



Determinants of Project Teams Performance In State Corporations: A Case of Kenya Power Company

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ABSTRACT

The purpose of the study was to examine the determinants of project team performance in state corporations with case study of Kenya power Ltd. The study employed descriptive survey research and case study designs which adopted both quantitative and qualitative approaches. The study targeted 150 project managers from infrastructure development division of Kenya power Ltd. A census survey technique was considered for the research. A pilot study was conducted to pre-test the validity and reliability of instruments for data collection. Data was collected through questionnaires. Data collected was analysed using the Statistical Package for Social Scientists (SPSS) version 22 and excel. An analysis of variance (ANOVA) was used to measure statistically the significance of various factors that determine performance of project teams in state corporations. The study adopted regression analysis at 5% level of significance to determine strength and direction of the relationship of the variables under study. It is notable that there exists a strong positive relationship between the independent variables and dependent variable as shown by R value (0.827). The study established that project management skills influence performance of project teams. From the study results top management support on training influence completion of projects in time in the organization. The work environment of the project teams affected their performance. The success or failure of the project rests squarely on whether adequate and accurate planning has not been done prior to start it. The study recommends that there is need for the project managers to have project management skills to enhance performance of project teams.

Keywords: project team, performance, state corporations, project management skills

INTRODUCTION

Performance is defined as the accomplishment of a given task measured against pre-set known standards, completeness, cost and speed (World Bank, 2014). Performance can also be defined as the results of an organization, group or investment over a given period of time (World Bank, 2012). Several studies related to labor productivity and performance has been performed for construction projects in the past. Several of them were related to calculating the effect of productivity factors. Measureable calculations about the effects of those factors are required for several purposes, it includes estimation of the construction project, and it's planning and scheduling (Gundecha 2012). However, past study shows that it is tough to calculate such an impact, and at present there are no universally accepted standards to measure factors affecting labor performance in projects. This lack of methods for measuring effects highlights the need to enhance measureable assessments on the factors affecting performance of project teams in commercial State Corporation with a case study of KPLC.

Achieving better project team performance and productivity requires detailed studies of the actual labor cost. Various labors have different variables affecting their productivity levels. For every project, productivity, cost, quality, and time have been the main concern. Better performance can be achieved if project management includes the skills of education and training, the work method, personal health, motivational factors, the type of tools, machines, required equipment and materials, personal skills, the workload to be executed, expected work quality, work location, the type of work to be done, and supervisory personnel (Rowlinson and Proctor, 2014).

In today's era, one of the biggest concerns for any organization is to improve their performance, representing the effective and efficient conversion of resources into marketable products and determining business profitability (Wilcox et al, 2013). Consequently, considerable effort has been directed to understand the performance concept

with different approaches taken by researchers, resulting in a wide variety of productivity and performance definitions (Lema & Samson, 2011, Oglesby et al, 2014, Pilcher, 2012). This study shall find out how performance of project teams influence implementation of project teams in Kenya power.

In 2000, the United Nations Committee on Housing, Building, and Planning (UNC) published a significant manual concerning the effect of repetition on project building operations and processes (UNC, 2011). The research discovered the necessity for a rise in performance of project teams was perhaps more severe in the public sector compared to any other sector. It was necessary to implement, as far as possible, industry-wide principles of production throughout the construction process. Though, it was known that careful adaptation would be required to implement the knowledge and experience gained in the manufacturing industry to the public sector building construction industry (Alarcon & Borcharding 2013).

Past studies and research show a number of factors affecting project team performance, there are still anonymous factors that need to be further studied even in developed countries (Makulsawatudom & Emsley, 2012). A study by (Polat & Arditi, 2011) stated that policies to rise project team performance are not always similar in each country. Their study identified different factors affecting labor performance and productivity and grouped them according to their characteristics such as, design, execution plan, material, equipment, labor, health and safety, supervision, working time, project factor, quality, leadership and coordination, organization, owner, consultant, and external factors.

In Kenya, there is an abundant supply of semi-skilled and unskilled labour which needs to be engaged in public sector projects so as to promote the creation of employment (KNBS, 2012). The application of labour performance output constants and standards in projects are key to ensure efficiency. Lack of adequate home grown accurate data for project team performance rates in Kenya has made planning and estimating for activities on construction sites unpredictable and there by affecting the delivery of public projects within the stipulated time (Wamalwa, 2010).

Kenya Power and Lighting Company Limited is engaged in the transmission, distribution and retail of electricity purchased in bulk from Kenya Electricity Generating Company Limited (KenGen), Independent Power Producers (IPPs), Uganda Electricity Transmission Company Limited (UETCL) and Tanzania Electric Supply Company Limited (TANESCO). The Company operates in four regions: Nairobi, Coast, West Kenya and Mount Kenya. Its interconnected network of transmission and distribution lines covers about 47,035 kilometers.

Statement of the Problem

Project failures and poor quality project deliverables is one of the greatest and severe problems in relation to poor project team performance affects the business of Kenya power Ltd (WB, 2013). This study attempts to research on the determinants of project team performance in KPLC to bridge the gap between labour performance and successful project implementation and completion. This has been necessitated by the low project completion success rate in KPLC. According to the statistics obtained from the infrastructure division of KPLC, the low project completion success rate is associated to matters relating to project team performance. The study aims at studying the determinants of project team performance in KPLC with a view of coming up with recommendations that shall assist KPLC and other state corporations to improve on their project completion success rate. According to World Bank report (WB, 2013), the objective of the Energy Sector Recovery Project (ESRP) is to increase access to electricity in urban and semi-urban areas while improving the efficiency, reliability and quality of service to customers. To realize this objective, KPLC was mandated to undertake ESRP with a target of constructing and rehabilitating 65 substations and 2,000 kilometres of distribution lines between 2005 and 2015 (WB, 2013). However, statistics from World Bank indicates KPLC constructed 40 substations and 1,300 kilometres of distribution lines between 2005 and 2013 (WB, 2013). This indicates a shortage of 15 substations and 700 kilometres of distribution lines whose cost is Kshs.7 billion (WB, 2013). According to ROK (2013), late utilization of such massive investment leads to costly economic development in the Country. Further statistics indicate the projects had time overruns ranging from -4.6% to 53.4 %, while the cost overruns varied between 9.4% and 29 % (WB, 2013). Of various project-costs components such as labour materials and equipment, labour component is contributes most the delivery of poor quality projects products and even failure of various projects due to poor project team performance.

Whereas others components (equipment and material) are determined by the market price and are consequently beyond the influence of project management. Labour cost in construction industry is estimated to be about 33%-50% of the entire project cost (Hanna *et al.*, 2014), this applies to Kenya power projects which are mainly construction projects. Because labour is more variable and unpredictable than other project-cost components, it becomes necessary to understand the effects of different factors on labour performance and productivity (Hanna *et al.*, 2015). Previous researches confirm that project team performance loss results from various factors, which include but not limited to various variation in drawings, long hours of extra work, poor field management, and extreme climatic conditions (Alarcon & Borcharding, 2013; Leonard, 2010; Sanders & Thomas, 2013; Thomas & Oloufa, 2011). These factors typically produce extra disturbances that affect productivity and are beyond the direct

control of a contractor, resulting in productivity loss or extra work hours necessary to accomplish the task. It is on this premise the study sought to establish the determinants of project team performance in Kenyan State Corporations specifically Kenya Power Ltd.

Objectives of the study

The purpose of the study was to establish the determinants of project team performance in state corporations in Kenya. The specific objectives of the studies were to:

- i. Examine how project management skills influence performance of project teams in state corporations in Kenya.
- ii. Determine how top management support influence performance of project teams in state corporations in Kenya
- iii. Establish how work environment influence performance of project teams in state corporations in Kenya.
- iv. Explore how project life cycle influence performance of project teams in state corporations in Kenya.

Research questions

The study sought to be guided by the following specific questions:

- i. How do project management skills influence performance of project teams in state corporations in Kenya?
- ii. How does top management support influence performance of project teams in state corporations in Kenya
- iii. How does work environment influence performance of project teams in state corporations in Kenya.
- iv. What is the influence of project life cycle on performance of project teams in state corporations in Kenya?

LITERATURE REVIEW

Theoretical Review

Stewardship theory

According to this theory, the top management of the organizations are regarded as the stewards of the projects assets and liabilities and are expected to act in the best interest of the stakeholders (Mallin, 2007). He further observes that the stewards must take leadership position. Stewardship theory relates to the board's task of providing support and advice to management (Davis, 1993). The theory has its roots in psychology and sociology. Abdulla and Valentine (2009), note that stewards are organizations managers and leaders working for the interest of shareholders. The stewards protect and make profits for shareholders and are satisfied and motivated when organizational success is attained. The theory emphasizes that effective control held by project managers empowers them to maximize firm performance and corporate profits.

The theory is applicable in analysing performance of project teams. The project managers and committee leaders elected to manage the projects play the managers role on behalf of the members (Besner & Hobbs ,2009). Acquiring the project management skills is helpful to provide knowledge and ability that will enhance sustainability of these projects.

In this study, since organizations and governments develop policies to guide the development of a given region for the projects to be implemented, applying this theory in strategic planning presupposes flexibility on the part of an organization to come with sound policies to enhance sustainability of the projects. Thus, the study seeks to establish whether there exists a stewardship policy and how it affects performance of project teams. The above theory facilitates understanding of the first research objective to examine influence of project management skills on performance of project teams in state corporations.

Resource Based Theory

Penrose is credited with establishing the foundations of resource-based view as a theory (Roos & Roos, 1997). Resource-based theory has been developed to understand how organizations achieve sustainable competitive advantages (Barney, 1986). The theory focuses on the idea of costly to copy attributes of the firm as sources of business returns and the means to achieve superior performance and competitive advantage (Conner, 1991, Hamel & Prahalad, 1996). Barney, (1991) contends that a firm can be understood as a collection of physical capital resources, human capital resources and organizational resources. Resources that cannot be easily purchased, that require an extended learning process or a change in the corporate culture, are more likely to be unique to the enterprise and, therefore, more difficult to imitate by competitors (Barney, 1991). It is argued that performance differentials between firms depend on having a set of unique inputs and capabilities (Conner, 1991). According to resource-based theory, competitive advantage occurs only when there is a situation of resource heterogeneity and resource immobility (Barney, 1991). Heterogeneity refers to different resources across firms while resource immobility is the inability of competing firms to obtain resources from other firms.

Top Management Team Theory

The emerging field of strategic decision-making - top management team theory has raised widespread concern in the academic community (Ifinedo, 2008). Different from traditional strategic management theory, which emphasizes on

purely economic and technological processes or information process, the theory studies the strategic choice and organizational performance determinants from the process of cognitive psychology of top management team which overturns the economic man hypothesis in traditional theory and proposes the hypothesis of limited rationality proposed by the Carnegie school (Müller & Jugdev, 2012). As the cognitive psychological process of top management team is too complicated, this theory invokes prior marketing research on demography to suggest that managerial characteristics and its heterogeneity (such as age, work experience, educational background) are reasonable proxies for underlying differences in cognitions, values, and perceptions process, which could be good predictor to predict organizational outcome (such as strategic choice, organizational performance) (DvirSadeh & Malach-Pines, 2006). In relation to this study, the skills and the support of the top management is paramount in the performance of project teams. It reduces the timeline of projects as it helps to smoothen the communication process. The above theory facilitates understanding of the first research objective to examine influence of Top management support on performance of project teams in state corporations.

Project scheduling theory

The project scheduling involves the scheduling of project activities subject to precedence and/or resource constraints (Herroelen, 2005). Goldratt (1997) argues that project scheduling procedures do not matter because "in each case the impact on the lead time of the projects is very small". Herroelen and Leus (2005) identify and illuminate popular misconceptions about project scheduling in a resource-constrained environment. They argue that the above type of reasoning invites the reader to become trapped in the crucial misconception that looking for the best procedure for resolving resource conflicts does not pay off in practice and has a negligible impact on planned project duration. Construction projects may face schedule delays.

Callahan *et al.* (2006) define delay in construction claims as "the time during which some part of the construction project has been extended or not executed owing to an unexpected event". This may result in rescheduling the project which may lead to delays on the project completion date. In relation to this study, project planning activities with regard to effective implementation of water development projects in Kenya has proven to be a difficult accomplishment regardless of organization type or sector implementing these water projects, (Lewis, 2005). Thus the researcher seeks to explore whether the project planning phase was done according to the set targets for proper and successful implementation of the water projects. This theory instigated second research question; to what extent does project life cycle influence performance of project teams in Kenya power?

CONCEPTUAL FRAMEWORK

A conceptual framework is a logically developed, described and elaborated network of interrelationships among variables integral in the dynamics of a situation being investigated. It explains the theory underlying these relationships and describes the nature and direction of these relationships (Neumann, 2000). A variable is a measurable characteristic that assumes different values among the subject. It is therefore a logical way of expressing a particular attribute in a subject (Mugenda and Mugenda, 2003). A dependent variable is the variable of primary interest to the researcher. The dependent variable was the performance of project teams. An independent variable is the one that influences the dependent variable in either a positive or negative way (Kothari, 2003). The independent variable in the study were project management skills, Work environment, Top management support and project life cycle. Figure 1 below shows the conceptual frame work for this study;

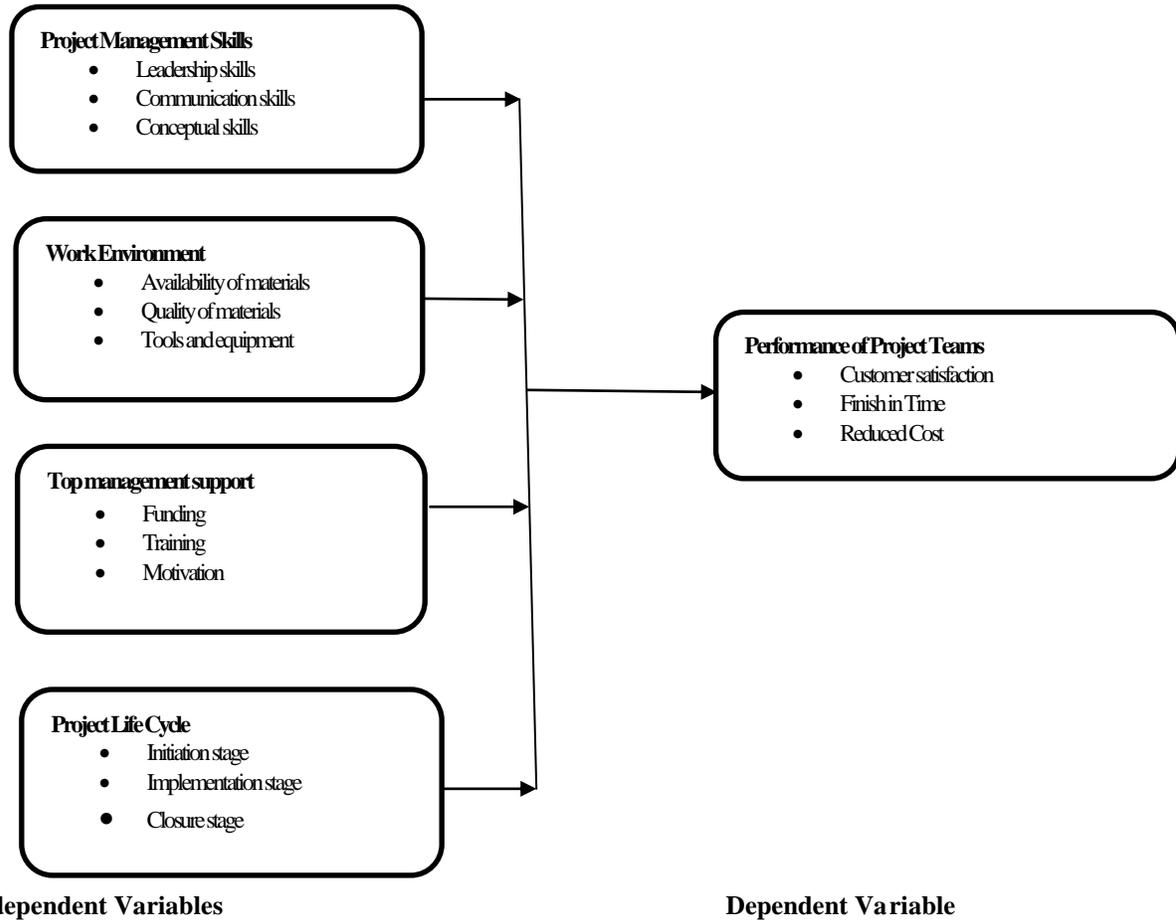


Figure 1: Conceptual frame work

RESEARCH METHODOLOGY

Research Design

The research study adopted a descriptive survey design. Creswell, (2003) observes that descriptive research design is used when data is collected to describe persons, organizations, settings or phenomena. Descriptive research design was chosen because it enables the researcher to generalize the findings to a larger population. 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.

Target Population

Creswell (2011) defines population as a group of people from which a sample can be drawn for the purposes of research. According to Mugenda and Mugenda, (2008) population is an entire group of individual or objects having common observable characteristics. A population can further be defined as the total collection of elements about which the researcher wishes to make some inferences (Cooper & Schindler, 2005). Data available from the Kenya Power (2016) records reveals there were 150 Infrastructure development division projects being implemented in different parts of Nairobi County. This is as illustrated in Table 1.

Division	Projects	Percentage
Nairobi West	25	16.67%
Nairobi South	55	36.67%
Nairobi North	40	26.67%
Thika	30	20.00%
Total	150	100%

Sample and Sampling Technique

Sampling procedure is a technique the researcher uses to gather people, places or things to study (Mugenda & Mugenda, 2008). In this study it refers to the procedure the researcher used to select the final sample to study. Because of the size of the target population the study used census sampling method because it's attractive for small a population that is less than 200 or less (Brymann & Cramer, 2011). The unit of analysis was the Kenya power project in Nairobi County. The study used a census since the population of 150 was small and the study aimed to reach all the project managers as they were the decision makers in these projects and are actively involved in their day to day operations in regard to management and are information rich for the purpose of this study and therefore targeted as respondents for the study.

Data Collection Instruments

Data collection refers to the means by which information is obtained from the selected subjects of an investigation (Creswell, 2011). This study used primary data. Primary data according to Borden and Abbott (2011) is the data collected a fresh for the first time while secondary data is that data that has already been collected and passed through statistical process. Structured questionnaires were used in this study to collect data. Questionnaires are the most commonly used methods when respondents can be reached and are willing to co-operate. These methods can reach a large number of subjects who are able to read and write independently.

Data Collection Procedure

The data collection was carried by use of the questionnaires. The researcher obtained an introductory letter from the University department of EPD of JKUAT which was issued to Kenya Power infrastructure development division to permit data collection from the project managers within the division. Two research assistants were recruited to assist in data collection. The study administered questionnaires containing closed and open ended questions structured on the basis of the research objectives. Each respondent received the same set of questions in exactly the same way. The questionnaires were attached to a cover letter from the researcher explaining the purpose of the study and the questionnaire. The researcher and the assistants dropped the questionnaires and later collected them upon filling by the respondents. This method created provision for personal contacts between the study and the interviewees. Library and desk research was also carried out by scrutinizing reports, guides and documentation which were availed by project staff. Out of the 150 questionnaires administered, 102 questionnaires were fully completed and returned making a response percent of 68 %.

Pilot Test

According to Borden & Abbott, (2011) pilot study is as a small-scale version of the study used to establish procedures, materials and parameters to be used in the full study. According to Cooper and Schindler (2010), pilot test is conducted to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample. Pilot study is an activity that assists the researcher in determining if there are flaws, limitations, or other weaknesses within the interview design and allows him or her to make the necessary revisions prior to the implementation of the study (Robinson, 2010). A pilot study was undertaken on 15 respondents to test the reliability and validity of the questionnaire. The requirement is that 10% of the target population should constitute the pilot test (Creswell, 2011).

Validity of Research Instruments

Validity is ensuring that a test measures what it is supposed to measure (Burke, 2013). The results of their responses was analysed as the percentage of representation using the Content Validity Index. The content validity formula by Amin (2005) was adopted the study. The formula is; Content Validity Index = (No. of judges declaring item valid) / (Total no. of items). It is recommended a CVI of about 0.78 or higher on three or more experts could be considered evidence of good content validity (Amin, 2005). The study adopted a CVI of 0.78

Reliability of Research Instruments

Reliability is the extents to which a research instrument yields findings that are consistent each time it is administered to same subjects (Mugenda & Mugenda, 2008).The reliability of the questionnaire was measured statistically by measuring internal consistency .The study used the most common internal consistency measure known as Cronbach's alpha (α).The Alpha ranges between 0 and 1 with the reliability increasing with increase in value. According to (Robinson, 20010) coefficient of 0.6-0.7 is a commonly accepted rule of that would indicate acceptable reliability and 0.8 or higher would indicate good reliability.In this study all the alpha values were above the minimum; Project management skills (.883) Top management support (.898) Work Environment (.779) Project life cycle (.756)

Data Analysis and Presentation

Data collected was analyzed using quantitative methods with the help of (SPSS) version 22. Data processing was carried out through editing, coding and classification. Quantitative data was analyzed which generated both descriptive and inferential statistics such as frequencies, percentages, mean and regression where applicable. Descriptive statistics such as measures of central tendency and dispersion along with percentages were used to organize and summarize numerical data whose results were presented in tables, bar graphs for easy interpretation of

$$s = \sqrt{\frac{\sum(X - \bar{X})^2}{n - 1}}$$

the findings. The standard deviation formula was as follows:-

Where:- S = sample standard deviation; \sum = sum of...; \bar{X} = sample mean; n = number of scores in sample. The study further adopted multiple regression analysis model at 5% level of significance to study the strength and direction of the relationship between the independent variables and the dependent variable. ANOVAs (F-test) at 5% level of significance were used to determine the goodness of the fit produced. Bivariate regression models were adopted fitted to establish the strength and direction of the relationship between the independent variables and the dependent variable (Performance of project team).

Pearson correlation was used to measure the degree of association between variables under consideration that is independent variables and the dependent variable. Pearson correlation coefficients range from -1 to +1. Negative values indicates negative correlation and positive values indicates positive correlation where Pearson coefficient <0.3 indicates weak correlation, Pearson coefficient >0.3<0.5 indicates moderate correlation and Pearson coefficient >0.5 indicates strong correlation. The project team performance in state corporations was regressed against four independent variables. A multiple regression model that was then fitted to determine the combined effect that the independent variables to have on the dependent variable when acting jointly was expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon,$$

Where;

Y= Project Team Performance in State Corporations;

β_0 = constant (coefficient of intercept),

X_1 = Project Management Skills;

X_2 = Project Life Cycle;

X_3 = Top Management Support;

X_4 = Work Environment;

ϵ = Error Term;

$\beta_1 \dots \beta_4$ = Regression coefficient of four variables.

RESULTS AND DISCUSSION

Project Management Skills

The study sought to establish the extent to which respondents agreed with the statements relating to whether project management skills influences performance of project teams in state corporations. The results were presented in mean and standard deviation as illustrated in Table 2.From the results, majority of the respondents indicated to a small extent that the projects are complex and require project management skills as shown by a mean of 2.10, management of the projects meet the needs of the stakeholders as shown by a mean of 2.01; managers of projects are managing resources properly as shown by a mean of 2.45; to a moderate extent leadership and management skills of manager is good as shown by a mean of 3.01 and Project managers have knowledge of the technology as shown by a mean of 3.35; to a great extent Project stakeholders are satisfied with the management of the project as shown by a mean of 3.99; Project manager has sufficient experience in management of project as shown by a mean of 4.01; the employee feel that the balance between their work demands and non work activities is currently about right as

shown by a mean of 2.01. This implies that generally the project management skills influenced performance of project team performance in the state corporations The above findings collaborates with literature review by Callahan & Rowings (2006) who observed that a project manager (PM) has to manifest not only project management related skills but also technical and expertise as required by the project (Abdulla & Valentine, 2009). Project managers should have knowledge of the technology to management the project to the satisfaction of the stakeholders Project manager skills and sufficient experience in management of project can easily facilitate project team performance (Burke, 2013).

Table 2: Influence of project management skills on Performance of project team

Statement	VSE	SE	ME	GE	VGE	Mean	Std
Leadership and management skills of manager is good	6.5%	6.5%	8.5%	72.5%	6%	3.01	0.44
Project stakeholders are satisfied with the management of the project	5.5%	11%	6.5%	67.5%	9.5%	3.99	0.65
The manager is competent enough to manage the project	6%	68%	9%	6%	11%	3.10	0.32
Project manager has sufficient experience in management of project	4.5%	8.5%	8.5%	72.5%	6%	4.01	0.44
The projects are complex and require project management skills	72.5%	6.5%	8.5%	6.5%	6%	2.10	0.32
Project managers possess ability for decision making and conflict resolution	5.5%	67.5%	6.5%	11%	9.5%	2.95	0.36
Managers of projects are managing resources properly	6%	67%	9%	7%	11%	2.45	0.44
Management of the projects meet the needs of the stakeholders	6.5%	72.5%	8.5%	6%	6%	2.01	0.54
Project managers have knowledge of the technology	3.5%	8.5%	75.5%	6.5%	6%	3.35	0.44

Top Management Support

The respondents were requested to indicate whether top management support on training influence completion of projects in time in the organization. According to Figure 3, 55% of the respondents stated that it enables adoption and handling technology to the project team, 78% of the respondents stated that it facilitates implementation effectiveness, 65% indicated that influence budgetary allocation for implantation of the technology and 58% posited that it involved and decision making on planning, promotion training and pilot testing of the technology. This implies that top management support on training played a key role on completion of projects in time thus improving performance of project team in the organization. The study findings are in agreement with literature review by Abdulla and Valentine (2009) who states that top management makes decision to on enhancing of the project team performance. Further, the study findings are in agreement with literature review by PMI (2008) viewed project team performance as a complex undertaking and argued that leadership plays a key role in times of change, because in order to succeed a project will need commitment at organizational level. It is the leadership that provides sponsorship; for example, avails finances, appoints a team, and appoints team leaders. Abdulla and Valentine (2009) contend that top leadership also assists in getting user support to enhance project team performance.

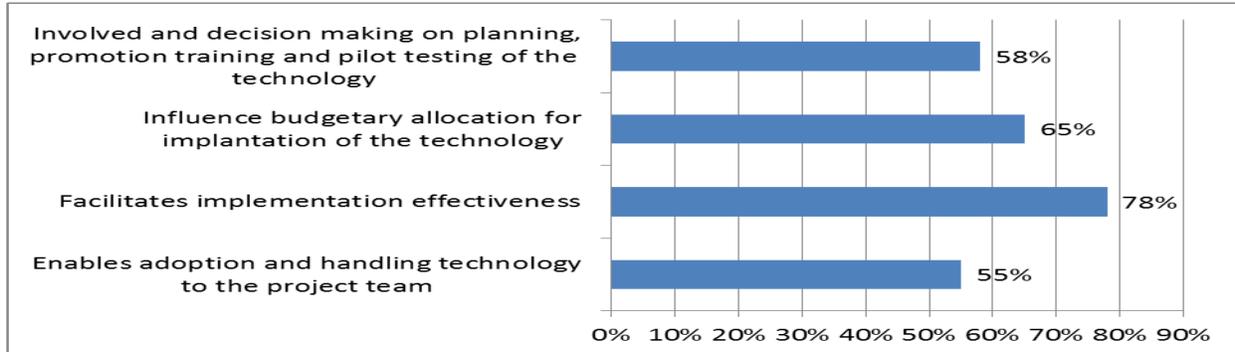


Figure 3: Training on Completion of time

The respondents were requested to indicate whether funding increase the customer satisfaction of the implemented projects in the organization. According to Figure 3, 55% stated that it enables adoption and handling technology to the project team, 65% indicated that it facilitates implementation effectiveness and 68% stated that it influence budgetary allocation for implantation of the technology. This can be deduced that funding increase the customer satisfaction of the implemented projects in the organization. In order to improve performance of project team in the organization, funding is necessary for the project team s activities being carried to perform their duties. The study findings corroborates with the findings of Alum and Lim (2013) stated that organizational capacity which is the wide range of capabilities, knowledge, and resources required by a project that need in order to be perform better. Muller and Juglev (2012) confirms that funding contribute to the health and performance of a project team.

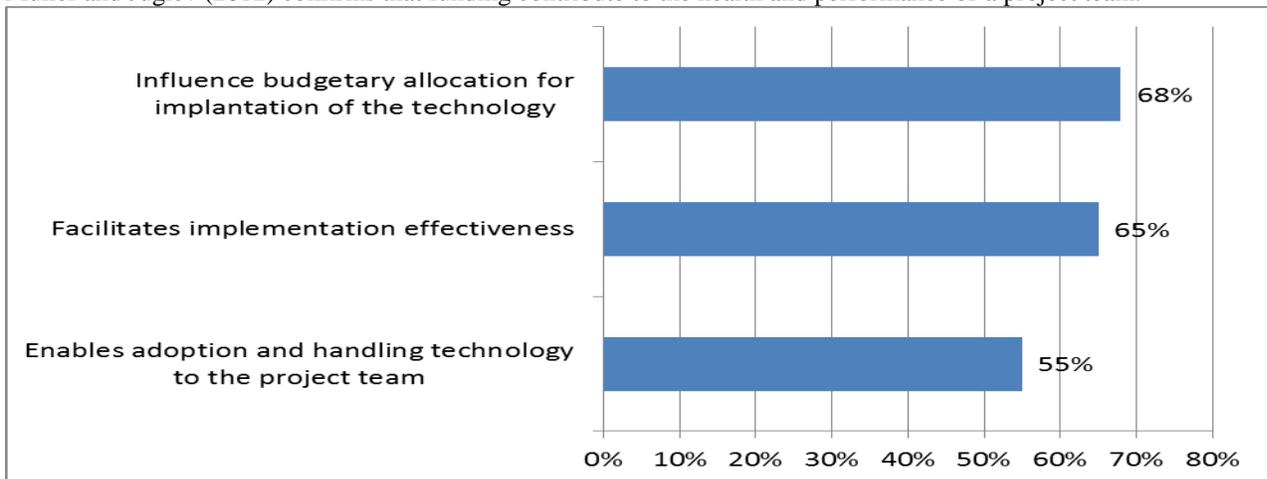


Figure 4: Funding increase the customer satisfaction of the implemented projects

The study sought to establish whether funding increase the completion of projects in time in the organization. As illustrated in Figure 3, 66% of the respondents indicated that through decision making, 72% stated by planning, 64% stated that by promotion of the technology, 56% stated through training of the technology and 82% indicated that through pilot testing of the technology, projects were completed in time. This infers that funding of project activities facilitates the completion of projects in time in the organization The study findings corroborates with the findings of Alum and Lim (2013) stated that organizational capacity which is the wide range of capabilities, knowledge, and resources required by a project that need in order to be perform better. Abdulla and Valentine (2009) confirms that funding contribute to the health and performance of a project team.

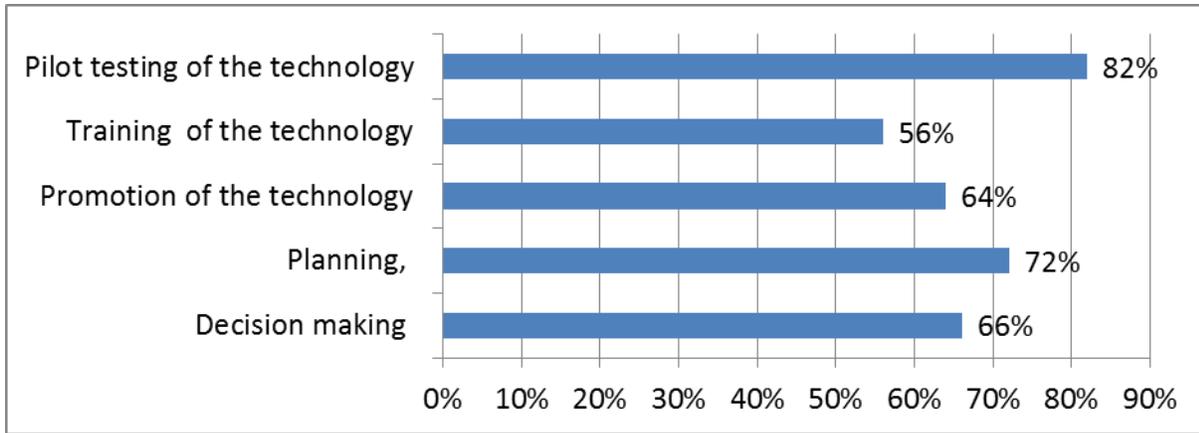


Figure 4: Funding increase the completion of projects in time

The respondents were asked to indicate whether project team motivation was increased by the number of equipment for use during implementation of project activities. As illustrated in Figure 4, 68% stated that it was carried through the funding for equipment, 88% indicated through the procurement of the equipment, 80% stated that it ensured there is availability of equipment and 58% stated through the decision making on planning, promotion training and pilot testing of the technology. This implies that motivation of project team in the projects of the organization was improved through provision of adequate funding of the equipments for use in project activities.

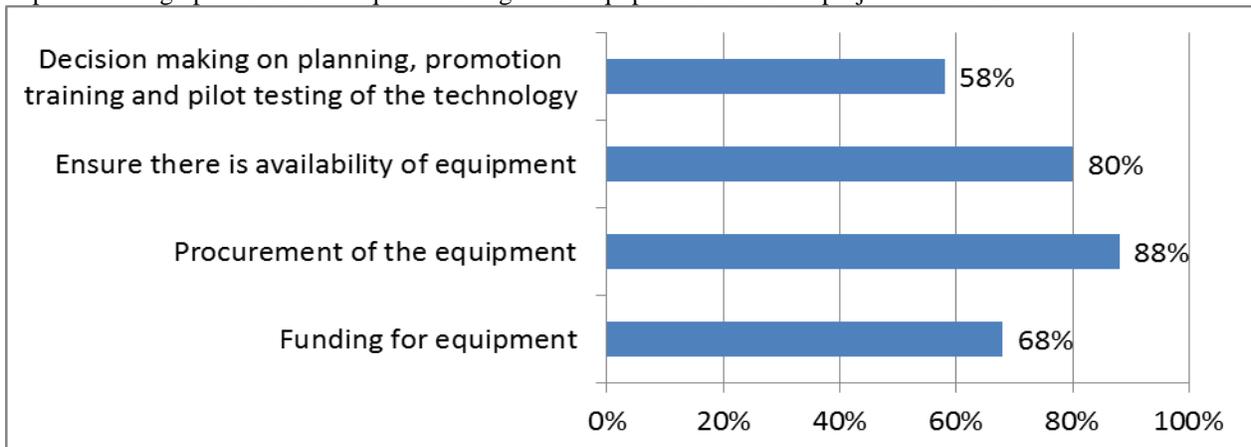


Figure 5: Funding increase the completion of projects in time

The study requested the respondents to indicate whether funding increase number of equipment's for use for the project team to finish the projects in time. According to Figure 4.7, it was established that 52% of the respondents stated that it enables adoption and handling technology to the project team, 70% indicated that it facilitates implementation effectiveness and 72% stated that it influence budgetary allocation for implantation of the technology in the projects. This facilitated completion of projects in time thus improved project team performance of projects being implemented in the organization. The findings collaborates with literature review by Ifinedo (2008) who observed that funding on the tools and equipment for use by the project teams enhance their performance.

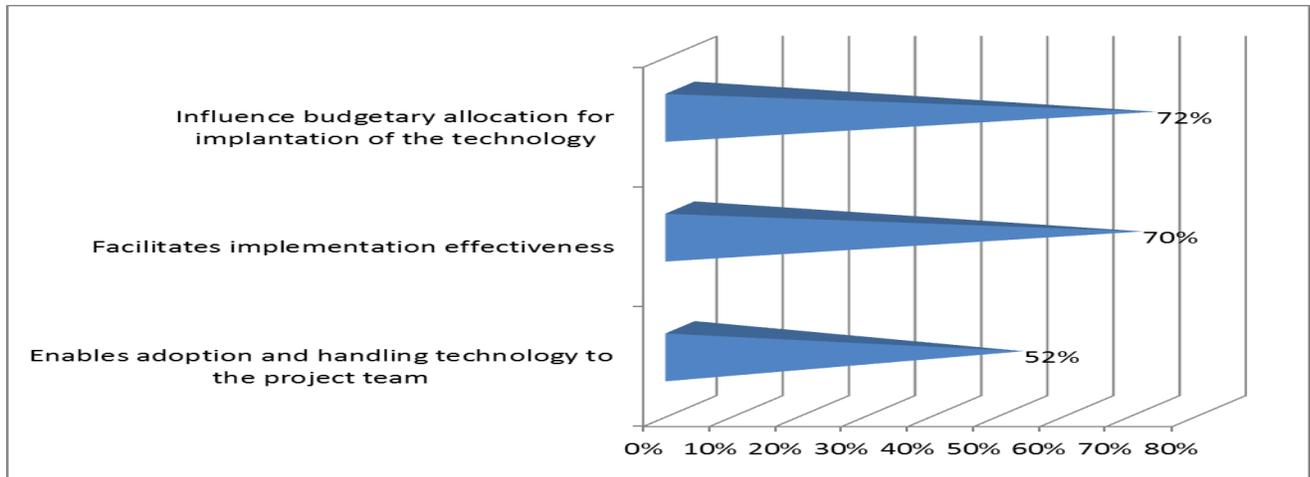


Figure 6: Funding increase number of equipment's

The study findings in Figure 6 established that motivation of the project team led to reduction of costs of the implementation of the projects in the organization. As illustrated in Figure 6, this was achieved through decision making of the technology as shown by 68% of the respondents, 72% stated that by planning of the technology for implementation, 54% of the respondents stated that through the promotion of the technology and 82% stated by offering a training of the technology for implementation by the project team facilitated motivation of the project team to complete projects in time and to satisfaction of the stakeholders as the expected projects were reduced. The study findings corroborates with the findings of Samson and Lema (2011) stated that motivation of project team enhance performance of a project team.

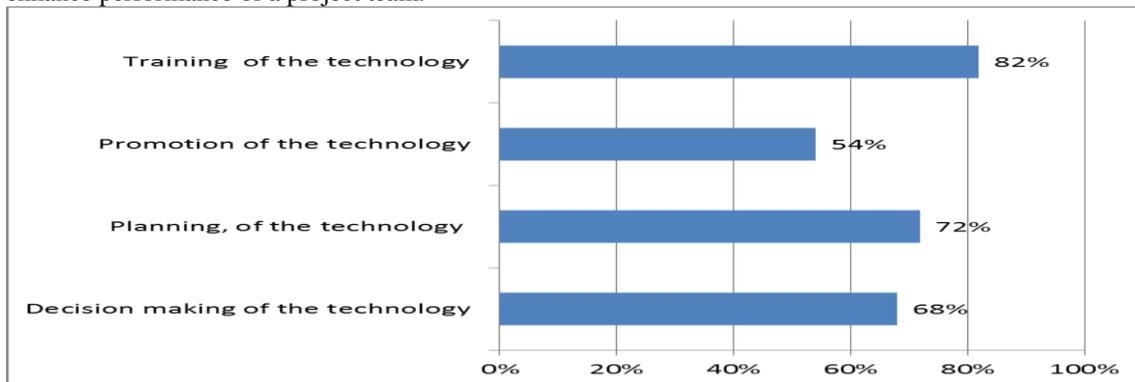


Figure 7: Motivation on the project team

Work Environment

From the study findings as illustrated in Figure 8 on whether availability of materials increases project team performance in the projects in the organization, 68% of the respondents stated it facilitates project team collaboration, interaction and privacy, 64% stated that it improves project team functionality and 75% indicated that motivate and encourage project team to perform their best. This implies that availability of materials increases project team performance in the projects in the organization. The findings of the study are in agreement with Abdulla and Valentine (2009) who states that to achieve high levels of performance of project team; projects must ensure that the physical environment is conducive to organizational needs facilitating interaction and privacy, formality and informality, functionality and cross-disciplinarily. Consequently, the physical environment is a tool that can be leveraged both to improve project results (Callahan & Rowings, 2006) and employee well-being (Huang, Robertson, & Chang, 2004). Ensuring adequate facilities are provided to employees is critical to generating greater performance of project team.

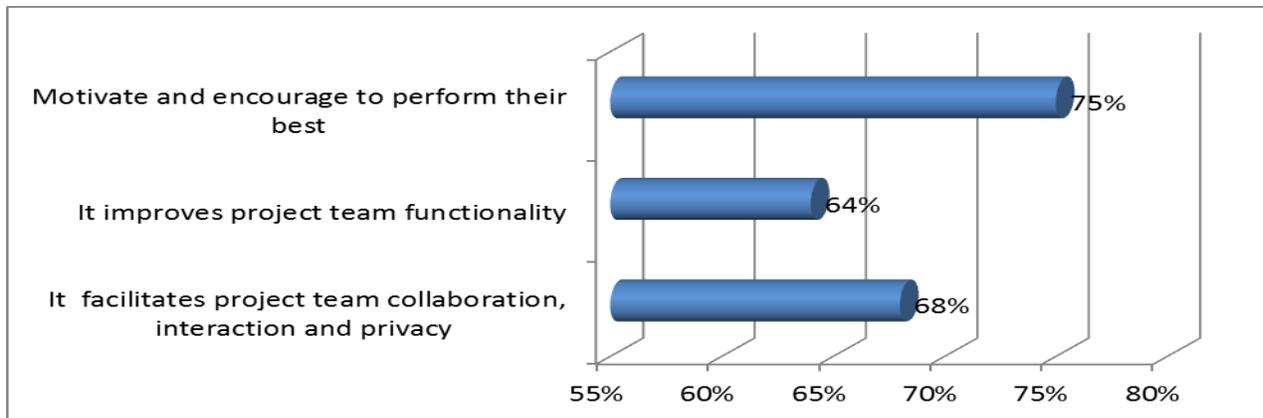


Figure 8: Availability of materials on project team performance

The study sought to establish whether the quality of materials increase project team performance in the projects in the organization. As illustrated in Figure 9, the study established that 66% of the respondents agreed that it facilitates project team collaboration, interaction and privacy, 82% indicated that it improves project team functionality and 54% stated that it enhances positive attitude towards the employee work assigned to do. This implies that quality of materials increase project team performance in the projects in the organization. The findings of this study are in tandem with literature review by Leaman (2011) who argues that those employees who have their performance affected by the workplace environments are those who always complained on the discomfort and dissatisfaction at the workplace. Quality of materials is concerned with making the workplace as efficient, safe and comfortable as possible. This can enhance operator productivity; provide worker safety, physical, mental well-being and job satisfaction to improve performance of project team (Abdulla and Valentine (2009)).

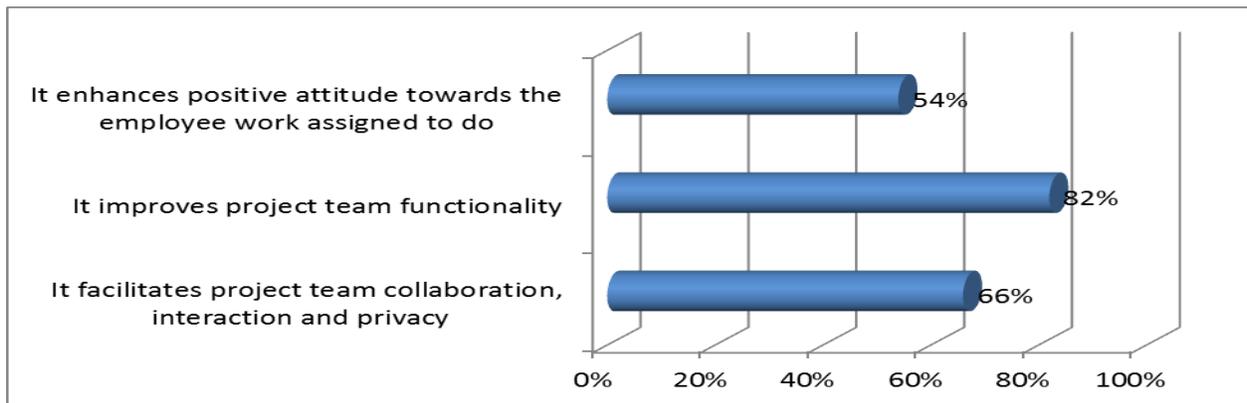


Figure 9: Quality of materials on project team performance

From the study findings as illustrated in Figure 10 on whether availability of materials increases project team performance in projects in the organization, the study The study results shows that 62% of the respondents indicated that it results in low turnover, 76% of the respondents stated that it changed workers to be more hardworking and 82% of the respondents agreed that it motivate and encourage to perform their best during implementation of the projects in the organization. This implies that availability of materials increases project team performance in projects. The findings of the study are in agreement with Cousins (2008) who states that to achieve high levels of performance of project team; projects must ensure that the physical environment is conducive to organizational needs facilitating interaction and privacy, formality and informality, functionality and cross-disciplinarily. Consequently, the physical environment is a tool that can be leveraged both to improve project results (Muller & Jugdev, 2012) and employee well-being (Abdulla and Valentine (2009)). Ensuring adequate facilities are provided to employees is critical to generating greater performance of project team.

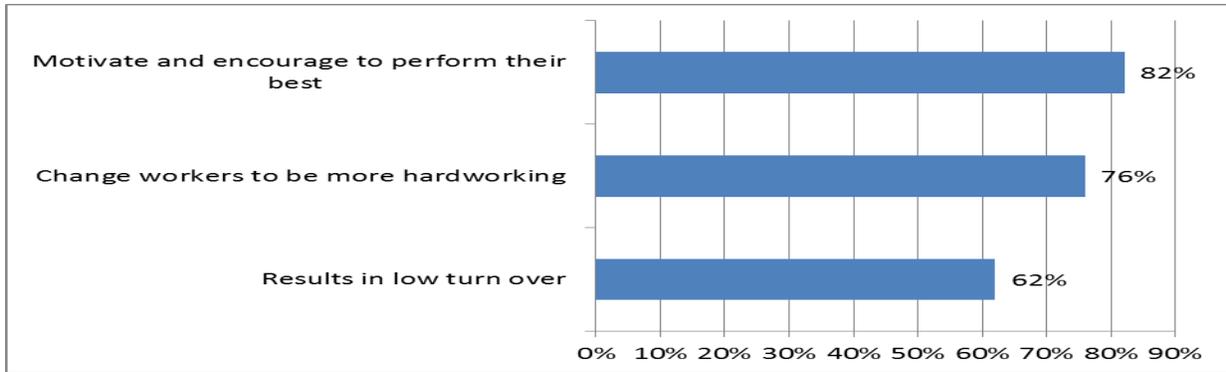


Figure 10: Quality of materials on project team performance

The respondents were requested to indicate whether tools & equipment increases project team performance in the projects in the organization. As illustrated in Figure 11, it was established that 66% of the respondents stated that it enhances positive attitude towards the employee work assigned to do, 65% of the respondents agreed that it changed workers to be more hardworking and 80% of the respondents stated that it motivate and encourage project team to perform their best. This can be deduced that tools & equipment increases project team performance in the projects in the organization. The above findings collaborates with literature review Abdulla and Valentine (2009) who states that it is the quality of the employee’s workplace environment that most impacts on their level of motivation and subsequent performance. How well they engage with the organization, especially with their immediate environment, influences to a great extent their error rate, level of innovation and collaboration with other employees, absenteeism and ultimately, how long they stay in the job. Therefore, most of the project team perform poorly since their tools & equipment are not adequate to use in many projects.

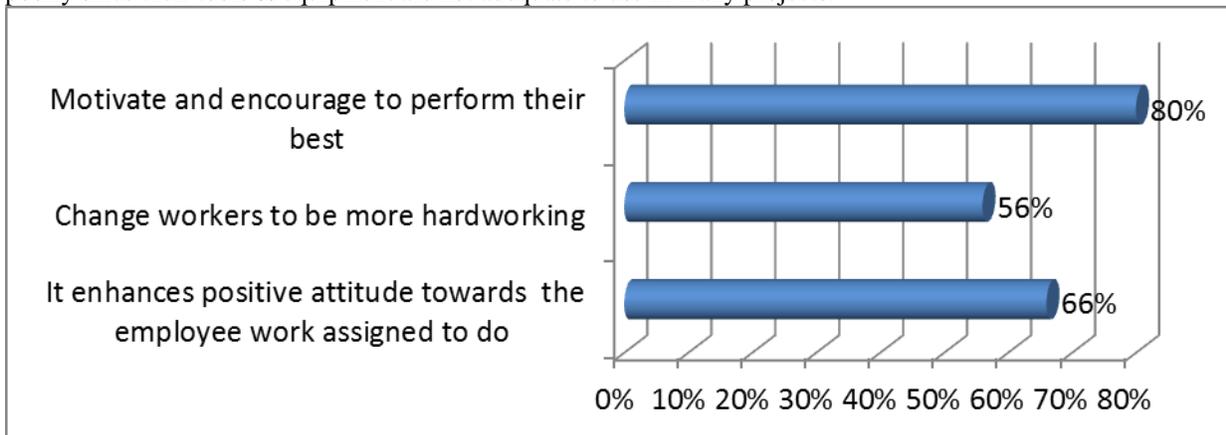


Figure 12: Tools & equipment on project team performance

From the study results as illustrated in Figure 12 on how tools & equipment increases customer satisfaction of the projects in the organization, 64% of the respondents stated that it facilitates staff collaboration, interaction and privacy, 76% of the respondents indicated that it improves employee functionality and 88% of the respondents stated that it motivate and encourage to perform their best. This infers that tools & equipment increases customer satisfaction of the projects in the organization. The findings of the study are in agreement with Kuen , Zailani and Fernando (2011) who states that to achieve high levels of performance of project team; projects must ensure that the physical environment is conducive to organizational needs facilitating interaction and privacy, formality and informality, functionality and cross-disciplinarily. Consequently, the physical environment is a tool that can be leveraged both to improve project results (Mohr, 2006) and employee well-being (Abdulla & Valentine (2009)). Ensuring adequate facilities are provided to employees is critical to generating greater performance of project team.

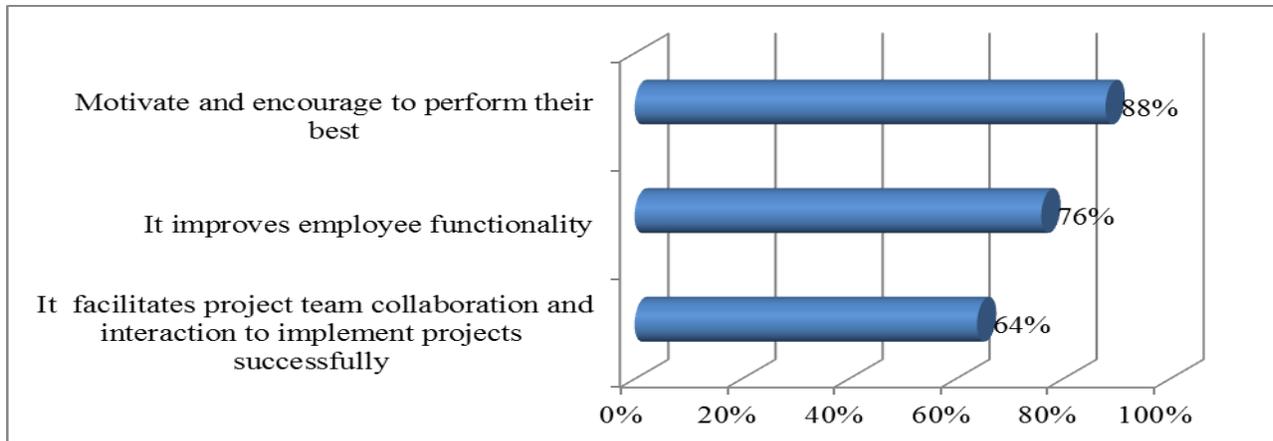


Figure 12: Tools & equipment on project team performance

The respondents were asked to indicate how workplace tools increase projects team performance of the projects in the organization. The study established that 65% of the respondents stated that it enhances employee innovation and creativity, 54% of the respondents stated that it increases conducive working environment and 60% of the respondents stated that it enhances positive attitude towards the employee work assigned to do. This implies that workplace tools increase projects team performance of the projects in the organization. The findings of the study are in agreement with Cousins (2008) who states that to achieve high levels of performance of project team; projects must ensure that the physical environment is conducive to organizational needs facilitating interaction and privacy, formality and informality, functionality and cross-disciplinarily. Consequently, the physical environment is a tool that can be leveraged both to improve project results (Muller & Jugdev, 2012) and employee well-being (Abdulla and Valentine (2009)). Ensuring adequate facilities are provided to employees is critical to generating greater performance of project team.

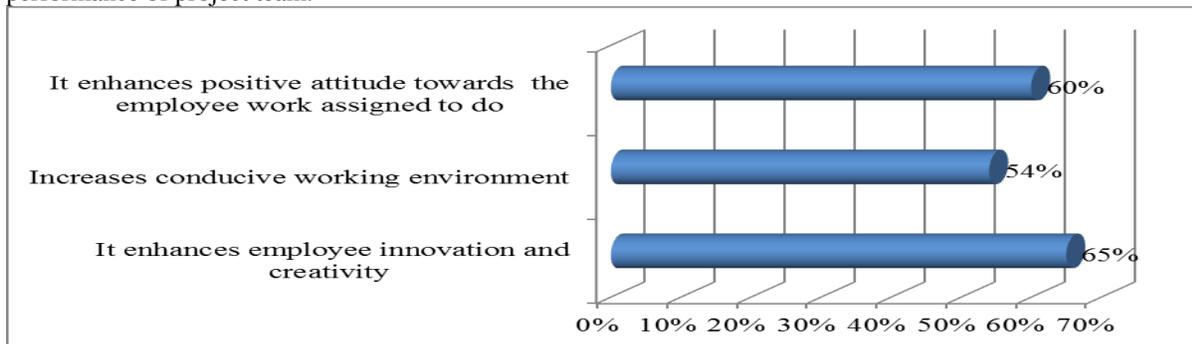


Figure 13: Workplace tools and project team performance

Project Life Cycle

The study sought to establish the extent to which respondents agreed with the statements relating to whether project life cycle influence performance of project teams in state corporations. The results were presented in mean and standard deviation as illustrated in Table 3. From the results, majority of the respondents indicated to a great extent that the success or failure of the project rests squarely on whether adequate and accurate planning has been done prior to start it as shown by a mean of 3.99, If the users have not been included in the planning and implementation process, they will not understand the importance and the role of the project as shown by a mean of 4.10; Proper project planning assessment needs to be undertaken before the implementation as shown by a mean of 4.01; It is vital to have planning and implementation process so as to effectively boost the performance of the project team as shown by a mean of 4.19 and project manager should sufficient experience in management of project during the project closure for the sustainability of the project as shown by a mean of 3.95. This implies that generally the project life cycle influenced performance of project team performance in the state corporations The above findings collaborates with literature review by Kuen, Zailani and Fernando (2011) who observed that a project manager (PM) has to manifest not only project life cycle but also technical and expertise as required by the project. Project managers should have knowledge of the project life cycle to management of the projects to the satisfaction of the stakeholders (Kerzner, 2012).

Table 3: Influence of project management skills on Performance of project team

Statement	VSE	SE	ME	GE	VGE	Mean	Std
Success or failure of the project rests squarely on whether adequate and accurate planning has been done	6.5%	6.5%	8.5%	72.5%	6%	3.99	0.65
If the users have not been included in the planning and implementation process, they will not understand the importance and the role of the project	5.5%	11%	6.5%	67.5%	9.5%	4.10	0.32
Proper project planning assessment needs to be undertaken before the implementation	6%	6%	9%	68%	11%	4.01	0.44
It is vital to have planning and implementation process so as to boost the performance of the project team	6.5%	6.5%	8.5%	72.5%	6%	4.19	0.32
Project manager should have sufficient experience in management of project during the project closure	6.5%	6.5%	8.5%	72.5%	6%	3.95	0.36

Performance of Project Teams

From the study findings as illustrated on Table 4, the study established that majority (43%) of the respondents indicated that the number of customers satisfied with projects were less than 50 in year 2011; 37% indicated the number of customers satisfied with projects were 50 to 100 in year 2012 while 41 % showed that that the number of customers satisfied with projects were > 100 in the year 2014 and 30% of the respondents indicated that number of customers satisfied with projects were more than 100 in year 2015. Generally the finding indicates a low increase of the number customers satisfied with projects across the years where the highest increase in recorded in year 2015. This indicates that project management in these organizations has not been effectively been able to improve on their management skills over the years. The findings of the study collaborates with literature review by Kerzner (2012) established that the current state of projects in developing African countries remain very critical due to the lack of project management practices to enhance their performance.

Table 4: Number of Customers Satisfied with Projects

Customers	2011		2012		2013		2014		2015	
	F	%	F	%	F	%	F	%	F	%
<50	61	60%	39	38%	20	20%	24	23%	52	51%
50 to 100	32	31%	38	37%	42	41%	37	36%	30	29%
>100	20	19%	23	25%	40	39%	38	37%	20	20%

The study findings are as shown in Table 5 established that majority (45%) of the respondents indicated that the number of projects completed in time were less than 5 in year 2011; 40% indicated the number of completed projects were 5 to10 employees in year 2012 while 38 % indicated that number of projects were more than 10 in the year 2013 and 30% of the respondents indicated that number of projects completed within time were more than 10 in the year 2015. Generally the finding indicates a low increase of the number of projects completed in time across the years where the highest increase in recorded in year 2015. This indicates that project management in these organizations has not been effectively been able to improve on their project team performance over the years. The findings of the study collaborates with literature review by Kerzner (2012) established that the current state of projects in developing African countries remain very critical due to the lack of project management practices to enhance their project team performance.

Table 5: Number of Projects Completed in Time

Projects	2011		2012		2013		2014		2015	
	F	%	F	%	F	%	F	%	F	%
<5	45	44%	44	43%	37	36%	56	55%	34	33%
5 to 10	27	26%	16	16%	29	28%	42	41%	25	24%
>10	30	30%	42	41%	36	36%	4	9%	43	43%

Respondents were kindly requested to indicate amount of savings made from the projects for the last five years. The study findings as shown in Table 6 illustrates that majority (42%) of the respondents indicated that they saved less than Ksh. 0.5M in year 2011; 20% respondents indicated that they saved less than Ksh. 0.5M to Ksh. 1.0M in year 2012 while 41 % shows respondents indicated that they saved less than Ksh. 0.5M in year 2011 in year 2013 and 40% of the respondents indicated saved less than Ksh. 0.5M in year 2011 of 50% in year 2015. Generally the finding indicates low cost reduction across the years. This indicates that project management team in the projects in the organization has not been effectively been able to improve on their performance over the years. The findings of the study collaborates with literature review by Muller and Jugdev (2012) established that the current state of projects in developing African countries remain very critical due to the lack of project management practices to enhance their performance especially in cost reduction in the projects..

Table 6: Reduced Cost

	2011		2012		2013		2014		2015	
	F	%	F	%	F	%	F	%	F	%
<0.5M	17	24%	24	34%	26	37%	40	57%	24	34%
0.5 to 1.0M	18	26%	12	16%	14	19%	30	43%	45	64%
>1.0M	20	28%	24	34%	26	37%	23	33%	31	44%

Inferential Statistics

Correlation Analysis Model

Table 7. Correlation Coefficients

		Performance of project teams	Project Management skills	Top management Support	Work Environment	Project Life Cycle
Performance of project teams	R	1.000				
	Sig. (2-tailed)	.				
	N					
Project Management skills	R	.882	1.000			
	Sig. (2-tailed)	.001				
	N	102				
Top management Support	R	.800	.876	1.000		
	Sig. (2-tailed)	.006	.05.			
	N	102	102			
Work Environment	R	.777	.142	.765	1.000	
	Sig. (2-tailed)	.010	.001	.023		
	N	102	102	102		
Project Life Cycle	R	.687	.054	.065	.987	1.000
	Sig. (2-tailed)	.025	.000	.001	.086	
	N	102	102	102	102	

* Correlation is significant at the 0.05 level (2-tailed)

Pearson correlation was used to measure the degree of association between variables under consideration i.e. independent variables and the dependent variables. Pearson correlation coefficients range from -1 to +1. Negative values indicates negative correlation and positive values indicates positive correlation where Pearson coefficient

<0.3 indicates weak correlation, Pearson coefficient >0.3<0.5 indicates moderate correlation and Pearson coefficient>0.5 indicates strong correlation. The analysis of correlation results in Table 4.10 illustrates that between project management skills and performance of project teams there is a positive coefficient 0.882, with p-value of 0.001. It indicates that the result is significant at $\alpha = 5\%$ and that if the project management skills increase it will have a positive impact on performance of project teams. The correlation results between top management support and performance of project team also indicates the same type of result where the correlation coefficient is 0.800 and a p-value of 0.006 which significant at $\alpha = 5\%$. The results also show that there is a positive association between top management support and performance of project teams where the correlation coefficient is 0.777, with a p-value of 0.010. Further, the result shows that there is a positive association between work environment and performance of project team where the correlation coefficient is 0.687, with a p-value of 0.025. This therefore infers that project management skills contributed most to performance of project teams followed by top management support, then work environment while project life cycle had the least influence on performance of project teams

The correlation matrix implies that the independent variables were major determinants of performance of project teams in state corporation projects as shown by their strong positive relationship with the dependent variable; performance of project teams. In collaboration with these findings, Kuen, Zailani and Fernando (2013) indicated that Project Management skills, work environment and project life cycle have become a universal tool for optimal performance for any organization that seeks professionalism. In addition, Muller and Jugdev (2012) identified professional Project Management skills as the skills and science of planning, designing, and managing activities throughout the project lifecycle processes. Professional project management concept has been found to be in practice before the Second World War. This has led to effective performance of projects. In line with the findings, Herroleon (2005) established that the current state of Project Management skills in project teams on implementation of donor funded projects in developing African countries remain very critical due to the advancement of technology, the increasing complexity of projects and the scarcity of human capital to effectively enhance completion of projects.

Overall Multiple Regression Analysis Model

The study adopted a multiple regression analysis so as to establish the relationship of independent variables and dependent variables. The study applied SPSS version 22 to code, enter and compute the measurements of the multiple regression analysis. According to the model summary Table 8, the coefficient of determination (R^2) is used to measure how far the regression model’s ability to explain the variation of the independent variables. R is the correlation coefficient which shows the relationship between the independent variables and dependent variable. It is notable that there exists strong positive relationship between the independent variables and dependent variable as shown by R value (0.876).The coefficient of determination is between zero and one (Robinson, 2010). The data showed that the high R square is 0.684. It shows that the independent variables in the study were able to explain 68.40% variation in the performance of project teams while the remaining 31.60% is explained by the variables or other aspects outside the model. The standard error is minimal with a value of 0.03 meaning the model used in the study will have minimal effects of errors associated with performance of project teams in the organization.

Table 8: Model Summary (Overall)

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.827	.684	.608	.030

F-Test Results

F-test is done to test the effect of independent variables on the dependent variable simultaneously. According to Brymann and Cramer (2011), F-statistic test basically shows whether all the independent variables included in the model jointly influence the dependent variable. Based on the study results of the ANOVA Test or F-test in Table 9, obtained F-count (calculated) value was 48.3179 greater the F-critical (table) value (6.987) with significance of 0.002. Since the significance level of $0.001 < 0.05$ we conclude that the set of independent variables affect the performance of project teams(Y-dependent variable) and this shows that the overall model was significant.

Table 9: ANOVA

Model	Sum of Squares	D.f	Mean Square	F	Sig.
Regression	13.765	4	3.4412	48.3179	.002 ^a
Residual	6.908	97	.07122		
Total	20.673	101			

NB: F-critical value = 6.987;

Regression Coefficients

The study conducted a multiple regression analysis so as to determine the relationship between the dependent variable and independent variables. With the aid of model $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$; Y = Dependent variable (performance of project teams); α = Constant (The intercept of the model), β = Coefficient of the X variables (independent variables); X_1 = Project management skills; X_2 = Top management support; X_3 = Work Environment; X_4 = Project Life Cycle; ϵ = was the error. From the study findings on the regression equation established, taking all factors into account (independent variables) constant at zero performance of project teams will be 34.879. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in project management skills will lead to a 0.887 increase in performance of project teams; a unit increase in Top management support will lead to a 0.871 increase in performance of project teams, a unit increase in work environment will lead to 0.765 increase in performance of project teams and a unit increase in project life cycle will lead to 0.721 increase in performance of project teams. This infers that project management skills contributed most to performance of project teams in the organization. Based at 5% level of significance, project management skills was found to have a calculated t =6.765 (greater than the tabulated value of t = 1.98) and a significance level of 0.001 thus the value of less than 0.05; Top management support show a calculated t =4.432 (greater than the tabulated value of t = 1.98) and a significance level of 0.002 thus the value of less than 0.05, Work Environment was found to have a calculated t =4.009 (greater than the tabulated value of t = 1.98) and a significance level of 0.004 thus the value of less than 0.05, project life cycle show was found to have a calculated t =3.123 (greater than the tabulated value of t = 1.98) and a significance level of 0.005 thus the value of less than 0.05 hence the most significant factor was project management skills. The coefficients are summarised in Table 10.

Table 10: Coefficient Results

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	β	Std. Error	β		
1 (Constant)	34.879	2.065		2.309	.000
X ₁ -PMS	.887	.585	.602	6.765	.001
X ₂ -TMS	.871	.556	.655	4.432	.002
X ₃ -WE	.765	.487	.505	4.009	.004
X ₄ -PLC	.721	.356	.609	3.123	.005

a. Dependent Variable: Performance of Project Teams

Therefore, the general form of the equation was to predict Performance of project teams from X_1 = Project management skills; X_2 = Top management support; X_3 = Work Environment; X_4 = Project life cycle is: $(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon)$ becomes: $Y = 34.879 + 0.887X_1 + 0.871X_2 + 0.765X_3 + 0.721X_4 + 2.065$. This indicates that Performance of project teams= 34.879 + 0.887*Project management skills + 0.871*Top management support + 0.765*Work Environment+ 0.721* Project Life cycle + 2.065.

CONCLUSIONS

The study established that project management skills influence performance of project teams. The projects are complex and require project management skills on managing resources, stakeholders properly. They do not possess leadership and management skills of manager and to a small extent had knowledge of the technology Project manager should have sufficient experience in management of project to boost performance of project teams

From the study results top management support on training influence completion of projects in time in the organization. It was established that it enables adoption and handling technology to the project team, it facilitates implementation effectiveness, influence budgetary allocation for implantation of the technology and that it involved and decision making on planning, promotion training and pilot testing of the technology. The study found out that the work environment of the project teams affected their performance. The availability of materials increases project team performance in the organization as it facilitates project team collaboration, interaction and privacy, it improves project team functionality and motivate and encourage to perform their best

Finally, the study established that to a great extent that the success or failure of the project rests squarely on whether adequate and accurate planning has been done prior to start it. The users have not been included in the planning and implementation process, they will not understand the importance and the role of the project.

RECOMMENDATIONS

The study recommends that there is need for the project managers to have project management skills to enhance performance of project teams. Since the projects being implemented by the organization are complex and require project management skills on managing resources and stakeholders properly, it will enable them to possess

leadership and management skills and knowledge of the technology to improve performance of project teams. There is need for the top management support especially on training to the project teams to complete projects in time. The top management support was insufficient as required to improve performance of project team in the organization. It was established lack of decision making, planning, promotion of the technology, training of the technology and through pilot testing of the technology; most of projects were not completed in time. The work environment of the project teams need to be conducive for them to improve their performance. There is need to provide enough working tools and materials which to enhance project team functionality and motivation to work. The quality of materials enhances positive attitude towards the employee work assigned to do. Lack of materials affected team performance as it led to turnover, enhance project team innovation and creativity, improve attitude towards the project team work assigned to do. There is need to proper improvement on project life cycle management in the projects being implemented by the project team in the organization. The success or failure of the project rests squarely on whether adequate and accurate planning has been done prior to start it. The users need to be included in the planning and implementation process to understand the importance and the role of the project. The proper project planning assessment needs to be undertaken before the implementation to boost the performance of the project team.

REFERENCES

- Abdulla and Valentine (2009). Cooperate governance and stakeholders' interest. *Journal of Construction Engineering and Management*, 111(4), 426-439.
- Adams, S. (1963). Equity theory, selected readings. Harmondsworth: Penguin. *Journal of Construction Engineering and Management*, 112(1), 90-103
- Alarcon, L. F Borchering, J. D., and. (2013). *Quantitative effects on construction Productivity*. The Construction Lawyer, American Bar Association, 11(1), 35-48.
- Alum, J., and Lim, E. C. (2013). Construction productivity, Issues encountered by contractor In Singapore. *International Journal of Project Management*, 13(1), 51-58.
- Amin, M. A., Khaled, K. F., & Fadl-Allah, S. A. (2010). *Testing validity of the Tafel extrapolation method for monitoring corrosion of cold rolled steel in HCl solutions—experimental and theoretical studies*. Corrosion Science, 52(1), 140-151.
- Atrill, P. (2006). *Financial Management for Decision Makers*, (4th ed.). London: Prentice Hall.
- Babbie, E. (2009). *Survey research methods* (2nd ed.). Belmont: Wodsworth.
- Bakar, A.H.A., Razak, A.A., Karim, N.A., Yusof, M.N., & Modifa, I. (2011). The role of project Managers in improving project performance in construction: An Indonesian experience. *International Journal of Academic Research*, 3(6), 164-169.
- Ballesteros-Pérez, P. P., González-Cruz, M. C., & Fernández-Diego, M. M. (2012). Human resource allocation management in multiple projects using sociometric techniques. *International Journal of Project Management*, 30(8), 901-913.
- Barney, J. (1986). *Strategic factor markets: Expectations, luck, and business strategy* Management Science, 32, 1231-1241.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management* 17, 99-120.
- Belassi W. and Tukel O. (2002). A new framework for determining critical Success failure and Factors in Projects. *International Journal for Project Management*.
- Besner, C., & Hobbs, B. (2008). Project management practice, generic or contextual: a reality Check. *Project Management Journal*, 39(1), 16-33.
- Borchering, J. D, and Liou, F.-S. (2006). *Work sampling can predict unit rate productivity*.
- Bordens, K.S., & Abbott, B.B. (2011). *Research design methods: A process approach* (7th ed.).
- Bryman, A., & Cramer. (2011). *Quantitative data analysis with SPSS for windows*, London: Routledge.
- Burke, R. (2013). *Project Management Planning and Control Techniques*. 4th edition, New Delhi India: Pearson Education.
- Callahan, M. T., D. G. Quackenbush, and J. E. Rowings, (2006). *Construction Project scheduling*. USA: McGraw-Hill.
- Creswell, J. W. (2010). *Research design: Quantitative, qualitative, and mixed methods approaches* (2nd Ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2011). *Educational research: Planning, conducting, and evaluating Quantitative and qualitative approaches to research*. New Jersey: Merrill/Pearson Education.
- Conner, K.R. (1991). A historical comparison of resource-based theory and five schools of thought within the industrial organization economics: Do we have a new theory of the firm? *Journal of Management*, 17, 121-154
- Cooper, D. R. and Schinder, P. S. (2011). *Business research methods*. 11th Ed. New York: McGraw-Hill.
- Cooper, D. R. and Schinder, P. S. (2010). *Business research methods*. 11th Ed. New York: McGraw-Hill.
- Cousons, A. (2008). *Project Management Control System*. New York: McGraw-Hill Book Company.
- Davis, J. and Brikke, F. (2005). *Making Your Water Supply Work. Operation and Maintenance of Small Water Supply Systems*. IRC International Water and Sanitation Centre. The Hague, the Netherlands.
- DeCenzo, D., and Holoviak, S. (2012). *Employee Benefits*. Prentice Hall, City, New Jersey, 55-56.
- Dvir, D., Sadeh, A., Malach-Pines, A. (2006). Projects and project managers, the relationship between project managers' personality, project types, and Project success, *Project Management Journal*, 37(5), 36-48.

- Goldratt E. and Cox J., (2002). *The Goal: A process of ongoing improvement*. (Revised Ed.). Croton-on-Hudson. North River Press.
- Goldratt, E. M. (2006). *Critical chain*. The North River Press, Great Barrington.
- Gudecha, M.M (2013). Study of factors affecting labor productivity at a building Construction project in the Use. *Interdisciplinary Journal of Contemporary Research in Business*.
- Greenberg, (1999). *Organizational justice*, The North River Press, Great Barrington. Goldratt E. and Cox J., (2002). *The Goal: A process of ongoing improvement*. (Revised Ed.). Croton-on-Hudson. North River Press.
- Government of Kenya (2012). *Ministry of Planning and National Development: The National census*. Nairobi: Government Printer.
- Government Press (2012). *Ministry of Planning: Millennium Development Goal 7*.
- Guhathakurta, S. and Yates, J. (2013). International labour productivity. *Journal of Construction Engineering*, 35(1), 15-25.
- Hamel, G., & Prahalad, C.K. (1996). *Competing for the Future*. Boston: Harvard Business School Press.
- Hanna, A. S., and Heale, D. G. (2015). Factors affecting construction productivity: Newfoundland versus rest of Canada. *Canadian Journal of Civil Engineering*, 21(4), 663-673.
- Hanna, A. S., Taylor, C. S., and Sullivan, K. T. (2015). Impact of extended overtime on Construction labor productivity. *ASCE Journal of Construction Engineering Management*, 131(6), 734-740.
- Harold, K. (2013). *Project Management: A systems Approach to Planning, Scheduling and Controlling* (8th ed.). Wiley Publishing: NY.
- Herroelen G (2005). The Future of Life Cycle Assessment. *The International Journal of Life Cycle Assessment* 10 (5) 305-308.
- Holoviak, S., Ackermann, E. F. & Williams T. (2012). Understanding the causes and consequences of disruption and delay in complex projects: How system dynamics can help. School of Management, Southampton, University Southampton SO171BJ, UK, www.ce.berkeley.edu/~lbbs_Liu_SystemDynamic_2005.Pdf Accessed 8/7/2011
- Ifinedo, P. (2008). Impacts of business vision, top management support, and external expertise on ERP success. *Business Process Management Journal*, 14(4), 551-568.
- Jankowicz, A.D., (2009). *Business Research Projects*, (4th ed.). Luton.
- Kenya Power & Lighting Company. (2013). Annual report 2012-2013. Retrieved from <http://www.kplc.co.ke/documents/annualrep2013.pdf>.
- Kenya Power & Lighting Company. (2014). Employee survey report. Retrieved from <http://www.kplc.co.ke/documents/employeesurrep2014.pdf>.
- Kerlinger, F. (2014). *Foundations of behavior research* (3rd edition.). New York: Holt.
- Kerzner, H. (2012). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*, New York: Wiley, p.45.
- Kombo P.O. (2006). *Proposal and Writing: An Introduction*. Pauline's Publications Africa.
- Kuen, C.W., Zailani, S., & Fernando, Y. (2011). Critical factors influencing the project success amongst manufacturing companies in Malaysia. *African Journal of Business Management*, 3(1), 16-27.
- Kumar A (2014). *Small Scale Enterprises*, Himalaya Publication, 5th edition New Delhi 233-234.
- Kvale, S. (2011). *Doing interviews*. Thousand Oaks, California: Sage New York, NY: McGraw-Hill.
- Samson, M. and Lema, N.M. (2011). Development of construction contractors' performance Measurement framework. *Paper presented at 1st International Conference of Creating a Sustainable. Dar es Salaam, Tanzania*.
- Leonard, C. A. (2010). *The Effect of Change Orders on Productivity*. The Revay Report, On-line. World Wide Web Revay Rep., 6(2), 1-4.
- Lewis R. Ireland (2006). *Project Management*. McGraw-Hill Professional: UK.
- Mallin, C. (2007). corporate governance. Oxford university press. ERP success. *Business Process Management Journal*, 14(4), 551 – 568.
- Makulsawatudom, A. and Sinthawanarong, K. (2014). Critical factors influencing Construction productivity in Thailand. *The Journal of King Mongkut's Institute of Technology North Bangkok* 14(3), 1-6.
- Makulsawatudom, A., and Emsley, M. (2013). Critical factors influencing Construction productivity in Thailand. *Proceedings of CIB 10th International Symposium on Construction Innovation and Global Competitiveness, Cincinnati, OH*.
- Mboya, P.A. (2013). Influence of adoption of information communication technology on Organization performance: a case study of Kenya Wildlife Service. *International Journal of Social Science and Entrepreneurship*, 1(2).
- Meredith J, R (2006) *Project Management. A Managerial Approach*, John Wiley & Sons, Inc Newyork.
- Mugenda, A.G. (2008). Social Science Research. *Nairobi: Acts Press*.
- Mugenda, A., & Mugenda, O. (2010). *Research methods; quantitative and qualitative approaches*. Africa Center for Technology (ACTS), Nairobi Kenya.
- Mugenda, O. M., & Mugenda, A. G. (1999). *Research methods: qualitative and quantitative Approaches*. Nairobi: Acts Press.
- Muijs, D. (2012). *Doing quantitative research in education with SPSS*. Thousand Oaks, California: Sage.
- Müller, R., & Jugdev, K. (2012). Critical success factors in projects Pinto, Slevin, and Prescott – the elucidation of project success. *International Journal of Managing Projects In Business*, 5(4), 757-775.
- Njiru, E. (2011), the role of State Corporations in a developmental state- the Kenya experience. 30th AAPAM Annual Roundtable Conference, Accra Ghana, October 2008. www.unpal.un.org/introdoc/groups/public.
- Oglesby, C. H., Parker, H. W., and Howell, G. A. (2014). *Productivity Improvement in Construction*. McGraw-Hill, New York.

- Ondari, P.O., & Gekara, J. M. (2013). Factors influencing successful completion of roads projects In Kenya. *International Journal of Social Sciences and Entrepreneurship*, 1(6), 26-48.
- Orodho, A.J. (2010). *Essentials of Educational and Social Science Research methods: Qualitative and Quantitative Approaches*. Nairobi: Acts Press.
- Patton, M.Q. (2012). *Qualitative Research and Evaluation Methods*. Thousand Oaks, California: Sage.
- Pilcher, R. 2012. *Principles of Construction Management*. 3rd ed. New York: McGraw-Hill.
- Polat, G., and Arditi, P. (2011). *The JIT Management System in developing countries*. *Construction Management and Economics*, 23(7), 697-712.
- Prahalad, C.K., & Hamel, G. (1990). *The Core Competence of the Corporation*. *Harvard Business Review*, 68(3), 79-91.
- Project Management Institute (PMI). (2012). *A guide to the project management body of knowledge (PMBOK® Guide)* (5th Ed.). Newtown Square, PA, USA: Project Management Institute (PMI).
- Project Management Institute (PMI) (2011). *A guide to the project management body of knowledge (PMBOK® Guide)* (4th Ed.). Newtown Square, PA, USA: Project Management Institute (PMI).
- Republic of Kenya, (2013). *National Energy Policy*. Nairobi Kenya: Government Printers.
- Robinson, S. (2010). *Research methodology*. Washington D.C.: National Academies Press. McGraw-Hill.
- Roos, G. and Roos, J. (1997), *Measuring your company's intellectual performance*, *Long Range Planning*, 30(3), 325.
- Rowlinson, M., and Proctor, S. (2014). *Organizational Culture and Business History*. *Organization Studies* 20(3) pp.369-96.
- Samson, M. and Lema, N.M. (2011). Development of construction contractors' performance Measurement framework. *Paper presented at 1st International Conference of Creating a Sustainable. Dar es Salaam, Tanzania*.
- Sanders, N. R. (2013). An empirical study of the impact of e-business technologies on Organizational collaboration and performance. *Journal of Operational Management*, 25(6), 1332-1347.
- Sanders, S. R. and Thomas, H. R. (2013). Factors affecting masonry productivity. *Journal of Construction Engineering Management*, 117(4), 626-644.
- Sirota P. (2006). Political participation of the NGOs in project implementation in Nepal. *International journal of organisations*. 2 April 2003:140-150.
- Thomas, H. R. (2004). Labor productivity and work sampling: The bottom line. *Journal of Construction Engineering and Management*, 117(3), 423-444.
- Thomas, H. R., and Oloufa A. A. (2011). *Labor productivity, disruptions, and the ripple effect*. *Cost Engineering*, 37(12), 49-54. Transportation Research Board, Committee on Management and Productivity, Washington, DC.
- Yang, J., Shen, G.Q., Ho, M., Drew, D.S., & Chan, A.P.C. (2010). Exploring critical success factors for stakeholder management in construction projects. *Journal of Civil Engineering and Management*, 15(4), 337-348.
- Ubani, E.C. (2012). Evaluating the effects of organizational structure on the effective delivery of Civil engineering projects. *Interdisciplinary Journal of Contemporary Research in Business*, 4(6), 1284-1296.
- United Nations Committee on Housing, Building and Planning. (2011). *Effect of Repetition on Building Operations and Processes on Site*. United Nations, New York, NY.
- Wamalwa, E., (2010), Factors Influencing Investment Decisions in Parastatals in Kenya, *Unpublished Thesis, Kenyatta University, Kenya*.
- World Bank, (2013). *Implementation Status & Results: Kenya Energy Project*.
- World Bank (2014), *Doing Business Database*.
- Wilcox, S., String fellow, B., Harris, R., and Martin, B. (2013). *Management and Productivity*.
- World Bank, (2013). *Implementation Status & Results: Kenya Energy Project*.
- World Bank (2014), *Doing Business Database*.
- World Bank (2013) Project Performance: project performance issues. Report v.washington.USA.
- Zou, P. X. W., Zhang, G., and Wang, J. (2008). Understanding the key risk in construction Projects in china, *International Journal of Project Management*, 25(6): 601-614.