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Accepted: September 13, 2017

ABSTRACT

The general objective of this study was to establish the critical success factors influencing completion of public construction project in Machakos County. The specific objectives of the study was to; assess the influence of Project communication and top management support on completion of public construction project in Machakos County. The research study adopted a descriptive survey design. The study focused on the critical success factors influencing completion of public construction project in Machakos County. The target populations for this research was 64 consisting of all 14 technical officers (Engineers, Architects, quantity surveyors) based at the county headquarters, 12 project liaison officers representing each of the 12 departments forming Machakos County government and 30 contractors undertaking government-funded buildings construction projects under the County. The research study adopted a descriptive survey design. According to the findings, there was a positive relationship between two factors and completion of public construction project. The positive relationship indicated that there was a correlation between the factors and the completion of public construction project. Based on the findings, Project communication had the highest influence on completion of public construction project, followed by top management support. With regard to Project communication the study concluded that Project managers should focus on making sure that stakeholders are understood in terms of their communications needs. It also involves determining what communication outputs would be exchanged over the course of the project for example status updates, minutes of meetings, reports on deliverables. Project managers should make careful plans to outline who receives which communications, who is responsible to deliver and respond to communication content, and how and when communications will be delivered. This study recommended that all the project technical team should be trained on all factors that influence successful completion of public construction projects. They should be educated on the key metrics of a successful project. Budget, scope and timelines should be deliberately managed so that a quality project can be realized.

Key Words: Project Communication, Top Management Support, Completion of Public Construction Projects

INTRODUCTION

The construction industry is as old as civilization itself; spanning back from ancient days of the great pyramids of Egypt, the grand canal of China to the historical spectacle of Fort Jesus in Kenya's coast. According to Alfred Swenson and Pao-Chi Chang (2014) people have constructed buildings and other structures since pre-history. Some of the buildings and structures

built thousands of years ago are still regarded as remarkable construction landmarks. Alfred Swenson and Pao-Chi (2014) aver that the oldest „construction drawing“ is in the temple of Apollo at Did Main Italy where an unfinished stone wall was etched with the profiles of columns and mouldings, and the wall was never finished so the drawing was not erased: a rare glimpse into the history of working construction drawings. The construction industry is one of the highest consumers of resources in the world and accounts for 7% of the total world employment opportunities. (Bertelsen, 2013). Construction industry is made up of multi-disciplinary participants who include project managers, clients and contractors. These parties together help in transforming various resources into physical constructed facilities which play a critical role in the process of development. Housing building projects represent one of the largest sectors of the construction industry in most developing economies. (Ahadzie, Proverbs and Olomolaiye, 2012).

Construction projects are a one-off, unique, novel and complex in nature (Westerveld, 2013; Ahadzie, 2012). There are many parties involved in completing a construction project making it even more fragmented (Bertelsen, 2013; Ankrah and Langford, 2015). It is due to these complexities that construction industry has a reputation of an

adversarial culture many times leading to failure to achieve completion (Ankrah and Langford, 2005). Furthermore; construction projects heavily involve people and social interaction, and as such, are to be considered „highly transient human systems“ (Bertelsen, 2013).

Machakos County with a population of 1,084,129 million people has seen an un-preceded upsurge in public building construction projects occasioned by the need to create enough office space as well as improvement of existing public buildings infrastructure to cater for the new devolved governments. This has seen the county commit up to 30% of its budget to development, a big percentage of which is going to new buildings. According to the governor of Machakos the county government has an ambitious master-plan that will see the face of the county lifted by the envisioned planned Machakos City that will be provided at attractive lease terms to develop housing to cater for Nairobi city and Konza techno city which is 15 Km from Machakos. Machakos is set to become the dormitory for those two cities and therefore there is certainly a high upsurge in construction activities (Machakos County report, 2013).

However, like any other part of the world Machakos County has had its own share of challenges in meeting the time deadlines of its construction projects. Indeed most of projects currently on-going have not been performing to expectations in terms of timeliness. Indeed most of the projects started in the last two years are way behind the set time schedules they were meant to be completed (Department of public works and Housing, 2014).

Olatunji, (2010) avers that most projects are eventually completed more or less to specification, although they are seldom on time. Cokins, (2016), Chai and Yusuf (2013), while stressing the importance of completing construction projects on

time and within budget argue that “time is of essence” and time is “revenue”. This means that any delay in meeting project completion time undoubtedly interprets to loss of revenue. It is against this background that this study will establish the critical success factors influencing completion of public construction project in Machakos County.

According to a report issued at Boston, Massachusetts in the United States of America by the

chairman of Standish Group about how some projects (CHAOS summary 2009 report), construction projects have been failing to meet the owner’s satisfaction. According to the report, 32% of projects were successful because they were able to be delivered on time, within budget and with expected performance of degree of quality, 44% of projects were delivered late, over budget and with less features and functions and a result were challenged and 24% of projects were also cancelled before they were delivered because they failed.

In Africa construction industry is also faced with the problem of project delays and completion rate. Ogunsemi and Jagboro (2006) noted that one of the most serious problems the Nigeria construction industry is faced with is the project cost overrun, with attendant consequence of completing projects at sums higher than the initial sum. Political insurgency also affects project implementation negatively, as well as the absorptive capacity as is the case of construction projects in some selected districts of Uganda Rosazuwad (2010). Rosazuwad further puts it that closure of special account, stalled procurements and expiry of special commitments, totally disrupted Project activities between March and July 1999.

Critical success factor is an element of organizational activity which is central to its future success. Critical success factors may change over time, and may include items such as product quality, employee attitudes, manufacturing

flexibility, and brand awareness (Wideman, 2012). Critical success factors are normally identified in such areas as production processes, employee and organization skills, functions, techniques, and technologies. The identification and strengthening of such factors may be similar Rockart (2010).

Every construction project is unique and has its own operating environment and sets of technical Requirements (Ahadzie, 2012). Throughout the world, the business environment within which construction organizations operate continues to change rapidly and organizations failing to adapt and respond to the complexity of the new environment tend to experience performance problems hence risk survival problems(Lee, Pena-Mora & Park, 2013).Performance measurement is the heart of ceaseless improvement which all project managers should endeavor to embrace in order to improve their project performance and chances of success.(Luu, Kim, Huynh, 2010).

Public sector construction projects play a key role in the growth of economies in developing countries in terms of their contribution towards Gross Domestic Product (GDP), employment generation and provision of an important market for materials and products produced by other sectors of the economy (ILO, 2011). Khan (2013) argues that there is a clear relationship between a construction activity, economic growth and economic development. A recent survey reports that total world construction spending on infrastructural projects in 2007 was \$4.7 trillion, which rose to \$ 7.2 trillion in 2010 and is expected to grow to\$12 trillion in 2020 (Global construction 2020, 2010). A large proportion of his expenditure is in the public construction sector.

In developing countries, the construction of public sector projects is undertaken by the national governments. In most cases, because of the requirement of huge capital which is lacking in many developing countries, the governments

supplement their development budget with aid from international agencies and other development partners. According to Shen et al. (2010), addressing the infrastructural needs especially in view of the current economic pressures in developing countries require government agencies and construction industry stakeholders to find more efficient and effective ways of delivering the capital projects while controlling the costs. However, project implementing agencies have faced several challenges in search of appropriate mechanism for delivering public sector construction projects.

Machakos County with a population of 1,084,129 million people has seen an un-preceded upsurge in public building construction projects occasioned by the need to create enough office space as well as improvement of existing public buildings infrastructure to cater for the new devolved governments. This has seen the country commit up to 30% of its budget to development, a big percentage of which is going to new buildings. According to the governor of Machakos the county government has an ambitious master-plan that will see the face of the county lifted by the envisioned planned Machakos City that will be provided at attractive lease terms to develop housing to cater for Nairobi city and Konza techno city which is 15 Km from Machakos. Machakos is set to become the dormitory for those two cities and therefore there is certainly a high upsurge in buildings construction activities (Machakos County report, 2013).

Statement of the Problem

The main reasons and causes of project failure are embodied in four key dimensions of the task, namely time, cost, quality and content. The end users and stakeholders of a project also play a fundamentally important role towards success or failure (Khatak, 2012). Lock (2014), asserts that consequences of failure of projects can be multi-dimensional, having far reaching effects on

individuals, communities and organizations time and cost overruns are common features of failure of projects, resulting in delay of service or product delivery. Kappelman, (2015) says that the high rate of failed/incomplete or abandoned projects negatively impacts county government performance, costing tax payer billions of money in losses. Completion of projects is a crucial element of successful management of construction project (Tang and Andrew, 2009). Construction companies would need to consistently provide high quality products and create added value to appeal to their customers and clients. Within Kenya, the construction sectors accounts for 5.8% of gross domestic product (GDP), it employs around 3.2% of the total workforce, therefore making it a very important sector for the economy (RoK, 2013). Therefore, the construction industry is the backbone of the economy for any country and it's vital to the national infrastructure (RoK, 2013).

Projects are based on three pertinent pillars, that is, cost, time, specifications/scope and also satisfaction. This has to do with management and the environment within which projects" delivery teams operate including building projects. In order for one to maximize returns, the project has to be delivered within the parameters of time, cost and specifications Waihenya (2011). Construction of public construction project is one of the public services where governments channel huge amounts of taxpayers" money with the aim of enhancing developing through improvement of building infrastructure. In Kenya a constitutional right is granted in the bill of rights chapter (GOK 2010) for citizens to enjoy efficient public services in all sectors. However this has not always been the case in the construction sector. Indeed service delivery in this sector has remained wanting with numerous cases of delayed or, in extreme cases, stalled projects spread throughout the Country. Machakos County has not been an exception and indeed

reports indicate that more than 50% of all public construction projects started in the County in the last two years have gone beyond the stipulated completion time (Department of public works-Machakos County, 2014). Although the government has been making efforts to address the issue by issuing directives and legislations aimed at improving the situation, indications are quite clear that cases of delays, cost overruns and below quality deliveries are still rampant.

The need for implementation of project to completion arises from the desire for the project to start serving its intended use and thus recouping some of the monetary investment used. In the event that this is not realized, various outcomes come to play. For instance the cost of implementation will escalate and capital will remain tied in such a project until it is completed. Approximately 50% of construction projects experience time overruns (Olatunji, 2010). This study therefore is worthwhile in order to establish the critical success factors influencing completion of public construction project in Machakos County.

Objectives of the Study

The general objective of this study will be to establish the critical success factors influencing completion of public construction project in Machakos County. The specific objectives were:-

- To assess the influence of Project communication on completion of public construction project in Machakos County.
- Determine the influence of top management support on completion of public construction project in Machakos County.

LITERATURE REVIEW

Theoretical Review

Communication theory

Communication is the exchange and flow of information and ideas from one person to another, it involves sender transmitting an idea, information, or feeling to a receiver effective communication occurs only if the receiver understands to exact information or idea that the sender intended to transmit. Communication theory was proposed by S. F. Scudder in the year 1980. This theory entails the sending and receiving orders between individuals and organizations to avoid breakdowns in conversation create commitment and trust through conversation, organize in a way allowing for conversations to take place in their complete form.

Ahimbisibwe, Nangoli and Tusiime (2012) carried out a study on Mediating Effects of Network Degree and Network transitivity on the Relationship between Project Communication Strategies and Perceived Project Success. The results revealed that internal project communication and external project communication effects between project communication strategies and perceived project success were significant. The results further revealed that internal project and external project communication are both positively associated with social network dimensions of network degree and network transitivity and indicated that network degree and network transitivity are both positively related to perceived project success. In addition, the results also imply that efforts to promote effective communications through availing timely information to stakeholders leads to strengthening of the relationships that exist amongst stakeholders.

This theory instigated the first objective which is to assess the influence of Project communication on completion of public construction project in Machakos County.

Resource Based Theory

The core premise of the resource-based view is that organizational resources and capabilities can vary significantly across firms, and that these differences can be stable (Hijzen, Görg & Hine, 2015). If resources and capabilities of a firm are mixed and deployed in a proper way they can create competitive advantage for the firm. Firms with higher competitive advantage tend to create a sense of confidence in stakeholders that their support, whether financial or otherwise, will be valued and put into action. The resource-based view in outsourcing builds from a proposition that an organization that lacks valuable, rare, inimitable and organized resources and capabilities, shall seek for an external provider in order to overcome that weakness (Müller & Jugdev, 2012). Stakeholders will want to be involved in projects that have the resources available well managed. Outsourced resources tend to facilitate the reduction of costs of the entire project. Thus, stakeholders can be convinced that the project managers are working towards the achievement of the project at minimum costs for maximum utility and benefit.

Conceptual Framework

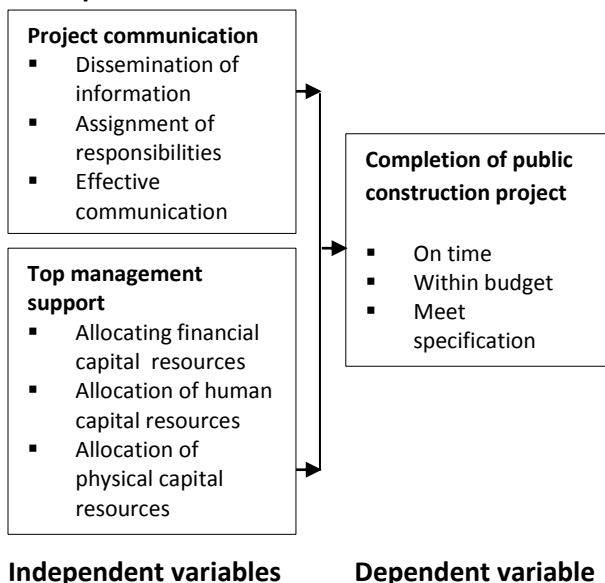


Figure 1: Conceptual Framework

Project Communication

Communication is a process in which information is transmitted from a source to a receiver through various channels (JPIM, 2010). Communication means act of transferring information, exchange of information, message which is either written or verbal, and an idea of conveying thoughts effectively (Kerzner, 2011). A good definition of project communication is "Project communication management includes the process required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information" (PMI, 2013). Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information.

Communication is an important skill for project managers to accomplish effective project management (Analoui, 2013). This skill is vital because part of management is motivating people to perform their assigned duties to the best of their ability (Perret, 2012; Scott, 2011). "Effective communication is the key to success for the individual as well as for the project" (Verma, 2016). By using communication skills, the project manager helps to plan, direct, control and coordinate their operations throughout the project life cycle (Verma, 2016). The effective project communication management can determine the extent of the project's success or failure.

Top Management Support

Critical success process is one that most significantly improves project success. Critical top management support processes that an organization may consider to implement, include develop project

procedures, involve the project manager during initiation stage, support ongoing project management training programs, establish a project management office (PMO), develop a supportive project organizational structure, define clear project success measures and support projects in quality management (Zwikael, 2011). However, these processes are general and hence may not be relevant to the unique software industry.

Top management support is needed throughout the implementation. The project must receive approval from top management (Sumner, 2013) and align with Strategic business goals (Sumner, 2014). This can be achieved by tying management bonuses to project success (Wee, 2013). Top management needs to publicly and explicitly identify the project as a top priority (Wee, 2014). Senior management must be committed with its own involvement and willingness to allocate valuable resources to the implementation effort (Holland et al, 2015). This involves providing the needed people for the implementation and giving appropriate amount of time to get the job done (Roberts and Barrar, 1992).

Completion of Public Construction Project

The common goal of all parties involved in a project should be to deliver the project within its stipulated time frame at all cost so as to meet the initial project objectives without significant deviations. Davison and Mullen (2013) gave the concept of delay as the extension of time beyond planned completion dates traceable to the contractors, while, Aibinu and Jamboree (2012) defined delay as situation when the contractor and the project owner jointly or severally contribute to the non-completion of the project within the original or the stipulated or agreed contractor period. The duration of project is normally specified by the owner and contractors are responsible for ensuring completion within the owner's timeframe.

According to Greer (2014), a project is successful if it satisfies all three legs of the triple constraints, namely, performance (specification), cost and time. However, there are challenges that contribute to poor performance of construction projects. Patroba (2012) highlights some of the challenges as: the weak capacity of the local contractors, poor workmanships and delayed completion of projects.

In general, the construction industry is more challenging than other industries due to: its unique nature; every project is one-of-a-kind; many conflicting parties are involved; projects are constrained by time; money, quality and high risk. A project is said to be successful or performing when it is completed within budget cost, specified quality, stipulated time and delivered safely (Mbamali, Aiyetan and Kehinde, (2015). Poorly performing project exhibits off estimate project cost, late delivery of projects and sometimes, terminations of contract.

Empirical literature review Project Communication

Project communication management ensures timely and appropriate generation, collection, dissemination, storage, and disposition of project information. Open and clear communications are required among planners, implementers, and all levels of the organization for project success. It includes having a communication plan, information distribution path, progress reporting, and information sharing system for management and customers (Kwak & Ibbs, 2002). Project communication management should also include methods and techniques to build trust and relationships among team members, as well as propagate desirable personal behaviors and clear communication rules (Kwak & Ibbs, 2002).

Communication is broadly described in the literature (Dow & Taylor, 2010; Kliem, 2007 and

papers cited therein), mainly due to the great importance that is attributed to this area of project management (Purna Sudhakar, 2012), and because of its impact on the success of the project (Ofori, 2013; Kerzner, 2013), in particular projects (Holzmann & Panizel, 2013) carried out by dispersed teams (Sidawi, 2012; Wagstrom & Herbsleb, 2006; Niinimäki et al., 2012; Han & Jung, 2014). Effective communication within virtual project teams is of paramount importance and a fundamental competency that, if properly executed, connects every member of a project team, so that they can work together to achieve the project's objectives. If communication is not managed effectively and fully understood by Project Managers, project outcomes may be at risk.

According to PMI's Pulse research, 55 percent of Project Managers agree that effective communication with all stakeholders is the most critical success factor in project management (PMI, 2013). Effective project communications ensure that the right information reaches the right person at the right time and in a cost-effective manner. Communication is the key to keeping team members, managers, and stakeholders informed and on track to pursue the project objectives, as well as to identifying issues, risks, misunderstandings, and all other challenges to project completion. project communication is a critical element of team effectiveness, both in traditional and virtual teams (Pitts et al., 2012).

Top management support

Top management support has become a specifically important factor in the construction sector with the introduction of maturity models, such as Capability Maturity Model, Capability Maturity Model Integrated and Organizational Project Management Maturity Model (Paulk et al., 2015; Project Management Institute – PMI, 2013). These models analyze projects as an organizational effort, rather

than a project manager's exercise. An important assumption of these models is that an organization has a direct effect on the way project managers run their projects. One example of evidence to strengthen this assumption is that top management support highly influences the tools project managers decide to use in projects (Besner and Hobbs, 2011).

A critical success process is one that most significantly improves project success. Critical top management support processes that an organization may consider to implement, include develop project procedures, involve the project manager during initiation stage, support ongoing project management training programmes, establish a project management office (PMO), develop a supportive project organizational structure, define clear project success measures and support projects in quality management (Zwikael, 2011).

RESEARCH METHODOLOGY

This research adopted a Descriptive research which included surveys and fact-finding enquiries of different kinds (Kothari, 2007). The research took on a Case study approach; an-in-depth investigation of an individual, group, institution or phenomenon (Mugenda, 2008). This design was been adopted due to the fact that its best suited in answering the research questions. The target populations for this research was 64 respondents consisting of all 14 technical officers (Engineers, Architects, quantity surveyors) based at the county headquarters (Department of Public Works and Housing 2013) , 12 project liaison officers representing each of the 12 departments forming Machakos County government (Machakos County government report, 2014) and 10 contractors undertaking government-funded buildings construction projects under the

County Works Officer as the project manager, as were awarded since the inception of County governments in March 2013. (Department of Public Works and Housing, 2013). The study adopted was a census survey. A quantitative and qualitative technique was used for data collection. The data used both primary and secondary sources. The questionnaires was used and distributed to the respondents and personally was collected by the researcher with the assistance of a research assistant. The qualitative method that was used is the open-ended questions in the questionnaire.

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

The study targeted 64 respondents from which 61 filled in and returned the questionnaires making a response rate of 95.31%. This study sought to find out how the respondents were distributed on genders basis. This was thought to be an important indicator towards the diversity of the respondents. A total of 67 percent of the respondents were male while female accounted for only 33 percent of the respondents. This showed that the public construction project in Machakos County employed both male and female staffs. The findings implied that the views expressed in these findings were gender sensitive and could be taken as representative of the opinions of both genders. The study sought to investigate the years of experience in the public construction project respondents had worked in their respective institutions. The study found out that most of the respondents (39%) had been in the public construction project for a period of 6 to 10 years, 28% had worked for a period of 1 to 5 years and only 22% had been in their respective institution for 10 to 15 years while 11% had been in the public construction project for a period above 15 years. This showed that majority respondents had enough work experience in the public

construction project institutions. The study found out that most of the respondents (39%) had been in the public construction project for a period of 6 to 10 years, 28% had worked for a period of 1 to 5 years and only 22% had been in their respective institution for 10 to 15 years while 11% had been in the public construction project for a period above 15 years. This showed that majority respondents had enough work experience in the public construction project institutions.

The respondents were required to indicate their age where the study findings indicated that majority (44%) indicated that their age bracket was between 41 and 50 years. Analysis of findings also indicated that 28% of the respondents were between 30 and 40 years of age. The findings further indicated that 19% were above 51 years of age while 9% were 21 and 30 years of age. The study sought to find out the respondents level of education in order to ascertain whether academic and professional qualification influenced completion of public construction project in Machakos County. The study also revealed that (2.3%) of the respondents were in top management, (25%) of the respondents were in middle management, while (72.7%) of the respondents were in support staff. This result illustrated that power project owners were generally active between the ages of 26- 35. This result was also consistent with the National Small Business Act of South Africa of 1996 as amended in 2003, which expects businesses to be managed by the top level management, Middle level management (Section Heads) and Lower level management (Supervisor)

Project Communication

The respondents were requested to indicate the extent to which the following statements of Project Communication had an influence on completion of public construction project in Machakos County.

Table 1: Statement of Project Communication

Statements	Mean	Std. Deviation
Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information	3.8700	.88129
Communication is an important skill for project managers to accomplish effective project management	3.8400	.85049
Effective communication is the key to success for the individual as well as for the project	3.5300	1.22882
By using communication skills, the project manager helps to plan, direct, control and coordinate their operations throughout the project life cycle	3.5200	1.00499
The effective project communication management can determine the extent of the project's success or failure	3.8800	.78102

From the findings on the statements of Project Communication that influence the completion of public construction project in Machakos County, the respondents indicated that the effective project communication management can determine the extent of the project's success or failure to a great extent as shown by a mean score of 3.8800.

Further, the respondents indicated Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information as shown by a mean score of 3.8700. Additionally, the respondents indicated that By using communication skills, the project manager helps to plan, direct, control and coordinate their operations throughout the project life cycle to a great extent as shown by a mean score of 3.5200, the respondents also indicated with the mean score of 3.8400 that the Communication is an important

skill for project managers to accomplish effective project management to a great extent.

Finally it was also established that effective communication is the key to success for the individual as well as for the project as it is indicated with the mean score of 3.5300. This is in line with Kwak and Ibbs, (2002) who found out that Project communication management should also include methods and techniques to build trust and relationships among team members, as well as propagate desirable personal behaviours and clear communication rules.

Top Management Support

The respondents were further asked to indicate the extent to which the following statements of top management support influence on the completion of public construction project in Machakos County.

Table 2: Top management support

Statements on top management support	Mean	Std. Deviation
Top management support is needed throughout the implementation.	3.9600	1.27410

The project must receive approval from top management	3.8000	1.11803
Senior management must be committed with its own involvement and willingness to allocate valuable resources to the implementation effort to completion of public construction project	4.0800	1.03763
Effective coordination of top management is much required in project activities	3.3333	1.34056
Competence and adequate support from a project consultant is of equal importance for the completion of public construction project	3.9000	1.22474

Completion of Public Construction Project

The study set out to determine the factors that influence completion of public construction project in Machakos County. The following are the findings obtained. The respondents were requested to indicate the extent to which the statements relate to completion of public construction project. The results were as shown in Table 3.

According to the table 3, the respondents agreed that the public construction project meet the set quality (durability, safety) to a very great extent as

shown by a mean score of 4.3600. As well, the respondents agreed that the public construction project is completed within budget to a great extent as shown by a mean score of 4.3200. Lastly, the respondents agreed that the public construction projects were completed on time to a great extent as shown by a mean score of 4.1200. Chai and Yusuf (2013), while stressing the importance of completing construction projects on time and within budget argue that “time is of essence” and time is “revenue”. This means that any delay in meeting project completion time undoubtedly interprets to loss of revenue.

Table 3: Statements regarding the completion of public construction project

	Mean	Std. Deviation
The public construction project are completed on time	4.1200	1.12990
The public construction projects are completed within budget.	4.3200	1.02956
The public construction project meet the set quality(durability, safety)	4.3600	.90738

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

With regard to Project communication the study established that the respondents indicated that the effective project communication management can determine the extent of the project's success or failure to a great extent as shown by a mean score

of 3.8800. Further, the respondents indicated Project Communications Management included the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information as shown by a mean score of 3.8700. Additionally, the respondents indicated that by using communication skills, the project manager helps to plan, direct, control and coordinate their operations throughout the project life cycle to a

great extent as shown by a mean score of 3.5200, the respondents also indicated with the mean score of 3.8400 that the Communication is an important skill for project managers to accomplish effective project management to a great extent. Finally it was also established that effective communication is the key to success for the individual as well as for the project as it is indicated with the mean score of 3.5300.

In regard to top management support, the study established that the respondents indicated that senior management must be committed with its own involvement and willingness to allocate valuable resources to the implementation effort to completion of public construction project to a great extent as shown by a mean score of 4.0800. Additionally, the respondents indicated that the top management support is needed throughout the implementation to a great extent as shown by a mean score of 3.9600.

The study found that the project must receive approval from top management to a great extent as shown by a mean score of 3.8000 each. In addition, the respondents indicated that Effective coordination of top management is much required in project activities to a moderate extent as shown by a mean score of 3.3333. While to a great extent as shown by a mean score of 3.9000 respondents indicated that Competence and adequate support from a project consultant is of equal importance for the completion of public construction project

Completion of Public Construction Project

The study additionally found out that public construction project meet the set quality (durability, safety) to a very great extent as shown by a mean score of 4.3600. As well, the respondents agreed that the public construction project is completed within budget to a great extent as shown

by a mean score of 4.3200. Lastly, the respondents agreed that the public construction projects were completed on time to a great extent as shown by a mean score of 4.1200.

Conclusion

With regard to Project communication the study concludes that Project managers should focus on making sure that stakeholders are understood in terms of their communications needs. It also involves determining what communication outputs will be exchanged over the course of the project for example status updates, minutes of meetings, reports on deliverables. Project managers should make careful plans to outline who receives which communications, who is responsible to deliver and respond to communication content, and how and when communications will be delivered. Communications plans should be executed and monitored over the course of project implementation and throughout until project is completed.

In regard to top management support, the study concludes that the top project managers must always bear in mind that successful project management techniques will contribute to the achievement of projects, but project management will not stop a project from failing to complete. The right project will complete almost without the success of project management, but completion of project management could enhance its completion.

Recommendations

Top managers should hold stakeholder engagement sessions in the lifetime of the project to ensure that every interested party plays their role in ensuring the construction contract does not take longer than intended because of the actions or inactions of any one of the project players. Top management should also ensure Competent and experienced project

managers should be hired to ensure that the right project leadership team is hired to lead a process of construction project implementation. This must also guarantee proper program of works which should be followed by good supervision/inspection to ensure it is followed to the letter and all the amendments done at the right time and in an appropriate way to ensure successful project delivery.

Suggestion for Further Studies

The study recommends that a similar study should also be done on other counties since their operations were different from those studied in this study. Further studies should be done on other countries and cities other than Machakos County to find out whether it will yield the same information.

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