

FACTORS AFFECTING THE COMPLETION OF PUBLIC CONSTRUCTION PROJECTS IN TRANS NZOIA COUNTY, KENYA

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Abstract: Most public construction projects have experienced delays in their completion and it can be argued that if construction projects are not completed within the planned completion time losses are incurred either directly or indirectly. As a county, Trans Nzoia has initiated a number of construction projects but not all projects are completed as planned. Therefore, the purpose of the study was to determine the factors affecting the completion of public construction projects in Trans Nzoia County. Four specific objectives guided the study and these are: To determine the effect of resource allocation on the completion of public construction projects in Trans Nzoia County, To evaluate the effect of project monitoring on the completion of public construction projects in Trans Nzoia County, to examine the effect of knowledge and skills of project manager on the completion of public construction projects in Trans Nzoia County and to evaluate the effect of political factors on the completion of public construction projects in Trans Nzoia County. This study was anchored on; general systems theory, theory of constraints (TOC) and contingency theory. The study adopted a descriptive survey research design. The total population for the study was 724 respondents and samples of 144 respondents were selected. Purposive sampling was used to select the sample size which is a deliberate way of selecting the sample size. A pilot study was conducted where 20 questionnaires were administered to test validity and reliability prior to the actual data collection. 144 questionnaires were administered and 137 were filled and returned. After data collection, analysis and processing followed which involved cleaning, sorting and coding of raw data collected from the field and the Statistical Package for Social Sciences (SPSS) software version 23 was used in data analysis. Correlation coefficient, regression results and the ANOVA test were used for establishing the type and nature of relationship that existed among the variables. The findings showed that adequate allocation of resources which includes funds and human resources influenced completion of projects. This was evident from the majority respondents who agreed that adequate allocation of funds indeed affects the completion of projects. Knowledge and skills of the project major played a role as pertains to project completion and political interference influences project completion; this is based on the large majority of respondents who agreed that political leadership and political conflicts influence the completion of public construction projects. The study was faced with a limitation of respondents not free to engage the researcher due to the ongoing fight against corruption in the country and given some of the targeted respondents was found at the construction sites data collection was a challenge. From the findings, it is therefore recommended that adequate resources should be channelled to the projects, the project managers should conduct regular monitoring of the project through close supervision and keeping track of the progress. Well trained, experienced and skilled persons should be employed in the projects and politics should be avoided in projects as they contribute to delays.

Keywords: Resource allocation, project monitoring, knowledge & skills, political factors and completion of public project.

I. INTRODUCTION

Background of the study

A project is a temporary endeavor undertaken to create a unique product, service or result (PMI, 2008). One of the features of a project is that it is temporary; this fundamentally means that every project has a sure beginning and end. The end of a project is reached when all its objectives are achieved or when it is clear that the objectives can't be met which leads to its termination (PMI, 2008). Every project that has been initiated gets to an end at some point whether its objectives have been accomplished or not. Project completion (completing the contract) can either follow successful completion of the natural sequence of project activities directed toward meeting the specified objectives, or a sudden decision to cease the project effort in mid-course (Robert and James, 2013). A project plan guides the project team on what to do in terms of the time frame and the activities to be performed; when the project plan is firmly followed by the project team, there is a very high likelihood that the project will be completed within the stipulated time but on the contrary, if it is not followed strictly a project is likely to delay thereby prolonging beyond its planned completion time.

According to Sanders and Eagles (2017), delay is an event that causes extended time to complete all or part of a project; it is the postponement of time from the original estimated completion time which might be caused by the contractor, owner or consultant as well as external factors, Koushki and Kartam (2004). On the other hand, (Pickavance, 2005) defines delay as something happening at a later time than planned, expected and specified in a contract or beyond the date agreed upon for delivery of a project. Generally, delay is a common phenomenon in every construction project but its degree differs significantly from project to project. Construction delay is considered one of the greatest problems in the construction industry and these delays commonly have an antagonistic bearing on project success in terms of time, cost and quality.

Some projects are only a few days behind schedule; some are delayed by over a year (Ahmed *et al*, 2003). Time and cost overruns occur in most construction projects although the magnitude of the delays and cost overruns varies considerably from project to project, Enshassi (2009). The project complexity determines as to whether the delay is slight or main; simpler projects are easy to manage and therefore their delays may be less as opposed to projects of a complex measure. Depending on the size and complexity of a project, managing the scope of activities can range from being very easy on small and simple projects, to being very difficult on large and complex projects that may span several years (Wilson, 2015). Assurance of project schedule has been considered as an important indicator of project success and factors associated with project schedule have been recognized to be critical to project success (Ling, Low, Wang and Lim 2016). Well-managed construction requires definite plans which guide in communicating to the project team what work is to be performed, which resources are required to undertake those works, and in what time frames they are required to be completed; It shows how the project will be effectively and efficiently achieved and therefore in the absence of an appropriate plan, the project is destined for failure.

A successful project is delivered within the limitations of time, cost and quality therefore the successful completion of a project in a timely manner is measured as one of the critical factors in assessing its success which is reliant on its completion time from the initiation to the delivery of the intended results. Hasseb, Bibi, and Rabbani (2011) illustrated that a project's success is based on meeting objectives within time and budget limits. Although timely completion of the project is one of the determinants of its success, it is important to manage each project based on its uniqueness (Divakar and Subramanian, 2009). Worldwide, the inability to complete projects on time and within budget continues to be a serious problem. Most projects are usually delayed thereby falling behind the scheduled completion time and this usually affects the beneficiaries/users of the projects.

Project management processes are normally divided into initiating, planning, executing, controlling and closing processes (Prabhakar, 2008); from initiation, there are several tasks that must be performed within the stipulated time frame in order to achieve the objectives including completing the project on time. Planning and scheduling define what needs to be done, which is to do it and the time it will take for completion and although there are plans to guide the project teams, more often than not, most projects fail to complete as outlined in the project plan. Taking the time to develop a well-thought-out plan is critical to the successful accomplishment of the project objective (Pinto, 2011); this plan is a critical tool as it will always act as a reference during the project implementation stage.

Global Perspective of Project Completion

Globally, several researchers have studied delays in construction projects; Ogunlana (2009) researched on the success factors in large scale construction projects in Thailand and concluded that project planning and control, project personnel and involvement of clients contributed to the project success. Al-Najjar (2008) in his study concluded that some of the significant factors causing time overrun in construction projects in Gaza Strip included lack of materials in the market, cash shortage during construction, Israeli attacks and border closures.

Ayman (2010) outlined that the causes of delays on 130 public projects in Jordan were related to designers, user changes, weather, site conditions, late deliveries, economic conditions and increase in quantity. In another study, Alaghbari Wa'el (2017) concluded that the factors causing delay of building construction projects in Malaysia included financial problems, late supervision, lack of materials on the market and poor site management. Another research conducted in Malaysia by Hussin and Omran (2012) specified that financial problems of developers, contractors, the local and national governments and stakeholders led to neglect of 70 percent of Malaysian transport construction projects. Al-Kharashi and Skitmore (2012) identified difficulties in project financing, poor site management, poor qualification of the contractor's team and delay in approving changes in scope as the factors contributing to delay in Saudi Arabian Public construction projects. Mahamid (2011) identified commencement delays, poor resource management, insufficient inspectors, and communication breakdown between construction parties as some of the contributors of time delay in road construction projects. Al-Tabtabai (2012) established that slow financial and payment procedures and decision-making process, limited authority among supervision staff, risk allocation mainly on the contractor and lack of design drawings coordination were the causes of delays in construction projects in Kuwait. Sambasivan and Soon (2007) established that poor planning and site management, inadequate supervisory skills on the part of the contractor, delayed payments, material shortages, labor supply shortages, equipment availability and failure, poor communication and rework were the most important causes of delays in the Malaysian construction industry. Globally, what the researchers identified to be causes of delay in project completion include delays related to designers, user changes, weather and site conditions, late deliveries, poor planning and financial conditions, lack of supervision, poor resource management among others.

Regional Perspective of Project Completion

The construction industry regionally has also experienced several challenges in respect to completion of public construction projects. Mbachu and Nkando (2017) established that quality and general attitude to service largely affected project delivery in South Africa thereby leading to delays. Sonuga (2002) established that inadequate sources of funds, corruption and price variation contributed to project failure in Nigeria. A similar study, Owolabi (2014) revealed that 7 out of 10 projects in Nigeria suffered delays in their execution with causes being lack of funds, changes in drawings, lack of effective communication, lack of adequate information from consultants and slow decision making.

A study conducted in 2011 to research on the delay of road construction project linking Kenya, Tanzania, Uganda and Burundi revealed that poor financial management, corruption and limited financial resources to project and financial diversion contributed to the project completion delays. In Ghana, (Frimpong, Oluwoye, & Crawford, 2013) identified material procurement difficulties, monthly payment difficulties to contractors, poor contract management together with poor technical performance as the factors resulting in projects delays. Another study, Amaka (2011) pointed that the operating environment has a critical role in determining the critical success factors such as objective performance, top management support, management of design and technical factors which can influence project performance of construction projects in Nigeria.

Kaliba, Muya and Mumba (2019) established that the major causes of delay in construction projects in Zambia were delayed payments, financial deficiencies on the part of the client, economic problems, change in design, unavailability of equipment, poor supervision and staffing problems. El-Razek, Bassioni and Mobarak (2018) concluded that payment delays, coordination problems and poor communication were causes of delay in construction projects in Egypt. There have been several projects initiated in the region and most of them have not been completed within the scheduled time; studies were conducted on the main causes of those delays and concluded that limited/inadequate financial resources, poor financial and contract management, political influence and the operating environment led to delays in completion of the projects.

The Local Perspective of Project Completion

One of the objectives of devolution of government was to promote social economic development and the provision of proximate, easily accessible services throughout Kenya (Constitution of Kenya, 2010). Both the National and County governments in Kenya have had major projects commenced over the years but most of these projects are not completed as planned. Once the projects are prolonged past the completion time it means that the beneficiaries/users have to wait longer to use the services and in some situations the projects are neglected altogether which ideally means that the taxpayers' money is lost to these incomplete and abandoned projects and at the tail end the beneficiaries will lose the opportunity of enjoying the benefits of that project. The delays in project completion cause anxiety and agony among the beneficiaries and locally, there have been concerns raised on different projects which have extended beyond their planned completion time.

Wambugu (2013) outlined that inadequate supervision and inspection of work in construction projects led to rework in instances of poor workmanship and this at the end contributed to delay in timely completion of projects. A report by the GoK (2012) and World Bank (2013, indicated that the construction of Thika Superhighway which was fixed to be completed in the year 2011 was completed in 2012 which is a year later. The report further indicates that the deadline was moved twice occasioning to cost and time overruns. Also, the same project shot up higher to a cost kshs.7 billion more than the initial planned budget due to political differences, bad weather conditions, lack of community participation/involvement, poor technology that came from the local sub-contractors, economic fluctuation which all contributed to the delay. Another project that was not completed in time is the construction of Greenfield terminal at Jomo Kenyatta International Airport which was as a result of financial resources and technology (GoK, 2013). The project start date was postponed severally leading to the project falling behind schedule.

Chepkoech (2012) indicated that the multimillion Kericho-Miruka-Chabera-Ahero-Kisumu road which was to be completed by 2002 delayed for two and half more years before completion due to political reasons in that funds assigned for the project were withdrawn by political leaders leaving the project with no funds. Financing issues, project planning, pre-planning and material delivery influenced completion of construction projects in Nairobi (Munyoki, 2014). Msafiri (2015) inquired into the causes of delay in road construction projects in Kenya and concluded that the delay was as a result of delayed payment to client, inadequate planning and slow decision making as a consequence of bureaucracy in client organization. According to Langat (2015) the factors influencing completion of construction projects in public secondary schools in Bomet County were adequate funding allocation, stakeholder involvement and good project leadership of the project team which enhanced proper and quick project completion. Owuor (2016) established that there is a major impact of political factors in timely completion of construction projects in Kenya. Another study (Mwangi, 2016) revealed that skilled manpower enables the construction company to achieve overall goals and coordination among departmental heads in the construction firm improved firm productivity. Muriithi (2017) concluded that adequate resource allocation improves timely project completion and also public consultations help to avoid unnecessary lawsuits. Makori (2015) in his study on the factors influencing timely completion of community initiated tea buying centres construction projects in Kisii County revealed that availability of funds, academic qualifications of the staff involved in the project and technical competence of the project manager influenced the completion time of the tea buying Centre construction projects. Cherwenyi (2018) in his study on Influence of Project Design Errors on Project Time Run in Kenya concluded that there is a moderate positive relationship between project design errors on project time and a strong relationship between project scope change and project time run; the study also affirmed that procurement procedures played a role on project time run.

The Government of Kenya has made key milestones as regards to developments which comprise modernizing the government services. There are laws that have been passed to oversee procurement systems such as Public Procurement Oversight Authority (PPOA, 2014), Public Procurement and Disposal Act (PPDA, 2014) and Public Procurement and Disposal Regulations (PPDR, 2006) and this has gone a long way in restricting ills linked to cost and time overruns. Unfortunately with all the measures in place, projects still continue to stall and most of them fall behind their planned schedules. Trans Nzoia CIDP 2018 – 2022, lists some of the causes that led to delays in its process include Litigation issues which particularly slackened execution of some development projects for example Construction of County Teaching and Referral. Also, it points out that political interference and conflict of interest slowed down execution of development initiatives. Similarly the lawsuit on the recruitment of ECDE care givers prevented timely service delivery in

the education sector. Further, court cases on irregularly acquired public land hindered implementation of housing development. Projects fail most often because of poorly written or misinterpreted requirements and once a project is begun, controlling schedule and cost is the most difficult aspect of the project manager's job (James, Taylor and PMP, 2008). Trans Nzoia County Development Plan 2017/2018 states that the projects which were proposed for implementation in the Health sector during the 2015/2016 financial year included completion of the construction and equipping of the county referral hospital but the project is yet to be completed. According to the County Annual Progress Report (C-APR) 2017-2018, the construction of the Trans Nzoia county teaching and referral hospital is ongoing at 80% completed works and the project is expected to be completed in 2019/2020 financial year. Different studies have pointed out to the factors affecting completion of public construction projects and these include inadequate funding, inadequate supervision, political differences, bad weather conditions, lack of community participation/involvement among others.

Statement of the Problem

A schedule is a listing of a project's milestones, activities, and deliverables, usually with intended start and finish dates (Sagah and Amit, 2011). Delay is a major projected risk in many if not all construction projects and it is argued that if a project is not finalized by its stipulated completion date, the owner, the beneficiaries and the construction team suffer damages and therefore, with the delays in project completion losses are incurred directly or indirectly.

Msafiri (2015) established that delayed payment to client, inadequate planning and slow decision making due to bureaucracy in client organization led to project delays. According to Langat (2015), adequate funding allocation, stakeholder involvement and good project leadership of the project team were the factors which influenced completion of construction projects in public secondary schools in Bomet county. Owuor (2016) in his study established that there is a major impact of political factors in timely completion of construction projects in Kenya. Makori (2015) in his study on the factors influencing timely completion of community initiated tea buying centres construction projects in Kisii County revealed that availability of funds, academic qualifications of the staff involved in the project and technical competence of the project manager influenced the completion time of the tea buying Centre construction projects. As a county, Trans Nzoia has initiated a number of construction projects and although not all projects fall behind schedules, it can be concluded that a large majority of the public construction projects fall behind schedule and others have stalled and abandoned altogether which is a distressing state of affairs because a large sum of taxpayers' money has been used on those projects. Therefore, the study seeks to analyze factors affecting the completion of public construction projects in Trans Nzoia County.

General Objective

The main objective of the study was to analyze the factors affecting the completion of public construction projects in Trans Nzoia County.

Specific Objectives

The study was based on the following research objectives,

- I. To determine the effect of resource allocation on the completion of public construction projects in Trans Nzoia County.
- II. To evaluate the effect of project monitoring on the completion of public construction projects in Trans Nzoia County.
- III. To examine the effect of knowledge and skills of the project manager on the completion of public construction projects in Trans Nzoia County.
- IV. To evaluate the effect of politics on the completion of public construction projects in Trans Nzoia County.

Research Questions

The study sought to answer the following questions:

- I. What is the effect of resource allocation on the completion of public construction projects in Trans Nzoia County?

- II. What is the effect of project monitoring on the completion of public construction projects in Trans Nzoia County?
- III. What is the effect of knowledge and skills of the project manager on the completion of public construction projects in Trans Nzoia County?
- IV. How does politics influence the completion of public construction projects in Trans Nzoia County?

Significance of the Study

This research is beneficial to the following:

County Governments

The findings of this study provide necessary information to the County governments and various development agencies for purposes of anticipating challenges facing public construction projects and finding solutions to those challenges/problems; it is believed that once the causes of construction delays have been identified, measures can be put in place to ensure that delays are avoided in projects.

Contractors, Project Managers & Development Agencies

The study is beneficial to the contractors because once the factors likely to affect the projects are identified, measures are put in place to ensure the projects do not fall behind planned schedules.

Scholars

The findings and recommendations of this study contribute to the existing literature in the field of project management as well as helping in further research activities by future academicians/scholars and researchers.

Scope of the Study

This research focused on public construction projects implemented by the County Government of Trans Nzoia. The County covers 2,495.6 km² and comprises of five administrative Sub Counties; Kiminini, Saboti, Cherang'any, Endebess and Kwanza with twenty five administrative wards (Trans Nzoia County Integrated Development Plan 2018-2022).

Limitations of the Study

Due to the ongoing fight against corruption in the country, some of the respondents were not so free to engage any person conducting research as regards to the county operations and given some of the targeted respondents were found at the construction sites data collection was a challenge.

2. LITERATURE REVIEW

Introduction:

This chapter presents a review of literature on the factors affecting the completion of public construction projects in Trans Nzoia County. It consists of the following sections; theoretical and conceptual framework, review of variables, critique of the existing literature, research gaps and summary.

Theoretical Framework

Theoretical framework alludes to the arrangement of interrelated ideas and suggestions that display an efficient perspective of marvels by determining relations among factors (Kothari, 2014). This study was guided by general systems theory, theory of constraints (TOC) and contingency theory.

General Systems Theory

The General Systems Theory by Bertalanffy Ludwig (1968) relates an organization as a system which consists of tasks, structure, people and the environment. A system is any set of interconnected but different parts operating together to achieve a common goal. This theory is directly related to the independent variables of this study which are; resource allocation, project monitoring and the project manager's knowledge and skills because a project is system and it consists of different phases and different activities are involved in each phase. The initiation stage/phase entails recognizing that a project should start and obligating to do so, the planning phase involves formulating and maintaining a workable outline to accomplish the project goals. At the executing stage it requires coordinating people and other resources to carry out the

plan, the controlling phase ensures that the project objectives are met by monitoring and measuring progress and taking corrective action where necessary and finally the closing stage is mainly formalizing acceptance of the project and bringing it to an orderly end (PMI, 2008). All the stages involved in the project follow each other chronologically and together contribute to intended results/objectives of the project. Knowledge and skills of the project manager are vital because the people involved in the project implementation also play an important role in ensuring its completion within the set timelines.

Theory of Constraints (TOC)

The theory of Constraints is based on the idea that every system has at least one bottleneck which can be defined as any kind of situation that impedes the system to reach high performance level in terms of its purposes (Goldratt, 1990). Theory of Constraints originated from the idea that the achievement of project objectives is restricted by at least one or more constraints. Constraints are factors that could restrict product or project options, setting limits to what can be achieved, how it can be achieved, in what timeframe or at what cost (Knapp, 2006). The key challenge of project management is to attain all of the project goals and objectives while honouring the preconceived project constraints (Lamb, Robert and Boyden, 2016). In project management, the typical project limitations are time, scope and budget.

This theory is linked to project resource allocation since the management of projects requires resources to achieve project objectives and these resources are always scarce and therefore, it is the Project Manager's responsibility in ensuring proper use of the assigned resources to ensure achievement of project objectives including timely completion of projects. The basic goal of project management is to deliver an acceptable product, typically referred as project scope on schedule and within budget (Knapp, 2006). With the understanding of the Theory of Constraints (TOC) which is directly linked to resource allocation, the project manager is well equipped to handle challenges as pertains project constraints; he has an overview on what to expect in projects and how to manage the risks which may lead to delays in completion of tasks thereby making the project fall behind schedule.

Contingency Theory

Contingency Theory by Fred Fiedler argues that there is no universal or one best way to manage; a wide range of external factors must be considered and the attention should be on the action that best fits the situation at hand. Scott (1992) asserts that the best way to organize depends on the nature of the environment to which the organization relates. Depending on the situation, decisions are made keeping in mind that there are varied dynamics and complexities of the organization structure and it is therefore important to note that different organizations have different demands and their management varies from one to the other. This theory has two basic underlying assumptions; first, there is no best way to organize and second that any way of organizing is not equally effective (Galbraith, 1973) It is therefore important that continuous monitoring of the project progress is maintained to ensure that it is kept on track and progressing towards the achievement of the set objectives. Every project is unique and therefore all the factors must be considered before an appropriate decision is taken, it is the project manager's work to ensure that he identifies and takes appropriate action as needed to enable the project complete within schedule. Any decision taken by the project manager contributes towards the completion of the project or its delay and it is of essence that proper planning is conducted prior to the implementation of any project. In the contingency theory, it highlights that just one part of the project cannot contribute to its success but the overall operations and every detail in the project is very crucial for the general performance and success of the project. It is therefore important that at each stage, proper project monitoring is done to ensure that any deviation is identified and recorded at the earliest possible opportunity and proper mechanisms put in place to avoid completion delays or project failure.

Conceptual Framework

Kothari (2014) describes conceptual framework as the arrangement of interrelated ideas, definitions and suggestions that show a precise perspective of wonders by determining relations among factors. A conceptual framework is a diagrammatical illustration of hypothesized relationship between independent and dependent variables of the study. It is an argument about why the topic one wishes to study matters and why the means proposed to study it are appropriate and rigorous (Sharon and Mathew, 2012). The conceptual framework consists of independent variables and dependent variable. The independent variables are resource allocation, project monitoring, knowledge and skills politics while the dependent variable is project completion as shown below:

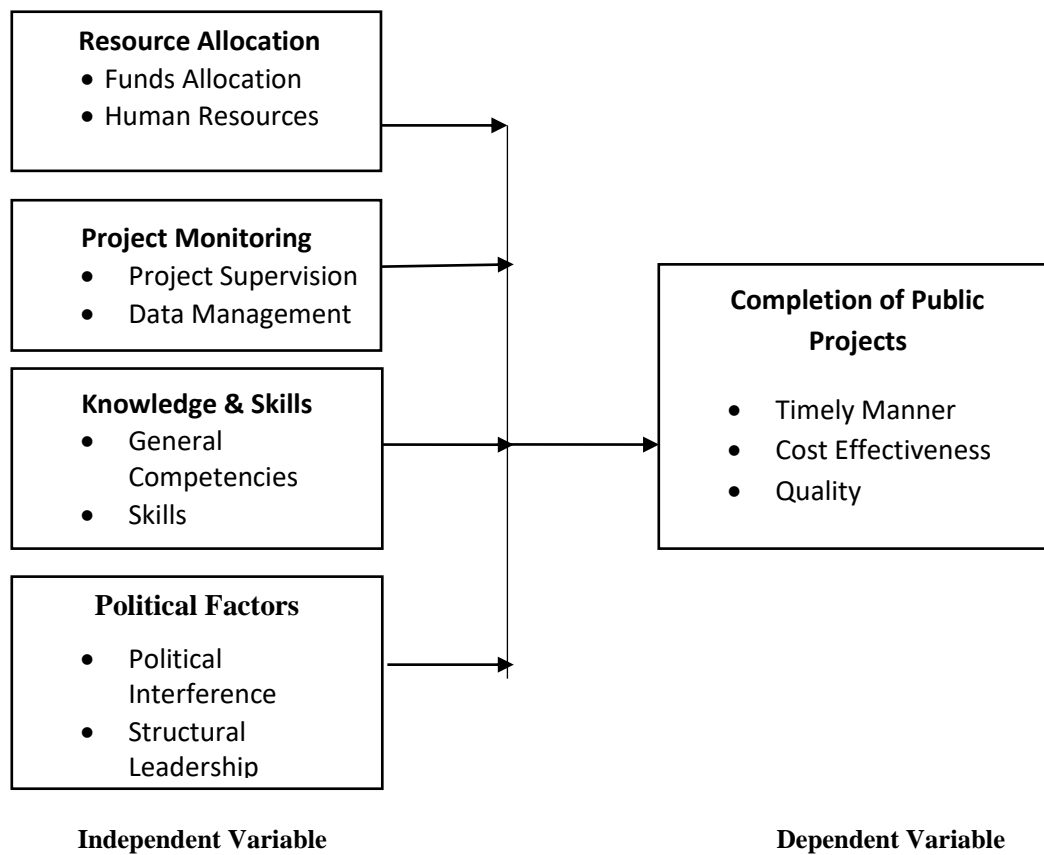


Figure 2.1: Conceptual Framework

Review of Variables

Resource Allocation

Resources are materials that the project requires for its implementation and completion as planned Haugan (2002). Resource allocation involves planning for the resources that the project requires and therefore the completion of a construction project at a maximum efficiency of time and cost requires careful scheduling and allocation of primary resources of manpower, equipment and materials (Sears *et al.* 2015). Resources which include, labour, equipment and machinery must be proportionate not only with the scope of work but also with the stipulated completion time and therefore, it is important to note that completion time is more or less indirectly proportional to the allocated resources (Ramakrishna, 2010). Lack of facilitation of the project processes in terms of material allocation will mean that no activity can begin which in the end leads to delays. Project activities need resources for their execution and typically, resources are only available in limited amounts (Demeulemeester, 2009). Allocation of adequate and necessary resources should therefore be taken into consideration during the project planning phase. Resource planning involves determining what physical resources (people, equipment, materials) and what quantities of each should be used to perform project activities (PMI, 2008). Gwadoya (2010) observed that financial resources for construction projects should be estimated realistically at the planning stage of the project; proper resource estimation must be done by determining the quantities and type of materials required in the entire project. Sometimes the human resource is ignored by the project manager; it is not just important to have the human resource in the project, what is most important is to have the right people with the required knowledge, skills and experience in the project. If people who are qualified and with the required expertise are employed to work on a project, then it becomes easier in the execution of the work. Having people in a project who are not qualified may mean having to spend extra time in training them on how the job is done and this takes time which amounts to delayed completion of tasks therefore leading to project completion delays in the long run. In addition, the project manager must ensure that the required number of people is hired to execute the tasks in a project; if there is a limitation on the number of people working on a particular task it ideally means the few people will take much time in completing a particular task. Muriithi (2017) concluded that adequate resource allocation improves timely project

completion and also public consultations help to avoid unnecessary lawsuits. Resource approximation should be properly conducted because lack of cautious estimation poses a danger of having less amounts of resources with the risk of draining them before project completion thereby increasing the chances of delayed project completion. It is important to note that when the resources required for a particular project are availed within time and in the required amounts, the execution of the project will be completed smoothly and as planned. According to Kaming (1997), one of the most important factors causing delays in high-rise projects in Indonesia is the shortage of resources. Therefore, there is a direct relationship between availability of resources and completion time. A sufficiently well allocated resource is one of the success factors of a project (Fortune and White, 2006).

Although project delivery process does not have a stage called funding, budgetary constraints affect each stage of the process (Sullivan and Mayer, 2010). Budget/fund constraints are a major contributor to delay in project completion. All the resources required for the project should be budgeted and obtained in a timely manner to ensure that the project is not delayed or stopped awaiting project resources. It is unrealistic to expect a project to complete within schedule if the funds are delayed and therefore, it is important to remember there is a significant relationship between timely release of funds/resources and timely completion of projects. Pace (2016) indicated that it is important to allocate required funds for each construction project as delays in one aspect will lead to major delays in the general project scheduled completion time of the project. In the world today, resources can never be enough; every project requires resources in terms of funds and materials for the project but these funds are not in plenty and therefore there is limited accessibility which results in competition for the limited resources. With the resources available, the project manager is expected to utilize them well and implement the project as planned in order to meet the objectives. If the scarce resources are misused, there will be little or no resources left for the project and this means the project will not be implemented as planned. A survey by Ubaid (1991) determined that the contractor's resources are the major measures on the contractors' performance that cause delays. Makori (2015) concluded that adequate funds together with competent project staff ensure timely completion of construction projects.

Project Monitoring

Monitoring is the art of collecting the necessary information with minimum effort in order to make a steering decision at the right time, (Gudda, 2011). It is a continuing function that aims primarily to provide project management and the main stakeholders of an ongoing program or project with early indications of progress, or lack thereof, in the achievement of program or project objectives (UNDP, 2016). All those involved in the project need to know how the project is progressing in comparison to the set plans and make judgment of the actual progress/state of the project. Monitoring is a recurring process involving comparison of actual performance to scheduled performance, estimates to completion and corrective actions based on such estimates which often require either performance adjustments or schedule revision (Marco, 2011). Project monitoring is important in projects because it determines the project success by tracing the key elements of a project which include the inputs, activities and outputs. The projects are continually monitored on how they are progressing and therefore it is easy to identify any deviations from an existing plan and this gives real-time update to allow for make appropriate project control policies and decisions, if project deviations are identified as soon as they occur, they can be corrected thereby allowing the project to complete as planned. Monitoring enables the project to track the performance of project on a continuous basis so as to ensure that everything is implemented as planned. Waithera (2015) concluded that when all the stages of the project are monitored and information collected, it can guide future related projects on what to do or avoid in order achieving the objectives.

During the planning phase of a project there are strategies set on how the project objectives can be met and therefore monitoring checks how far the project is progressing towards the achievement of the set objectives. The UNDP (2009) handbook on planning, monitoring and evaluation for development results, emphasizes that human resource is critical for an effective monitoring and evaluation; it states that the employees should have the essential technical capability and skills so as to ensure high-quality monitoring and evaluation. Implementing of an effective M&E demands for the staff to undergo training as well as possess skills in research and project management, hence capacity building is critical (Nabris, 2012). Project monitoring assures accountability in the use of all the resources for the project and forms a base for decision making; it affords a valuation on the significance and performance of the project being effected and therefore it is an important tool in the management of projects. When the project team knows that the project progress is being checked, they tend to stick to the plan and ensure that it is tracked so as to escape nonconformities which may lead to rework.

Knowledge and Skills of the Project Manager

Knowledge and project management skills are very vital to every project manager for it is the project manager's responsibility to ensure the execution of the plans which lead to overall success and performance of the project in terms of time and cost. Project management is the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project (P.E, 2010). General management of the projects includes planning, organizing, directing and controlling (Khanna, 2011). The management of construction projects requires knowledge of contemporary management as well as an understanding of the design and construction process. Project managers in construction are accountable for the overall success of delivering the project within the limitations of cost, schedule, quality and safety requirements. For a project manager to successfully and professionally manage any construction project, he must possess project management knowledge and expertise because they are key for the success of a project. Nowadays, most organizations emphasize on hiring project managers with project management knowledge and skills to ensure smooth running of the projects. Scheduling and planning management is the most significant knowledge for the construction project while cost, quality, human resource and communication management are the second most competencies in the construction project; Project managers' competency affects the performance of the construction process (Khamaksorn, 2016).

Skills are the application of knowledge to project work that ensures accomplishment of the work in an effective and efficient manner, Ireland (2014). Project managers play a key role in launching new products and managing for success; they create strategies and orchestrate carefully designed action plans to complete projects successfully, often incorporating complex dynamic and changing requirements (Murich, 2016). The project Manager's skills, competence and experience will affect the execution of projects and in totality the project completion time which basically means falling behind schedule or being within the planned schedule. A competent professional is generally understood to be someone who can do the job, Kumar & Prasad (2013). The project manager is tasked with the duty of planning, control and coordination of the project from the beginning to the end; he is liable for ensuring that the project is completed within time, on budget and that it meets the objectives. Therefore from initiation to project closure, different skills are required in ensuring smooth transition from one phase to another; of importance is the leadership capability of the Project manager so as to lead the project team in delivering the project objectives. Baya and Song (2016) stated that managerial capability of project managers should be enhanced to curb delays in projects. According to Ireland (2014), knowledge consists of the general and specific project management theory, concepts, practices, procedures, processes and methodologies that apply to an industry and the complexity of projects being conducted. The project manager is tasked with ensuring that activities are conducted as planned so as to complete and deliver the work to the customer as agreed. Developing a comprehensive and effective schedule management plan helps to ensure project success in managing work activity durations. (Wilson, 2015). Kothari (2013) identified the characteristics of a successful project manager as leadership, technical knowledge and experience, communication, planning and organization, motivation and personality. It is important for the project manager to possess the highlighted qualities to be able to manage the projects well.

Competence goes hand in hand with skill; when a project manager possess both competence and the required skills together with great planning, the objectives can be easily achieved. According to Langat (2015) the factors influencing completion of construction projects in public secondary schools in Bomet County were adequate funding allocation, stakeholder involvement and good project leadership of the project team which enhanced proper and quick project completion. Planning is the systematic arrangement of tasks to accomplish an objective that is represented by the plan (Pinto, 2011). It is of great importance that all people are involved in the planning stage in order to avoid any challenges during implementation of activities. Involving everyone at the planning phase of the project makes the people have a sense of commitment to the project. For one to be able to plan well for a particular project, he must have the required knowledge, skills and experience as relates to that particular project, all the details and time requirement for each activity must be put into consideration. Appropriate project planning minimizes uncertainties in the project thereby increasing its efficiency. On the contrary, the absence of proper planning leads to delays in project completion time; once a project is far behind schedule, it becomes difficult to get it on track therefore leading to overall project delay and failure to deliver as planned. To achieve timely and effective project completion, the project manager should treat the necessary effort as a mini project which requires a level of planning and control consistent with the needs of any other major project. (Robert and James, 2017).

In addition to project planning, knowledge of project control tools is also important. Time estimation skills help the project manager to establish time durations of the project from start to the end. If the manager lacks time estimation skills together with the required experience, it is possible to underestimate the amount of time required to complete a particular task/ activity in the project. Excellent planning skills should also be coupled with monitoring skills; Monitoring is the art of collecting the necessary information with minimum effort in order to make a steering decision at the right time; it is performed while a project is being implemented, with the aim of improving the project design and functioning while in action (Gudda, 2011). The project manager must have knowledge on how the monitoring processes work, it is his duty to constantly monitor the progress so as to ensure all the activities are on track and if otherwise, he will have the earliest opportunity to discover any deviance and put corrective measures in place to get the project back on track.

In order to be successful in the new project landscape, the skills of project management professionals and the techniques used must evolve; the project manager must move from a style of managing project plans and directing reports to a more influential and consultative approach that requires facilitation, negotiation and relationship management (Wills, 2010). A weak link in the process such as a lack of project management experience, could adversely affect timely execution/ timely completion of the projects” Dainty *et al.* (2003) as cited by Olatunji (2010).

There is a link between projects’ life cycles and soft skills (Belzer, 2004). Makori (2015) in his study on the factors influencing timely completion of community initiated tea buying centres construction projects in Kisii County revealed that availability of funds, academic qualifications of the staff involved in the project and technical competence of the project manager influenced the completion time of the tea buying Centre construction projects. The success or failure of a project is mostly credited to the ability/inability of the project team to efficiently engage soft skills in the project execution. It is with no doubt that knowledge and skills determine the implementation of projects and the overall project completion time. The planning, monitoring and control of all spheres of a project and the motivation of all the players involved are critical in the realization of the project objectives including timely completion. Makori (2015) established that technical competence of the project manager influenced the completion time of the tea buying center construction projects to a large extent. It was also concluded that the most relevant skills for the project manager to have were the controlling and coordination skills. Wambugu, (2013) established that inadequate supervision and inspection of work in construction project led to rework in instances of poor workmanship and this led to delay in project timely completion and in the end not achieving project schedules. The supervision of projects is very important because, through supervision, the project manager is able to detect any deviation from plan and correct it as necessary before it gets out of hand.

Political Factors

According to Markus and Tanis (2010), political interference plays a critical but poorly understood role in determining the success or failure of the processes of project management. An analysis of the environment of project management functions as a facilitator both for analyzing the role of leadership in system development and for distinguishing three forms of leadership that mostly come into play in efforts to form international institutions: structural leadership, entrepreneurial leadership, and intellectual leadership (Holland, 2019). In projects, stakeholders have their own personal interests which are most of the time conflicting with the project and therefore, it is the project manager’s responsibility to understand these conflicts early enough and solve them in order to ensure that the project objectives are met including completion of projects in time. Those in power are elected by the people to represent them and in participate in coming up with policies which affect the citizens and this includes the construction of public projects; these politicians have a great role to play as pertains to the success or failure of projects. When confronted by political competitors in their constituencies, politicians may be incentivized to improve the quality of possibly vote-winning public projects. It is believed that political competition can improve the delivery of public projects because more often than not, public construction projects have been used as campaign tools. Owuor (2016) established that there is a major impact of political factors in timely completion of construction projects in Kenya. Politics reveals itself in all establishments as thoughts and ideas of various stakeholders in the organizations. Sometimes, the stakeholders relied upon by the project may also have their own agenda and inclinations for engaging in the project. The connections to the project by these stakeholders can differ from being extremely supportive to aggressive, but depending on their field of influence, must be considered and managed. However, neither the sponsor nor the project manager has control over external politics such as political hostility which if it occurs, it may interrupt the project leading to delays in its operations and the general delay in project completion.

Public projects are often left uncompleted or delivered to a poor quality World Bank (2018). The extent of these failures varies within and across countries, driving national and global inequalities Adriaanse and Voordijk (2014). Both politicians and bureaucrats are viewed as critically important agents in the delivery of public projects. Most of the time, politicians do not manage public construction projects but delegate them to people who they are able to coerce and influence to their favor and these kind of projects are often to enrich the politicians for purposes of gaining political influence during elections. Our understanding of the interactions between politicians and bureaucrats is very limited, both in terms of their causes and their consequences (Jha and Iyer, 2016). Positive use of politics can further the goals of an individual, a project and an organization. Using political influence through sharpened interpersonal skills to the benefit of your goals and the organization is worthwhile because in most organizations, a project manager does not have the positional power or authority to remove barriers to project completion (Irwin, 2018). Politics has a role to play when it comes to project schedules and the completion of public construction projects. Chepkoech (2012) indicated that the multimillion Kericho-Miruka-Chabera-Ahero-Kisumu road which was to be completed by 2002 delayed for two and half more years before completion due to political reasons in that funds assigned for the project were withdrawn by political leaders leaving the project with no funds Some projects are started without well thought out plans and their intention is to please the people. Projects which are started without prior planning have no base and they end up being abandoned. Some politicians hire they kin to manage projects and the people hired have no knowledge and skills on project management processes and therefore cannot manage projects.

Completion of Public Projects

Delay is the late completion of construction projects compared to the planned schedule or contract schedule (Abbas, 2016). When the project schedule is firmly followed by the project team, there is a very high likelihood that the project will be finished within the stipulated time but on the contrary, if it is not followed a project is likely to delay thereby prolonging beyond its planned completion time. Completing tasks/projects within the planned time is argued to be one of the success factors and measured as a factor in successful projects. If time is managed well, other factors are much easier to manage and projects will be more effective and efficient. Lack of time management can and probably will result in failure of the project. Time management, therefore is crucial to project success (Haugan, 2012). Achieving project completion on time, within budget, at specified quality standards and most importantly without unprecedented cost escalations was a major criterion of success of project (GoK, 2012). The entire project team involvement in the implementation of project activities must all have a commitment to complete the project within schedule. Sometimes along the way the project team may want to divert their attention and resources into other unnecessary engagements but it is the responsibility of the project manager to manage the team and ensure the project plan is keenly followed during the implementation stage in order to meet the objectives. Maina (2013) concluded that road projects in Kenya faced various challenges including delay in completion, cost overruns, demolition of residential and businesses houses and abortive works. As a project manager, knowledge and skills are employed in ensuring that the project is completed within schedule; a project that is delayed beyond the scheduled time often becomes a liability to the implementing organization, the financiers of the project and the beneficiaries.

For any construction to be managed well, proper schedules must be put in place which serve to communicate to the entire project team the work that needs to be performed, the materials required and within what time frames those works are to be completed. Ensuring project success, delivering projects on time, within budget and according to specifications, still seems to be notoriously difficult (Demeulemeester, 2009). A successful project is accomplished within the predetermined constraints of time, cost and quality therefore the successful completion of a project in a timely manner is measured as one of the critical factors in assessing its success which is reliant on its completion time from the initiation to the delivery of the envisioned outcome/result. Construction projects differ in complexity and depending on the size and complexity of a project, managing the scope of activities can range from being very easy on small and simple projects, to being very difficult on large and complex projects that may span several years (Wilson, 2015). It is important for the project manager to ensure that a project that was begun is completed within the planned schedule as completion on time is a major indicator of project success. Ahmed (2013) states that delays are normally categorized into internal and external; internal causes are those that the parties of the contract contribute while external causes arise from events outside the control of the parties for example acts of God, government action and material suppliers. Delay is one of the most common, costly, complex and risky problems encountered in a construction project (Alaghbari *et al*, 2007). Worldwide, the failure to complete projects on time and within budget continues to be a serious problem. Most projects are usually delayed thereby falling behind the scheduled completion time and this usually affects the beneficiaries/users on the projects.

Project management processes are normally divided into initiating, planning, executing, controlling and closing processes (Prabhakar, 2008). From initiation, there are several tasks that must be performed within the stipulated time frame in order to achieve the objectives which include completing the project on time. Planning and scheduling define what needs to be done, who will do it and the time it will take for completion and although there are plans and schedules in place to guide the project teams, more often than not, you find projects delaying thus failing to complete as outlined in the project schedules. Taking the time to develop a well-thought-out plan is critical to the successful accomplishment of the project objective (Pinto, 2011); this plan is a critical tool as it will always act as a reference during the project implementation stage. When a project is accomplished within the scheduled time frame, the parties to a project who involve the beneficiaries, project team get all satisfied at the end. The availability and adequate allocation of resources coupled with proper cost estimation and planning and with the competent project team who possess the essential knowledge and skills contribute to project success in terms of time, cost and quality. During the planning stage it is very crucial that proper and efficient resource planning is conducted so as to ensure that at the implementation stage all the required resources are available noting that project completion within schedule is an outcome of proper planning and allocation of primary resources. Resource planning involves determining what physical resources (people, equipment, materials) and what quantities of each should be used to perform project activities (PMI, 2008). Therefore, resources which include, labor, equipment and machinery must be proportionate not only with the scope of work but also with the stipulated completion time and therefore, it is important to note that completion time is more or less indirectly proportional to the allocated resources. (Ramakrishna, 2010).

Gwadoyo (2010) observed that financial resources for construction projects should be estimated realistically at the planning stage of the project; proper resource estimation must be done by determining the quantities and type of material required in the entire project. Another aspect to take into consideration when aiming at achieving project schedules is the knowledge and skills of the project team and the project manager. Having knowledgeable, skilled, experienced and committed employees to work on a project is very critical in the project success.

Critique of the Existing Literature

Study conducted by various researchers indicate that main causes of delay related to designers, user changes, weather, site conditions, late deliveries, economic conditions and increase in quantity (Ayman, 2000). Munyoki (2014) revealed that the factors influencing completion of construction projects included financing issues, project planning, pre-planning and material delivery. In a different study, Chepkoech (2012) in her study identified that the project delay was caused as a result of withdrawal of funds due to political influence. Wambugu (2013) outlined that inadequate supervision and inspection of work in construction project led to rework in instances of poor workmanship which also contributed to delay in project timely completion. Msafiri (2015) inquired into the causes of delay in road construction projects in Kenya and concluded that the delay was as a result of delayed payment to client, inadequate planning and slow decision making as a consequence of bureaucracy in client organization.

According to Makori (2015), timely completion of community initiated tea buying centres construction projects in Kisii County was influenced by the availability of funds, academic qualifications of the staff involved in the project and technical competence of the project manager influenced. Cherwenyi (2018) in his study on Influence of Project Design Errors on Project Time Run in Kenya, concluded that there is a moderate positive relationship between project design errors on project time and a strong relationship between project scope change and project time run; the study also affirmed that procurement procedures played a role on project time run. According to Langat (2015), in his research on the factors influencing completion of construction projects in public secondary schools in Bomet County, adequate funding allocation, stakeholder involvement and good project leadership of the project team enhance proper and quick project completion. Another study by Mwangi (2016) revealed that skilled manpower enables the construction company to achieve overall goals and coordination among departmental heads in the construction firm improved firm productivity.

Research Gap

It is fundamental that once projects have been initiated, they are completed within the specific time frame as per the plan. Planning and scheduling determine what needs to be done, who will do it and how long it will take and therefore, taking the time to develop a well-thought-out plan is critical to the successful accomplishment of the project objective (Pinto, 2011). From the reviewed literature, various researchers have touched on the factors relating to project schedules:

Munyoki (2014) revealed that the factors influencing completion of construction projects in Nairobi included financing issues, project planning, pre-planning and material delivery while Msafiri (2015) revealed that the causes of delay included delayed payment to client, inadequate planning and slow decision making as a consequence of bureaucracy in client organization. However, there is little literature available on the factors affecting project schedules and the completion of public construction projects in Trans Nzoia County; therefore, this study will document those factors.

Summary

Chapter two discusses reviews previous studies by different authors and the literature relevant to the study objectives. All the independent variables which are resource allocation, project monitoring, knowledge and skills of the project manager and political factors are discussed in detail and how they influence the completion of projects which is the dependent variable. General System's theory, contingency theory and Theory of Constraints (TOC) guided this study.

3. RESEARCH METHODOLOGY

Introduction

This chapter gives details of the research approach. It covers the research design, target population, sampling frame, sampling technique, data collection procedure and instruments, data processing and analysis.

Research Design

A research design refers to a plan, structure and a strategy of investigation to obtain answers to research question and control variance (Ogula, 2005). This study used descriptive survey; Orodho (2013) stated that descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. Descriptive survey is concerned with describing the characteristics of a particular individual, or groups (Orodho, 2013).

Target Population

According to Orodho and Kombo (2015), population is the bigger gathering from which a specimen is taken. Mugenda and Mugenda (2003) described target population as a group of individuals, objects or items from which samples are taken for measurement. The study was carried out in Trans Nzoia County which has a total of 362 public construction projects (Trans Nzoia County Annual Progress Report 2016-2017) as per appendix (V) attached. The study targeted project managers and contractors who are directly involved in the projects and therefore, the total population for the study was 724.

Sample Size and Sampling Technique

According to Kothari (2013), a sample is a collection of some parts of the population on the basis of which judgment is made. The selected sample should be representative and therefore, it should allow the researcher to make accurate assessments of observations and conduct of the bigger population. In a descriptive research, a sample size of 10-50% is acceptable, (Mugenda and Mugenda, 2003). Therefore, the study sampled 20% of the total population (724) making a sample size of 144 respondents. The study used purposive sampling; Purposive sampling is a type of non-scientific sampling based on selecting the individuals as samples according to the purposes of the researcher as his controls; an individual is selected as part of the sample due to good evidence that he is a representative of the total population (Calmorin, 2017). Purposive sampling involves deliberate selection of particular units of the universe for constituting a sample which represents the universe (Kothari, 2014).

Table 3.1: Sample Size

Total Population (N) (n=20% of N)	Sample Size (n)
724	144

Sampling Frame

Sampling frame refers to a list of elements from which a sample may be drawn. (Cooper and Schindler, 2016); it is a list or quasi list of elements from which a probability sample is selected. The sampling frame for this study consisted of 724 respondents.

Data Collection Instruments and Procedure

According to Mugenda and Mugenda (2003) research instruments are the means by which primary data is collected. In this study, questionnaires were used for data collection; a questionnaire contains a number of questions printed or typed in a definite order on a form or set of forms. Questionnaires are a convenient way of collecting data, it's free from bias and influence of the researcher and respondents have adequate time to give their well thought out answers. (Kothari, 2014). The respondents are expected to read and understand the questions and write down the reply in the space meant for the purpose in the questionnaire itself; they have to answer the questions on their own (Kothari, 2014).

Pilot Test

Piloting of the research instruments is important for validity and reliability tests of the instruments, Borg and Gall (2013). Pilot survey in fact is the replica and rehearsal of the main survey; it brings to light the weaknesses (if any) of the questionnaire and also of the survey techniques (Kothari, 2014).

Validity of Research Instruments

Validity of a research instrument illustrates the degree to which results obtained from the analysis of data actually represent the phenomena under study (Kothari, 2014). Wambui (2018) defined validity as the accuracy and meaningfulness of inferences based on research results. Validity can therefore be said to be the point to which an instrument can measure what it is supposed to measure. Validity considers the extent an instrument asks the right questions relation to the required accuracy and the degree to which obtained data analysis results represents the phenomenon under study (Ronoh, 2018). The supervisor was instrumental in ensuring that the research instrument met the validity threshold. Wekesa (2016) noted that the inferences based on the analyzed data will be accurate and meaningful if such data is a true reflection of the variables. The research instruments for the study were rated according to their effectiveness in sampling significant aspects of the study purpose and fulfilment of the study objectives.

Reliability of Research Instruments

According to Wekesa (2016), reliability of a data collection instrument refers to the ability of that instrument to produce consistent and stable measurements. Scores obtained in this approach are correlated with other scores obtained from other items in the instrument (Kothari, 2013). Cronbach's alpha is the most commonly used measure of reliability for scored data. According to Sears *et al* (2015), the most acceptable alpha is 0.70 and above since values range from 0 to 1.

Data Processing and Analysis

Data analysis is the process of systematically searching and arranging field notes, data and other materials obtained from the field with the aim of increasing one's own understanding and to enable one to present them to others (Orodho, 2013). Data analysis involved examining and summarizing collected data with an objective of mining valuable information while eliminating the unnecessary data and making the crucial conclusions; it included cleaning, sorting and coding of raw data collected from the field and processing by use of Statistical Package for Social Sciences (SPSS). Descriptive and multiple regression analysis was also adopted as shown in the regression model below;

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

Where;

Y	Project Schedules (Dependent Variable)
β	Coefficient of the regression
X_1	Funds Allocation
X_2	Project Monitoring
X_3	Knowledge and Skills
X_4	Political factors
ϵ	Error term

4. RESEARCH FINDINGS AND DISCUSSIONS

Introduction

This chapter presents the study findings. It consists of the background of the respondents with a presentation of the raw data followed by explanations and analysis of the specific study objectives.

Response Rate

The response rate from the exercise is as shown in table 4.1 shown below:

Table 4.1: Response Rate

Questionnaire Status	Frequency	Percent
Fully filled and Returned	135	93
Not returned	9	7
TOTAL	144	100

Out of the 144 questionnaires administered, 135 (93 percent) questionnaires were filled and returned and 9 (7 percent) questionnaires were not returned at all. A response rate of above 50% is accepted as being adequate; 60% good and above 70% is considered very good (Mugenda & Mugenda 2003). Therefore, the response rate was considered sufficient for data analysis and interpretation.

Reliability Test

A pilot study was conducted by administering of 20 questionnaires in Bungoma County. The findings of the pilot study indicated that Resource Allocation had a coefficient of 0.764; Project Monitoring had 0.783, Knowledge and Skills of the Project Manager had a coefficient of 0.717 and Political factors had a coefficient of 0.789. All constructs depicted that the value of Cronbach's Alpha are above the suggested value of 0.7 leading to the researcher concluding that the data collection instruments were reliable to be used for data collection for the main study (Mrangu, 2018).

Table 4.2: Reliability Analysis

Variables	Number of items	Cronbach alpha	Comment
Resource Allocation	5	0.764	Acceptable
Project Monitoring	5	0.783	Acceptable
Knowledge & Skills of Project Manager	5	0.717	Acceptable
Political Factors	5	0.789	Acceptable
Completion of Public Projects	5	0.781	Acceptable

The overall reliability statistics was then extracted from the data and presented in table 4.3 as shown below;

Table 4.3: Reliability Statistics

Cronbach's Alpha	Based on	Standardized	Cronbach's Alpha	Items	N of Items
.776	.779	5			

Respondents Background information

Questionnaires included a section for the respondents' gender where the respondents were to indicate their gender. The purpose of this section was to determine the gender inequalities (if any) in the construction sector in Trans Nzoia. 85 (63 percent) of the respondents were male and 50 (37 percent) were female and this implied that female were fewer in the public construction projects in Trans Nzoia County as compared to male.

The data collected was as presented in table 4.4 below;

Table 4.4: Respondents' Gender

Gender	Frequency	Percent
Male	85	63
Female	50	37
Intersex	0	0
Total	135	100

Respondent's age distribution

Table 4.5: Respondents' Age

Age	Frequency	Percent
Below 30	31	23
31-49	82	60
50 and above	2	17
Total	135	100

The data collected on age distribution was compiled and presented in table 4.5 above. Majority of the respondents 82 (60 percent) were aged between 31-49 years old followed by those aged below 30 years at 31 (23 percent) and finally the minority group was aged above 50 years at 2 (17 percent). From this, it clearly shows that the middle aged people are actively involved in construction projects in the county.

Respondents' Education Level

The respondents' education level is as shown in the table below;

Table 4.6: Respondents' Education Level

Education level	Frequency	Percent
Diploma	10	7
Undergraduate	102	75
Post Graduate	23	18
Total	135	100

Table 4.6 above presented education level of the respondents, majority of which were undergraduates at 102 (75 percent), Post graduates were the second largest group at 23 (18 percent) and lastly Diploma holders 10 (7 percent). Majority of the people involved in the construction projects have attained undergraduate level of education and therefore, this shows that they have the prerequisite knowledge and skills required in the construction industry which at the end contributes to the project success.

Respondents Responsibility in the construction project

The role of the respondent in the construction project was of important in this study because it defined what responsibility each of the respondent played in a particular construction project.

Table 4.7: Respondents' Role in the Project

Role	Frequency	Percent
Contractor	65	48
Project Manager	70	52
Total	135	100

From the above table, the project managers were 70 (52 percent) while contractors were 65 (48 percent). This implied that Project Managers were readily available during the study as compared to contractors some of whom had relocated from the site due to delays in completion of the projects.

Presentation of findings as per the Specific Variables

Resource Allocation (Funds and Human Resource).

The respondents were asked to rate their level of agreement with the following statements on resource allocation in relation to completion of public construction projects. SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree, SD-Strongly Disagree.

Table 4.8: Resource Allocation (Funds and Human Resource)

Statement	SA	A	N	D	SD
Adequate allocation of funds influences the completion of projects	50	38	8	2	2
Regular release of funds affects project completion	53	36	2	6	3
Employing qualified personnel to work on the project influences the completion of projects	50	42	4	2	2
Having the required number of personnel to work on the project influences its completion.	50	45	2	3	0

Table 4.8 above shows results for the data collected about the independent variable, Resource Allocation (Funds and Human Resource). On whether adequate allocation of funds influences the completion of projects, 50 percent strongly agreed, 38 percent agreed, 8 percent were neutral while 2 percent of the respondents disagreed, another 2 percent strongly disagreed. With the majority of the respondents strongly agreeing that indeed adequate resource allocation affects completion of projects, it is therefore important to note that adequate resources should be allocated to ensure timely completion of those projects.

On whether regular release of funds affects project completion, 53 percent of the respondents strongly agreed, 36 percent agreed, 2 percent were neutral 6 percent disagreed and 3 percent strongly disagreed. This implies that more than half of the respondents undoubtedly agreed that regular release of funds affect completion of projects positively.

The respondents were asked on whether employment of qualified personnel to work on the project influences the completion of projects, 50 percent strongly agreed, 42 percent agreed, 4 percent were neutral, 2 percent both disagreed and strongly disagreed. This means that the respondents concurred that qualification of those employees working on a project influenced their completion.

When required to respond to whether having the required number of personnel to work on the project influences its completion, 50 percent strongly agreed, 45 percent agreed, 2 percent were neutral, 3 percent disagreed and none strongly disagreed. From the response, it is agreed that having the required number of personnel has a direct influence on project completion.

From the findings of this study, the respondents agree that indeed resource allocation; both funds and human resource directly affect the completion of public construction projects. These findings are in agreement with those of other researchers; Pace (2016) indicated that it is important to allocate required funds for each construction project as delays in one aspect will lead to major delays in the general project scheduled completion time of the project. A sufficiently well allocated resource is one of the success factors of a project (Fortune and White, 2006). According to Kaming (1997), one of the most important factors causing delays in high-rise projects in Indonesia is the shortage of resources. Another researcher, Makori (2015) concluded that adequate funds together with competent project staff ensure timely completion of construction projects. Therefore, there is a direct relationship between availability of resources and completion time.

Table 4.9: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.692	1	74.692	10.746	.005 ^b
	Residual	945.361	136	6.951		
	Total	1020.053	137			

a. Dependent Variable: Completion of Public Construction Projects

b. Predictors: (Constant), Resource Allocation, Project Monitoring, Knowledge & Skills of Project Manager and Politics

With an F-ratio of 10.746, it was found significant at $p < .05$ which meant that the regression model was fit to be used for the analysis in predicting the results and fitting the model.

5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter presents the summary of the study findings as per the data analysis, the conclusions that were derived from the findings and the recommendations in line with the study objectives. The chapter concluded with a suggestion for the areas for further study.

Summary of Study Findings

The main purpose of the study was to establish factors affecting the completion of public construction projects in Trans Nzoia County. Therefore the summary below follows the findings of the study in relation to each objective.

Resource Allocation (Funds and Human Resource)

The study established that the adequate allocation of funds influenced completion of projects. This was evident from the majority respondents who agreed that adequate allocation of funds indeed affects the completion of projects. Once funds have been allocated to a project, there should be regular release of those funds to enable project complete in time, majority of the respondents indicated that regular release of funds affects completion. Employing not only qualified but adequate personnel to work on the project influenced the completion of public construction projects in Trans Nzoia County and this is derived from the majority of the respondents who agreed that it actually influences project completion.

Conclusion

The study was to establish the factors affecting the completion of public construction projects in Trans Nzoia County; from the findings it can be concluded that there is a direct relationship between resource allocation, project monitoring, knowledge and skills of the project manager and completion of public construction projects in Trans Nzoia.

Recommendations

For purposes of future prosperity in the completion of public construction projects in Trans Nzoia County, it was important to make some recommendations to the county stakeholders; from the study findings, the following recommendations were made;

Resource Allocation

The county leadership, especially the relevant departments should ensure that adequate funds are allocated and released on a timely basis to enable timely completion of projects. The public construction projects should be assigned enough personnel who are well versed with the required work to be done to ensure proper completion but not just completion because there is need for the projects to serve the intended purposes.

Areas for further Research

After going through the entire process starting from data collection and ending with the analysis and recommendations, the research was only focused in one sector in the County projects, Construction. Furthermore, the study only covered one county out of the 47 counties in Kenya plus the national government. Therefore, there should be other studies on a similar field using different variables and if possible in different scopes for comparison purposes. Those studies should be carried out specifically on monitoring and evaluation of these public construction projects and other projects in the county and other counties.

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