction Project Management* the authors explain that a construction project starts off with a feasibility analysis (Gould & Joyce, 2009). This phase is an investigation on an economic basis. The aspects that are most important to analyze is the cost, the time schedule, the budget and the market demand. If the feasibility analyses then show that the project will generate return, a decision to proceed with the project is made. The search for financial means begins and a procurement process for the design of the project is initiated. The design of the project can be procured with different contract forms, for instance the entire responsibility can be handed to one company or the different disciplines can be procured from different companies. After the design phase there is sometimes another procurement process depending on what type of delivery method was chosen during the first procurement process. The different delivery methods will be described in the succeeding sections. The next step is the construction phase and this, as the name indicates, is when the decided design is actually realized and constructed in its physical form. When the construction is finished the project is handed over to the project owner including all necessary documents and instructions.

2.8 Conceptual Framework

A conceptual framework is a tool researchers use to guide their inquiry; it is a set of ideas used to structure the research, a sort of a map (Kothari, 2012). It is the researcher's own position on the problem and gives direction to the study. It may be an adaptation of a model used in a previous study, with modifications to suit the inquiry. Aside from showing the direction of the study, through the conceptual framework, the researcher can be able to show the relationships of the different constructs that he wants to investigate. The conceptual framework below, which depicts the relationship between the dependent and independent variables, guided this study.



Independent variables

Dependent variable

Figure2.1: Relationship between the key variables contributing to the performance of construction projects

The conceptual framework shows the relationship between variables role of project management skills. The researchers argues that there is a relationship between Monitoring

and control skills, Planning skills, Risk management skills and Communication skills and the dependent variable Project management. This study seeks to verify these arguments.

2.9 Summary of the literature and research gaps

The researcher begun by highlighting two theories of project management important to this research topic in question, namely the theory of project management and the theory of temporary organization before embarking on the conceptual framework where the four identified independent variables have been shown to influence construction project management hereby by as the dependent variable.

Further the researcher went ahead to cover the traditional construction management vis a vis the modern phases of construction management before finally highlighting on the construction project management organization in Kenya in particular.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out various stages and phases that were followed in completing the study. This section is an overall scheme, plan or structure conceived to aid the study in answering the raised research question. Therefore in this section the research identified the procedures and techniques that were used in the collection, processing and analysis of data. Specifically, this chapter is discussed under the following sub-topics; research design, study location, target population, sample size and sampling procedure, research instruments, validity and reliability of instruments, data collection and data analysis.

3.2 Research Design

This study employed a descriptive survey research designs. A descriptive research design was used in preliminary and exploratory studies to allow researchers to gather information and summarize, present and interpret data for the purpose of clarification (Orodho, 2009). According to Mugenda and Mugenda, (2008) the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. Borg and Gall, (2009) note that descriptive survey research was intended to produce statistical information about aspects of a study that interest policy makers. Gay, (2007) says that surveys are self-report study that requires the collection of quantifiable information from the sample. They are useful for describing, explaining or exploring the existing status of two or more variables (Mugenda and Mugenda, 2008).

3.3 Target Population

Target population is the specific population about which information is desired. According to Kombo & Tromp, (2009) a population is a well-defined or set of people, services, elements, events, group of things or households that are being investigated. The population of interest of this study was the staff working with the construction firms based within Mombasa. The management staff working with the construction firms based within

Mombasawas the respondents. The target respondents includes the 111 construction firms heads, assistant construction firms heads and lower construction firms cadre staffs like the supervisors from the head office of the construction firms in Mombasa.All working in the construction firms based in Mombasa County.Mugenda, (2008) explains that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study.

Table 3.1: Target population

| Category | Population | Percentage |
|---------------------------------------|-------------------|-------------------|
| Construction firms heads | 51 | 46 |
| Assistant construction firms heads | 38 | 34 |
| Lower construction firms cadre staffs | 22 | 20 |
| Total | 111 | 100.0 |

3.4 Sample size and sampling procedure

The sample size and sampling procedures were determined as follows

3.4.1 Sample size

The sampling plan describes how the sampling unit, sampling frame, sampling procedures and the sample size for the study will be carried out. The sampling frame describes the list of all population units from which the sample will be selected (Kombo & Tromp, 2009). Sample of responding staff will be drawn from 111 staffs working at the construction firms in Mombasa where stratified random sampling technique will be used.

Cooper & Schindler, (2009), argue that if well chosen, samples of about 10% of a population can often give good reliability. Stratified random sampling technique was used since population of interest is not homogeneous and could be subdivided into groups or strata to obtain a representative sample.

3.4.2 Sampling procedure

The study selected a section and particularly the staffs who included construction firm heads, assistant construction firm heads and lower construction firm staffs like the supervisors from

the construction firms within Mombasa. From the above population of one hundred and eleven, a sample of 30% was selected from within each group in proportions that each group bears to the study population. This generates a sample of 33 respondents which the study seeks information from. This made it easier to get adequate and accurate information necessary for the research.

Table 3.2: Sample Size

| | Population | Ratio | Sample size |
|---------------------------------------|-------------------|--------------|--------------------|
| Construction firms heads | 51 | 0.3 | 15 |
| Assistant construction firms heads | 38 | 0.3 | 11 |
| Lower construction firms cadre staffs | 22 | 0.3 | 07 |
| Total | 111 | 0.3 | 33 |

3.5 Data collection instruments

Self-completion questionnaires, involving both open-ended and closed-ended questions items, was the main instrument for gathering the study's data. Open-ended questions focused on giving in-depth answers providing more details on the study aspects, while closed-ended questions were meant to keep the respondents on track and to the point. According to Cooper & Emory (2008), a self-completion questionnaire was convenient as respondents could fill them during free times or when workloads are manageable besides it was cheaper and quicker to administer.

3.5.1 Pilot Study

Pilot study was aimed at checking the validity and reliability of the data by pre-testing the data collection instrument. According to Mugenda, (2008), a pre-test is a trial run to determine whether the instrument is clearly worded and free from major biases and whether it solicits the type of information envisioned.

3.5.2 Validity of the instrument

Validity shows whether the items measure what they are designed to measure (Borg & Gall, 2009). The researcher used content validity to examine whether the instruments answered the research questions (Borg & Gall, 2009). Adjustments and additions to the

research instruments consultations and discussions with the supervisor was done to establish content validity.

3.5.3 Reliability of the instrument

According to Wiersma, (2009), Reliability refers to the consistency of the research and the extent to which studies can be replicated .To ensure a high degree of reliability of instruments in this study, the researcher personally collected the data.

3.6 Data collection procedure

According to Spector,(2011) job satisfaction can be measured by interviewing or administering a survey instrument to the sample population. However, interviews are rarely used. In most cases, the studies on the phenomenon of job satisfaction are conducted using a questionnaire. The study used a questionnaire administered to each member of the sample population. The questionnaire had both open and close-ended questions. The close-ended questions provided more structured responses to facilitate tangible recommendations. The closed ended questions was used to test the rating of various attributes and this helped in reducing the number of related responses in order to obtain more varied responses. The open-ended questions provided additional information that may not have been captured in the close-ended questions. The questionnaire was carefully designed and tested with a few members of the population for further improvements. This was done in order to enhance its validity and accuracy of data to be collected for the study.

3.7 Data analysis technique

Before processing the responses, the completed questionnaires were edited for completeness and consistency. Quantitative data collected was analyzed by the use of descriptive statistics using Statistical Package for Social Sciences (SPSS) and presented through percentages, means, standard deviations and frequencies. This was done by tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS. The information was displayed by use of tables and in prose-form. Tables and other graphical presentations as appropriate were used to present the data collected for ease of understanding and analysis.

3.8 Ethical considerations

Ethics generally constitute “1. A system of moral principles, by which human actions and proposals may be judged good or bad, or right or wrong. 2. The rules of conduct recognized in respect of a particular class of human actions. 3. Moral principles, as of an individual” (Delbridge, 2000). They evolved initially from religion by many thinkers in the Judeo-Christian tradition (Cohen & Grace, 2008). Their study involves the activity of examining one's moral standards of society and asking how these standards apply to our lives and whether these standards are reasonable or unreasonable. The outcome is the notion of rights as doing what will promote the most good, and acts that promote the general good are one of the factors that determine whether they are right. However, (Johnson, 2010) argues that ethics cannot be arbitrarily created but discovered through argument and persuasion

For project managers, one of the critical elements of their profession is the consideration of ethics and social responsibility. There should be no conflict between morality and good management as quoted by Willoughby, (2009)

Construction contractors are also expected to behave in an ethical manner. A recent interview survey of construction professionals indicated the significant role ethical conduct plays in construction contracting (Badger and Gay, 2009), an unsurprising fact considering that people working in the construction industry are twice as likely to sustain a major injury and five times more likely to be killed, than the average for all industries (Davis, 2011). Being honest and realistic is also said to be a fundamental aspect of professional integrity, especially when making claims and estimates (Johnson, 2010).

3.9 Operational definition of variables

Table 3.3 below shows the operational definition of variables for the study which gives summary of variables, indicators, measurement, scale and also data collection methods used.

Table 3.3: Operational definition of variables

| VARIABLE | INDICATORS | MEASUREMENT | LEVEL OF SCALE | RESEARCH DESIGN | DATA COLLECTION METHODS | LEVEL OF ANALYSIS |
|--|--|--|-----------------------|------------------------|--------------------------------|-------------------------------------|
| Independent Variable: Planning Skills | <ul style="list-style-type: none"> – Accurate estimation of time – Identified resources – Developed schedules | <ul style="list-style-type: none"> – Self-access – Summary report | Nominal | Descriptive | Questionnaires | Variance, mean & Standard deviation |
| Independent Variable: Communication skills | <ul style="list-style-type: none"> – Training – Corporate consultants – Exams | <ul style="list-style-type: none"> – Individual involvement | Nominal | Descriptive | Questionnaires | Variance, mean & Standard deviation |
| Independent Variable: Risk management skills | <ul style="list-style-type: none"> – Cost trends – Cost fluctuation – Milestones | <ul style="list-style-type: none"> – Variance | Nominal | Descriptive | Questionnaires | Variance, mean & Standard deviation |
| Independent Variable: Monitoring and Control skills | <ul style="list-style-type: none"> – Baseline Records – Internal record keeping | <ul style="list-style-type: none"> – Qualitative survey | Nominal | Descriptive | Questionnaires | Variance, mean & Standard deviation |
| Dependent Variables: Project Management | <ul style="list-style-type: none"> – Reduction of cost, time – meeting deadlines | <ul style="list-style-type: none"> – Accountability – Capacity enhancement | Ordinal | Descriptive | Questionnaires | Variance, mean & Standard deviation |

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research methodology. The study findings are presented on to investigate the role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa. The data was gathered exclusively from the questionnaire as the research instrument. The questionnaire was designed in line with the objectives of the study.

4.2 Response Rate

The study targeted 33 respondents in investigating the role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa of which all responded making a response rate of 100%. This reasonable response rate was made a reality after the researcher made personal calls and visits to remind the respondent to fill-in and return the questionnaires.

4.3 Demographic characteristic of respondents

This section deals with demographic characteristics of the respondents. This was meant to provide the basis of understanding the composition of the respondents and determine their ages, gender, education and experience in years of working in the construction industry.

4.3.1 Gender of respondents

The study found it paramount to determine the respondents' gender in order to ascertain whether there was gender parity in the positions indicated by the respondents. According to the analysis it was evident that majority of the respondents were male which represented 61% while 39% were female. The findings of the study are displayed in table 4.1.

Table 4.1 Gender of respondents

| Gender | No. of Respondents | Percentage |
|--------|--------------------|------------|
| Male | 20 | 61 |
| Female | 13 | 39 |
| Total | 33 | 100 |

Acker (2006) observed that gender equality was a very important as a trait as it can be used to improve performance of construction projects. He argued that it fosters teamwork and also creates a sense of unity and an aspect of working together for a common goal with every individual effort whether male or female being important to the attainment of the overall objectives. A gender sensitive firm provides a conducive working environment where a staff/manager is supposed to interact with other colleagues of the opposite gender in pursuit of excellence and achievement of set performance.

4.3.2 Age of the respondents

The respondents were required to indicate their age where According to the findings, 50% of the respondents were aged between 30-40 years, 30% were aged between 41-50 years, 10% were aged above 50 years while 10% were aged below 30 years. The findings of the study are illustrated in table 4.2

Table 4.2 Age of the respondents

| Age | No | Percentage |
|----------------|----|------------|
| Below 30 years | 3 | 10 |
| 30-40 | 16 | 50 |
| 41-50 | 11 | 30 |
| Above 50 years | 3 | 10 |
| Total | 33 | 100 |

Jenster& Hussey, (2001) in their study of determining strategic capability in organizations associated age with employee efficiency in service delivery where they indicated that there is a positive correlation between age and employee performance. He argued the older an

employee was the higher the performance up to a certain age where performance would start declining. He therefore presented this relationship using a sigmoid curve.

4.3.3 Duration of the period respondents worked in the construction firm

The study found it necessary to find out the respondents years in service as staff members at the construction firms based within Mombasa. The findings of the study are displayed in table 4.2 Based on the findings, majority (39%) of the respondents had over 10 years' experience, 27% had between 5-10 years, while 24% had between 1-5 years of experience. It was also revealed that 10% of the respondents had an experience not exceeding 1 years. The findings of the study are illustrated in table 4.3 below.

Table 4.3 Duration period of Working by respondents

| Duration | Frequency | Percentage |
|-----------------|------------------|-------------------|
| Below 1 years | 3 | 10 |
| 1-5 years | 8 | 24 |
| 5-10 years | 9 | 27 |
| Above 10 years | 13 | 39 |
| Total | 33 | 100 |

4.3.4 Level of education

The study sought to find out the respondents level of education in order to ascertain whether academic and professional qualification influenced role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa. The findings of the study are displayed in table 4.4 from the findings, majority (38%) were diploma holders while 31% of the respondents indicated that they had attained university bachelor degree. The study further indicated that 26% of the respondents were secondary certificate holders while minority (5%) had attained postgraduate qualifications which included masters. The findings of the study are illustrated in table 4.4 below.

Table 4.4 Level of education of respondents

| Level of Education | Frequency | Percentage |
|---------------------------|------------------|-------------------|
| Secondary Certificate | 8 | 26 |
| Diploma | 13 | 38 |
| Bachelors | 10 | 31 |
| Post Graduate | 2 | 5 |
| Total | 33 | 100 |

In a study on the relationship between teaching profession and human capital, Maria, (2011) found that construction projects profession depends highly on the skills and experience acquired. From the findings therefore majority of the respondents were experienced and hence can be highly informative on issues that relate to construction projects profession at firms based within Mombasa.

4.4 Project Planning Skills

The first objective of the study was to assess the role of Project Planning skills on construction projects in construction firms based within Mombasa. The respondents were asked to indicate the role of project planning skills on performance of construction projects undertaken by construction firms based within Mombasa. On a likert scale of 5 to 1 where 5 means very great extent and 1 very low extent, 19 of the respondents and 7 indicated that planning skills influences role of management skills to a very great extent and great extent respectively while 4 of them suggested that it only influences to a moderate extent. The remaining 2 and another 1 respondent indicated that planning do influence performance of projects but to low and very low extents respectively. The findings of the study are displayed in table 4.5

Table 4.5 Showing extent to which Planning influences role of Project Management Skills on performance of construction projects in Mombasa based construction firms

| Level of Agreement(x) | Frequency (f) | proportion | <i>fx</i> | |
|-----------------------|---------------|------------|-----------|-----|
| Very great extent | 5 | 19 | 57.58% | 95 |
| Great extent | 4 | 7 | 21.21% | 28 |
| Moderate extent | 3 | 4 | 12.12% | 12 |
| Low extent | 2 | 2 | 6.06% | 4 |
| Very low extent | 1 | 2 | 6.06 % | 2 |
| Total | | 33 | 100% | 140 |

Mean = $\sum fx/n$: $140/33=4.242$; *This indicates that planning skills influence project management skills to a great extent.*

4.5 Communication Skills

The second objective of the study was to assess the role of project communication skills on construction projects in construction firms based within Mombasa. The respondents were therefore presented with questions and statements aimed at answering the resultant research question. On a likert scale of 5 to 1 where 5 means very great extent and 1 very low extent, 14 of the respondents and 9 indicated that communication skills influences role of management skills to a very great extent and great extent respectively while 6 of them suggested that it only influences to a moderate extent. The remaining 4 indicated that communication do influence performance of projects but to low extent while none of the respondents suggested that it influences performance to a very low extent as shown in table 4.6.

Table 4.6 Showing extent to which project communication skills influence role of Project Management Skills on performance of construction projects in Mombasa based construction firms

| Level of Agreement(x) | Frequency (f) | proportion | fx | |
|-----------------------|---------------|------------|--------|-----|
| Very great extent | 5 | 14 | 42.42% | 70 |
| Great extent | 4 | 9 | 27.27% | 36 |
| Moderate extent | 3 | 6 | 18.18% | 18 |
| Low extent | 2 | 4 | 6.06% | 8 |
| Very low extent | 1 | 0 | 0.00% | 0 |
| Total | | 33 | 100% | 132 |

Mean = $\sum fx/n$: $132/33=4$; a clear indication that project communication skills influence project management skills to great extent.

4.6 Risk Management Skills

The respondents were presented with questions and statements in order to seek answers to the third research question on how Risk Management Skills influences role of project management skills on Performance of construction firms at Mombasa. On a likert scale of 5 to 1 where 5 means very great extent and 1 very low extent, 12 of the respondents and 9 indicated that risk management skills influence role of management skills to a very great extent and great extent respectively while 7 and other 5 of them suggested that it influences to a moderate extent and low extent respectively. However none of the respondents suggested whether risk management skills influence performance of construction project to a very low extent. The findings of the study are shown in table 4.7

Table 4.7 Showing extent to which project risk management skills influences role of Project Management Skills on performance of construction projects in Mombasa based construction firms

| Level of Agreement(x) | Frequency (f) | proportion | <i>fx</i> | |
|-----------------------|---------------|------------|-----------|-----|
| Very great extent | 5 | 12 | 36.36% | 60 |
| Great extent | 4 | 9 | 27.27% | 36 |
| Moderate extent | 3 | 7 | 21.21% | 21 |
| Low extent | 2 | 5 | 15.15% | 10 |
| Very low extent | 1 | 0 | 0.00% | 0 |
| Total | | 33 | 100% | 127 |

Mean = $\sum fx/n$: $127/33=3.848$; an indication that risk management skills influence the role management skills to a great extent.

4.7 Project Monitoring and Control skills

The study sought to find out whether Monitoring and Control skills influence the role of project management skills on Performance of construction projects. The respondents were therefore presented with statements and questions where they were expected to express their opinion. On a likert scale of 5 to 1 where 5 means very great extent and 1 very low extent, 5 of the respondents and 16 indicated that risk management skills influence role of management skills to a very great extent and great extent respectively while 8 of them suggested that it only influences to a moderate extent. Two of the respondents indicated low extent and other 2 suggested that monitoring and control skills influence performance of construction project to a very low extent. The findings of the study are shown in table 4.8

Table 4.8 Showing extent to which monitoring and control skills influence role of Project Management Skills on performance of construction projects in Mombasa based construction firms

| Level of Agreement(x) | Frequency (f) | proportion | fx |
|-----------------------|---------------|------------|-----|
| Very great extent | 5 | 15.15% | 25 |
| Great extent | 16 | 48.48% | 64 |
| Moderate extent | 8 | 24.24% | 24 |
| Low extent | 2 | 6.06% | 4 |
| Very low extent | 2 | 6.06% | 2 |
| Total | 33 | 100% | 119 |

Mean $=\sum fx/n: 119/33=3.606$; an indication that project monitoring and control skills influence project management skills to great extent.

4.8 Testing of hypothesis using Chi-Square

In this study the researcher tested the alternative hypotheses for each independent variable as shown below.

4.8.1 First hypothesis on planning skills

H₁; There is a significant relationship between Planning and role of management skills on performance of construction projects in Mombasa based construction firms

Table 4.9 Showing observed and expected responses on extent to which Planning influences role of Project Management Skills on performance of construction projects in Mombasa based construction firms.

| | | | | | |
|--------------|----|----|----|----|----|
| Likert scale | 5 | 4 | 3 | 2 | 1 |
| Observed (O) | 19 | 7 | 4 | 2 | 2 |
| Expected (E) | 33 | 33 | 33 | 33 | 33 |

Table 4.10 showing Chi-Square testing for the first hypothesis

| O | E | (O-E) | (O-E) ² | (O-E) ² /E |
|----|----|-------|--------------------|-----------------------|
| 19 | 33 | -14 | 196 | 5.94 |
| 7 | 33 | -26 | 676 | 20.48 |
| 4 | 33 | -29 | 841 | 25.48 |
| 2 | 33 | -31 | 961 | 29.12 |
| 2 | 33 | -32 | 1024 | 31.03 |

$$\sum (O-E)^2/E = 112.04$$

$$\chi^2_c = 112.04 > \chi^2_{\alpha, 0.05} = 9.488 \text{ at 4 degrees of freedom and 5\% level of confidence.}$$

Since the calculated chi-square value of 112.04 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis in that there is a significant relationship between Planning and role of management skills on performance of construction projects in Mombasa based construction firms.

4.8.2 Second hypothesis on communication skills

H₁; There is a significant relationship between communication and role of management skills on performance of construction projects in Mombasa based construction firms

Table 4.11 Showing observed and expected responses on extent to which communication influences role of Project Management Skills on performance of construction projects in Mombasa based construction firms.

| | | | | | |
|--------------|----|----|----|----|----|
| Likert scale | 5 | 4 | 3 | 2 | 1 |
| Observed (O) | 14 | 9 | 6 | 4 | 0 |
| Expected (E) | 33 | 33 | 33 | 33 | 33 |

Table 4.12 Showing Chi-Square testing for the second hypothesis

| O | E | (O-E) | (O-E) ² | (O-E) ² /E |
|----|----|-------|--------------------|-----------------------|
| 14 | 33 | -19 | 361 | 10.49 |
| 9 | 33 | -24 | 576 | 17.45 |
| 6 | 33 | -27 | 729 | 22.09 |
| 4 | 33 | -29 | 841 | 25.48 |
| 0 | 33 | -33 | 1089 | 33 |

$$\sum (O-E)^2/E = 108.96$$

$\chi^2_c = 108.96 > \chi^2_{0.05} = 9.488$ at 4 degrees of freedom and 5% level of confidence.

Since the calculated chi-square value of 108.96 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis in that there is a significant relationship between communication and role of management skills on performance of construction projects in Mombasa based construction firms.

4.8.2 Third hypothesis on Risk management skills

H₁; There is a significant relationship between risk management and role of management skills on performance of construction projects in Mombasa based construction firms

Table 4.13 Showing observed and expected responses on extent to which risk management influences role of Project Management Skills on performance of construction projects in Mombasa based construction firms.

| Likert scale | 5 | 4 | 3 | 2 | 1 |
|--------------|----|----|----|----|----|
| Observed (O) | 12 | 9 | 7 | 5 | 0 |
| Expected (E) | 33 | 33 | 33 | 33 | 33 |

Table 4.14 Showing Chi-Square testing for the third hypothesis

| O | E | (O-E) | (O-E) ² | (O-E) ² /E |
|----|----|-------|--------------------|-----------------------|
| 12 | 33 | -21 | 441 | 13.36 |
| 9 | 33 | -24 | 576 | 17.45 |
| 7 | 33 | -26 | 676 | 20.48 |
| 5 | 33 | -28 | 784 | 23.76 |
| 0 | 33 | -33 | 1089 | 33 |

$$\sum (O-E)^2/E = 108.05$$

$\chi^2_{c=108.05} > \chi^2_{\alpha=0.05} = 9.488$ at 4 degrees of freedom and 5% level of confidence.

Since the calculated chi-square value of 108.05 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis in that there is a significant relationship between risk management and role of management skills on performance of construction projects in Mombasa based construction firms.

4.8.3 Fourth hypothesis on monitoring and control skills

H₁; There is a significant relationship between monitoring and control, and role of management skills on performance of construction projects in Mombasa based construction firms.

Table 4.15 Showing observed and expected responses on extent to which monitoring and control influences role of Project Management Skills on performance of construction projects in Mombasa based construction firms.

| | | | | | |
|--------------|----|----|----|----|----|
| Likert scale | 5 | 4 | 3 | 2 | 1 |
| Observed (O) | 5 | 16 | 8 | 2 | 2 |
| Expected (E) | 33 | 33 | 33 | 33 | 33 |

Table 4.16 Showing Chi-Square testing for the third hypothesis

| O | E | (O-E) | (O-E) ² | (O-E) ² /E |
|----|----|-------|--------------------|-----------------------|
| 5 | 33 | -28 | 784 | 23.76 |
| 16 | 33 | -17 | 289 | 8.76 |
| 8 | 33 | -25 | 625 | 18.94 |
| 2 | 33 | -31 | 961 | 29.12 |
| 2 | 33 | -31 | 961 | 29.12 |

$$\sum (O-E)^2/E = 109.7$$

$\chi^2_{c=109.7} > \chi^2_{\alpha_{0.05}} = 9.488$ at 4 degrees of freedom and 5% level of confidence.

Since the calculated chi-square value of 109.7 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis in that there is a significant relationship between monitoring and control, and role of management skills on performance of construction projects in Mombasa based construction firms

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This covers the summary of findings, conclusion and recommendations in line with the topic of study that is to investigate the influence of project management skills on Performance of construction projects.

5.2 Summary of findings

Majority of the respondents had attained academic qualification commensurate with their job designation and it can therefore be inferred that academic qualification influences role of project management skills on Performance of construction projects in construction firms based within Mombasa. The findings of the study concurs with Ngulube & Tafor, (2006) who observed that each organization structure with a matching head count budget to support the business and the persons assigned various duties should possess requisite professional and academic qualifications.

The first objective of the study was to assess the role of Project Planning skills on construction projects in construction firms based within Mombasa. The respondents were asked to indicate the role of project planning skills on construction projects undertaken by construction firms based within Mombasa. The majority (95%) of the respondents indicated the role of project planning skills on construction projects undertaken by construction firms based within Mombasa while 5% disagreed to indicated the role of project planning skills on construction projects undertaken by construction firms based within Mombasa. This was in line with Fama & Jensen, (2003) who argued that there is a strong relationship between the Role of Project Management Skills and successful project implementation in any construction firm.

On second objective; project communication skills, the respondents were asked does employee communication influence the role of project management skills on Performance of construction firms at Mombasa. The majority (88%) of the respondents indicated that

employee communication influence the role of project management skills on Performance of construction firms at Mombasa while 12% disagreed.

The study sought to find out the Level of agreement with the statement relating to employee communication influence on the role of project management skills on performance of construction firms at Mombasa. From the findings respondents agreed that the need to train or imparting of new skills and communication has become a daily aspect of each individual's working life, organizations have initiated integrated employee communication programs to assist in the Performance of construction firms at Mombasa and management must ensure that adequate plans and resources exist to recruit, motivate, train and develop employees communication. The findings relate with those of Moses (2003) who explained, that employee communication management must ensure that adequate plans and resources exist to recruit, motivate, train and develop employees communication.

Arnaldo, (2001) in his study argued that the adoption of employee communication is a simple solely task-related model of Performance of construction firms.

On the third objective, project risk management the respondents were asked to indicate whether risk management influence role of project management skills on Performance of construction firms at Mombasa. Based on the findings, majority (63%) of the respondents indicated that risk management influence role of project management skills on Performance of construction firms at Mombasa while (37%) were of the contrary view. Adeyemi & Salami, (2010), acknowledges risk management influence role of project management skills on Performance of construction firms in the case of construction industry. Given that a significant proportion of respondents disagreed that risk management influence role of project management skills on Performance of construction firms is a clear indication of the need for risk management system so as to ensure effectiveness in job satisfaction.

The study sought to evaluate the extent to which risk management influence role of project management skills on Performance of construction firms at Mombasa. (38%) of the respondents indicated that risk management influence performance of construction firms at Mombasa to a very great extent, (26.3%) indicated that risk management influence role of project management skills on Performance of construction firms at Mombasa to a Great extent, (21.7%) indicated that risk management influence role of project management skills

on Performance of construction firms at Mombasa to a moderate extent, while (14%) indicated that risk management influence role of project management skills on Performance of construction firms at Mombasa to a low extent. . The findings relate with those of Myers, (2004) who explained, that there is a relationship between the risk management and their role on project management skills and in successful project implementation and management.

On the fourth objective, the respondents were asked to indicate whether Monitoring and Control skills influence the role of project management skills on Performance of construction projects. The findings revealed that majority (53%) of the respondents indicated that Monitoring and Control skills influence the role of project management skills on performance of construction projects while 47% disagreed. Poor project skills create problems in the monitoring and control as they result in misdirection for project management.

5.2 Discussions

The study found it paramount to determine the respondents' gender in order to ascertain whether there was gender parity in the positions indicated by the respondents. According to the analysis it was evident that majority of the respondents were male meaning that construction industry is dominated by male counterparts. Acker, (2006), observed that gender equality was a very important as a trait as it can be used to improve performance of construction projects. He argued that it fosters teamwork and also creates a sense of unity and an aspect of working together for a common goal with every individual effort whether male or female being important to the attainment of the overall objectives. A gender sensitive firm provides a conducive working environment where a staff/manager is supposed to interact with other colleagues of the opposite gender in pursuit of excellence and achievement of set performance.

According to the findings on age matters, 50% of the respondents were aged between 30-40 years, 30% were aged between 41-50 years, 10% were aged above 50 years while 10% were aged below 30 years. Jenster & Hussey, (2001) in their study of determining strategic capability in organizations associated age with employee efficiency in service delivery where they indicated that there is a positive correlation between age and employee

performance. He argued the older an employee was the higher the performance up to a certain age where performance would start declining.

Experience wise on construction industry, majority (39%) of the respondents had over 10 years' experience, 27% had between 5-10 years, while 24% had between 1-5 years of experience. It was also revealed that 10% of the respondents had an experience not exceeding 1 year. Construction projects profession depends highly on the skills and experience acquired. From the findings therefore majority of the respondents were experienced and hence can be highly informative on issues that relate to construction projects profession at firms based within Mombasa.

On academic qualifications, a significant number totaling to (38%) were diploma holders while 31% of the respondents indicated that they had attained university bachelor degree. The study further indicated that 26% of the respondents were secondary certificate holders while minority (5%) had attained postgraduate qualifications which included masters.

The study found out that Projects are constrained by inadequate planning skills that are required for effective planning for project success. Project planning is complicated and risky, hence requires varying skills set for successful project implementation and management. Increased complexity in the projects with pressure of time and costs has led to the introduction of high quality software and hardware which requires skilled planning.

The study found out the following in regards to project management skills: The need to train or imparting of new skills and communication has become a daily aspect of each individual's working life, Organizations have initiated integrated employee communication programs to assist in the performance of construction firms in Mombasa; Management must ensure that adequate plans and resources exist to recruit, motivate, train and develop employees communication.

From the findings respondents agreed that project risk management is essential in successful project implementation and management however it is influenced by the skill levels of the staff and management. Key risk management skills are needed to hedge projects against many uncertainties i.e. resource shortage, contractors' inability to meet completion dates and other types of risks. Most staff and management lack risk management skills and do not take proactive initiatives in the management of risks leading to project failure.

From the findings in regards to project monitoring and control skills, respondents agreed that Poor project skills create problems in the monitoring and control as they result in misdirection for project management. Poor project skills create problems in the monitoring and control as they result in misdirection for project management. Low skills level hinder active management participation in monitoring due to the inadequacy of data and general information.

5.3 Conclusion

The study concludes that

Investing in adequate professional and technical skills required in project management is an important foundation for ensuring the success of each project. Proper project management practices such as planning, risk management, and monitoring and control seek to cushion the project against present and potential risks or failure.

Poor project management skills may result in wastage of resources, time, and distortion in quality of the final product or even total project failure. The amount of time and effort dedicated to planning as an element of project management influences the success or failure of a project. The more effort and time applied, the higher the probability that the project will achieve its set objectives.

Due to the risky and complex nature of projects, it is important for the project management team to incorporate the use of hardware and software available in the market to handle such complexities by conducting skilled planning. Such software helps in the managing of multiple tasks in projects which might pose challenges if handled manually.

In project risk management, risk identification and mitigation is an essential skill required by every project manager. Adequate risk management strategies are vital in identifying uncertainties in a project and employing mechanisms to respond to such risks. Practices such reviewing past projects would provide vital information on the possible areas of uncertainty in a current project.

Project Monitoring and controlling skills can be used to provide feedback between project phases, check the linkages for flow and consistency in order to implement corrective or preventive actions to bring the project into compliance with the project management plan.

Project monitoring and control skills contribute least to the construction project management skills required in performance of construction firms based in Mombasa. This is closely followed by project communication skills and project risk management skills, while project planning skills have the highest role in performance of construction projects in the case of construction firms in Mombasa County, Kenya.

5.4 Recommendations

The study recommend that construction firms at Mombasa must ensure that adequate plans and resources exist to recruit, motivate, train and develop employees; Key risk management skills are needed to hedge projects against many uncertainties i.e. resource shortage, contractors' inability to meet completion dates and other types of risks communicationat Mombasa construction firms; should monitor and evaluate projects adequately, and develop monitoring mechanisms.

It is essential that all organizations that are involved in projects, trains its project management team so as to raise the standards of results emanating from every project. Government agencies, parastatals, non-governmental organizations and corporate, community and faith-based organizations should ensure that their project teams have the necessary skills such as planning,communication, risk management, and monitoring and control so as to cushion the project against failure.

Investing in high quality hardware and software compliments the planning skills of the project management team. Project management software are necessary when handling complex projects as it can determine the shortest and longest period the project can be implemented at the same time showing activities that can be undertaken together. Sometimes the total project duration can be reduced in what is referred to as 'crashing' by increasing the resources needed to carry out an activity.

Research should also be carried out on the effect of training project planning, risk management, and monitoring and control in sector-specific projects especially in Kenya. This information would be important for increasing the rate of success in projects within these sectors.

5.5 Suggestions for further studies

The study investigated the role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa. Further research should be carried out to find out the hindrances to success in project management skills on Performance of construction projects in Kenya.

5.5 Contribution to body of knowledge

The study investigated the role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa. Further research should be carried out to find out the hindrances to success in project management skills on Performance of construction projects in Kenya.

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APPENDICES

Appendix 1: Letter of Transmittal



University of Nairobi

School of continuing and distance education

P.O Box 30197

Nairobi

June, 2014

Dear respondent

RE: FILLING OF QUESTIONNAIRE

I am a post graduate student at University of Nairobi School of continuing and distance education pursuing a master of degree in project planning and management. In order to fulfill the degree requirement, I am undertaking a research on the role of project management skills on performance of construction projects: a case of construction firms based within Mombasa County. This is kindly to request you to fill the attached questionnaire as honestly which will be collected later.

The information collected will be exclusively used for academic purposes and will be treated with strict confidentiality. At no time will your name or other personal identity appear in this report. The findings of this research can be availed to you upon request.

I thank you for your cooperation

Yours faithful

Kenedy Gitonga Nyaga

L50/66066/2013

Appendix 2: Questionnaire

My name is Kenedy Nyagaand I am an MPPM student from the University of Nairobi. I am currently doing a study that will assess the role of project management skills on Performance of construction projects with reference to construction firms based within Mombasa. For this reason, I would ask you to spare a few minutes to give feedback on the following. Since honesty is regarded as the best policy, it is my sincere hope that the answers in this questionnaire will epitomize the weight of this sentiment.

Part A: Respondents Information

1. What is your gender?

Female Male

2. What is your age in years?

Below 30

30-40

41-50

Above 50

3. How long have you worked in your present organization?

Below 1 year

1-5 years

5-10 years

Above 10 years

4. Level of education

Secondary Certificate Diploma level

Bachelor's Degree Level Masters Level

Post Graduate

Part B:

Project Planning Skills

1. In your opinion does planning affect your performance in your firm?

Yes []

No []

If No, explain why?

.....
.....

If yes how?

.....
.....

If yes, how many times have you planned in a given project on average

Once []

2-4 times []

5-10 []

over 10 times []

2. To what extent do planning role of project management skills affect Performance on your firm ?

Very great extent []

Great extent []

Moderate extent []

Little extent []

No extent []

3. What is your level of agreement with the following statements relating to project planning skills on Performance of your construction firm? (1- Strongly agree, 2- Agree, 3-Neutral, 4-Disagree, 5- Strongly Disagree)

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Projects are constrained by inadequate planning skills that are required for effective planning for project success. | | | | | |
| Project planning is complicated and risky, hence requires varying skills sets for successful project implementation and management | | | | | |
| Increasing complexity in the projects with pressure of time and costs has led to the introduction of high quality software and hardware which requires skilled planning | | | | | |

4. In your view, how else do project planning skills affect pperformance in construction firms you work in?

.....

.....

.....

.....

Project Communication Skills

1. Does employee communication influence the role of project management skills on Performance of construction firms at Mombasa?

Yes []

No []

If No, explain why?

.....
.....

If yes how?

.....
.....

2. To what extent does employee communication influence the role of project management skills on Performance of construction firms at Mombasa?

Very great extent []

Great extent []

Moderate extent []

Little extent []

No extent []

3. What is your level of agreement with the following statements relating to employee communication influence the role of project management skills on Performance of construction firms at Mombasa? (1- Strongly agree, 2- Agree, 3-Neutral, 4-Disagree, 5- Strongly Disagree)

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| The need to train or imparting of new skills and communication has become a daily aspect of each individual's working life | | | | | |
| Organizations have initiated integrated employee communication programs to assist in the Performance of construction firms at Mombasa | | | | | |
| Management must ensure that adequate plans and resources exist to recruit, motivate, train and develop employees communication. | | | | | |

4. In your view, how else does communication influence the role of project management skills on Performance of construction firms at Mombasa?

.....

.....

.....

.....

Project Risk Management Skills

5. Do risk management influence role of project management skills on Performance of construction firms at Mombasa?

Yes []

No []

6. To what extent do risk management influence role of project management skills on Performance of construction firms at Mombasa?

Very great extent []

Great extent []

Moderate extent []

Little extent []

No extent []

7. What is your level of agreement with the following statements relating to risk management and their role on project management skills on Performance of construction firms at Mombasa? (1- Strongly agree, 2- Agree, 3-Neutral, 4-Disagree, 5- Strongly Disagree)

| | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Project Risk management is essential in successful project implementation and management however it is influenced by the skill levels of the staff and management | | | | | |
| Key risk management skills are needed to hedge projects against many uncertainties i.e. resource shortage, contractors' inability to meet completion dates and other types of risks. | | | | | |
| Most staff and management lack risk management skills and do not take proactive initiatives in the management of risks leading to project failure. | | | | | |
| Project managers rarely involve the local community in risk management relating to project implementation and management. | | | | | |

8. In your assessment what is the level of influence of risk management on role of project management skills on Performance of construction firms at Mombasa?

.....

.....

.....

.....

Project Monitoring and Control skills

9. Do Monitoring and Control involve in the role of project management skills on Performance of construction projects?

Yes []

No []

If No, explain why?

.....
.....

If yes how?

.....
.....

10. To what extent does Monitoring and Control involve in the role of project management skills on Performance of construction projects?

- Very great extent []
- Great extent []
- Moderate extent []
- Little extent []
- No extent []

11. What is your level of agreement with the following statements relating to Monitoring and Control involvement in the role of project management skills on Performance of construction projects? (1- Strongly agree, 2- Agree, 3-Neutral, 4-Disagree, 5- Strongly Disagree)

| | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Poor project skills create problems in the monitoring and control as the result in misdirection for project management | | | | | |
| There is a lack of professional and technical skills, which has led to poor project quality. | | | | | |
| Low skills level hinder active management participation in monitoring due to the inadequacy of data and general information. | | | | | |
| Since skill capacities for projects spread across the construction firms to monitor and evaluate projects are inadequate, hence monitoring mechanisms are not well developed | | | | | |

12. In your assessment to what level does project monitoring and control affect project Management skills on Performance of construction firms in Mombasa?

.....

.....

.....

.....

Appendix 3: List of Construction Firms in Mombasa County

- 1) M/s Westcon Contractors Ltd
P.O Box 87556-80100
MOMBASA\

- 2) M/s Ezgo Limited
P.O Box 43347-80100
MOMBASA

- 3) M/s KCN Construction Co. Ltd
MOMBASA

- 4) M/s Comarco Construction Co. Ltd
Liwatoni Road
PO Box 94081-80107
MOMBASA

- 5) M/s Gateway Innovations
P.O Box 2114-80100
MOMBASA

- 6) M/s Outback Investments Ltd
P.O Box 190-80100
MOMBASA

- 7) M/s Cemtech
P.O Box 85935-80100
MOMBASA

- 8) M/s NjakaNjega
P.O Box 42426-80100
MOMBASA
- 9) M/s Kiziwi General Services Ltd
Mei Place 1st Avenue, Nyali
P.O. Box 41114-80100
MOMBASA
- 10) M/s Jomaki Enterprises Ltd
Ivory House 1st floor, Moi Avenue
P.O. Box 85693-80100
MOMBASA
- 11) M/s Manacon Construction Co. Ltd
Changamwe Airport Road,
P.O. Box 93353-80102
MOMBASA
- 12) M/s Kisasa Construction & General Supplies Ltd
P.O. Box 87843-80100
MOMBASA
- 13) M/s Associated Electrical & Hardware Supplies Ltd
Jomo Kenyatta Road,
P.O. Box 89157-80100
MOMBASA

- 14) M/s Jomige Agencies Ltd
Salmabhai Bldg., Opp. Jundan Mosque
P.O. Box 40439-80100
MOMBASA
- 15) M/s Jopama Building Construction Contractors
PirbhaiBldg Opp. Blue Room
P.O. Box 80022-80100
MOMBASA
- 16) M/s Dannex Investments & Engineering Works Ltd
P.O. Box 41839-80100
MOMBASA
- 17) M/s Aspire (K) Ltd
P.O. Box 84161-80100
MOMBASA
- 18) M/s Wells construction co. ltd
P.O .2323-80100
MOMBASA
- 19) M/s Marble construction co. ltd
P.O. 88543-80100
MOMBASA
- 20) M/s Dhanjal Brothers
P.O Box 82909-80100
MOMBASA

- 21) M/s Grand Logistics Ltd
P.O Box 98821-80100
MOMBASA
- 22) M/s Kiun Communication Ltd
P.O Box 41545-80100
MOMBASA
- 23) M/s Transmar Ltd
MOMBASA
- 24) M/s Universal Business Solution
MOMBASA
- 25) M/s Source Logistics East Africa Ltd
2d Floor, Fidelity Shield Insurance Building,
P.O. Box 16698-80100
MOMBASA
- 26) M/s Yuaf Agencies Ltd
P.O. Box 16663-80100
MOMBASA
- 27) M/s S.S Mehta & Sons Ltd
P.O. Box 41247-80100
MOMBASA
- 28) M/s Funzi Island Co. Ltd
P.O. Box 84791
MOMBASA

- 29) M/s Pink Investments Ltd
P.O. Box
MOMBASA
- 30) M/s Haafah East Africa Ltd
P.O. Box 16523-80100
MOMBASA
- 31) M/s A. A. Bayusuf & Sons Ltd
P.O. Box 94024
MOMBASA
- 32) M/s Absal & Sons Enterprises Ltd
Railways Hse No. 5 Mbaraki Rd
P.O. Box 87578-80100
MOMBASA
- 33) M/s Priceworth International Ltd
Nkurumah Rd, Furaha Plaza 6th Floor
P.O. Box 2640
MOMBASA
- 34) M/s Majari investments Ltd
P.O. Box 82947-80100
MOMBASA
- 35) M/s Sea- tech ltd
P.O. Box 2685-80100
MOMBASA

36) M/s Mulji-Devraj & Brothers

P.O. Box 82261-80100

MOMBASA

37) M/s Makk Hard Agencies Ltd

P.O. Box 89031

MOMBASA

38) M/s Harbour Constructions Ltd

Kileleshwa, Thuguta Road

P.O. Box 36503-00200

MOMBASA

39) M/s Manyub Enterprises Ltd

P.O. Box 99840-80100

MOMBASA

40) M/s Kasamba Enterprises Ltd

P.O. Box 85787-80100

MOMBASA

41) M/s South Shore International Ltd

P.O. Box 34331-80118

MOMBASA

42) M/s Mascot General Contractors Ltd

P.O. Box 2948-80100

MOMBASA

43) M/s Arcs & Angles Co. Ltd

P.O. Box 42666-80100

MOMBASA

44) M/s Pasacon General Construction & Electrical Services Ltd

P.O. Box 89430-80100

MOMBASA

45) M/s SACCI Engineering Works

P.O .85237-00200

MOMBASA

46) M/s Coxwell Express Co. Ltd

P.O Box 99307-80107

MOMBASA

47) M/s Bijose Investments Ltd

P.O. Box 92-80105

MOMBASA

48) M/s HarbourConstractions Ltd

P.O. Box 84461 -80100

MOMBASA

49) M/s Thrine Consultants Ltd

P.O. Box 1525

MOMBASA

50) M/s Migingo Ship Contractors

P.O. Box 98658-80100

MOMBASA

51) M/s Somakin Construction & Services

P.O Box 3702

MOMBASA

52) M/s Double Portion Agency Ltd

P.O Box 2985

MOMBASA

53) M/s. Absal& Sons

P.O. Box 87578 – 80100

MOMBASA

54) M/s Italbuild Import Ltd

P.O. Box 90189

MOMBASA

55) M/s Jibril Brothers Enterprises Ltd

P.O Box 1598-80100

MOMBASA

56) M/s Pamu engineering company Ltd

P.O Box 87754-80100

MOMBASA

57) M/s Tuts Enterprises

P.O. Box 82947 - 80100

MOMBASA

58) M/s Goldencara Investments Ltd

P.O Box 68301-0061

MOMBASA