DETERMINANTS OF TIMELY COMPLETION OF CONSTRUCTION PROJECTS AT KENYA AIRPORTS AUTHORITY

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Nyamwange, R.,[*1] & Nyang'au, S. P.[2]

[*1]Jomo Kenyatta University of Agriculture and Technology [JKUAT], Nairobi, Kenya
[2]PhD., Jomo Kenyatta University of Agriculture and Technology [JKUAT], Nairobi, Kenya

ABSTRACT

The aim of this study was to assess the determinants of timely completion of construction projects at Kenya Airports Authority. Empirical review on budgets; contract variation; monitoring and evaluation; and staff competencies was conducted. The study used a descriptive survey design. The target population for this research was 122 staff obtained from KAA project management department that had been handling different projects at KAA for the last 5 years. Questionnaires were coded, given a distinct number and data entered manually in a computer. This was then analyzed and tabulated accordingly. Data was represented by use of frequencies, percentages and tabulated in frequency tables and descriptive statistics. The study found that budgeting, staff competencies, monitoring and evaluation had appositive and significant correlation with timely completion of construction projects at KAA. The study also found that contract variation had a negative and significant correlation with timely completion of construction projects at KAA. The study recommended that KAA should come up with budgeting procedures which aims to enhance the performance of construction projects such as introduction of budget plans, budget control processes and stakeholder involvement in budgeting process. There is also a need for KAA to involve all the stakeholders involved in project management to reduce contract variation. The management should come up with specific policies that prevent adjustment of the quantity, quality and scope of construction projects by over 15%. The findings of the study also led to the recommendations that KAA should enhance monitoring and evaluation of construction projects by enhancing the monitoring of project viability and increasing performance auditing since it influences performance of construction at KAA positively and significantly. Furthermore, there is a need to establish training programmes to enhance the competence of the project team. There is also a need to recruit based on experience, education level and skills.

Key Terms: *Budgeting, Staff Competencies, Monitoring and Evaluation, Contract Variation, Completion of Construction Projects*

INTRODUCTION

Government and institutions are faced with an increasing need to develop and maintain infrastructure. Construction projects are one of the endeavors with many unique features such as complicated processes, long time spans, extremely challenging environments, financial strains and dynamic organizations structures (Zou *et al*, 2007). Most recent research literature clearly indicates that delays are one of the biggest problems faced by the construction industry. Delay can be defined as a situation when the contractor and the project owner jointly or severally contribute to the non-completion of the project within the original stipulated or agreed upon contract period (Aibinus & Jagboro, 2002). Delays in project implementation are recognized worldwide as a characteristic of construction projects (Sambasivan & Soon, 2007).

A project is considered successful if it is completed on time at cost and according to the specifications of the customer (Nguyen*et al,* 2013). Diallo &Thuiller (2005) observed that time and quality is the management measures of success. Time has always been at the center of evaluation of project success because it has a direct effect on cost and owner satisfaction. Time is an important parameter of measuring project success, an assessment of delays in project implementation indicates the performance of projects. In a construction project the management of time is critical (Duran, 2006), thus predicting a likelihood that schedule delay plays a key role in overall project success.

Construction project delivery is affected by many factors. Every investor wants to be sure of the project time and cost. This is because challenges that may affect project completion have far reaching effects ultimately on the owners' interest. Chism and Armstrong,(2010) in the study carried out in USA aver that in the current economic landscape, project owners are scaling down or eliminating capital construction projects due to lack of financing, uncertainty over costs, and concerns about potential delays that could impact the feasibility basis of projects.

While in a study carried out in the UK Fapohunda and Stephenson (2010) stated that in construction, conflicts exist between the projects' stated objectives with regard to the appropriateness of cost time and quality. They also identify the distinct knowledge management areas for project managers' efficient performance to include among others project time management which includes providing an effective project schedule for project delivery besides actually delivering on the schedule. McNair, (2011) referring to the Australian context of applying EPC contract advances the importance of a contractor delivering a complete facility for a guaranteed price and by a guaranteed date. It must also perform to the specified level. He further observes that failure to achieve this will usually result to a contractor incurring monetary liabilities.

The subject of completion of projects is therefore a universal concern that affects all parties to a construction project. It is thus in the interest of the project management as an emerging profession to address all the factors that affect completion of construction projects. Indeed the idea of EPC contracts was conceived to partly transfer the risks involved in project implementation largely to the contractor charged with implementing it. The contractor usually has a limited ability to claim additional money which is limited to the circumstances where the project company has delayed the contractor or has ordered the variation of the works (McNair, 2011).

In a study carried out in Florida State, Ahmed *et al.* (2002) state that delays of construction projects are indeed a universal phenomenon. They are also most always accompanied by cost and time overruns. Construction project delays further have a

dilapidating effect on all parties (owner, contractor, and consultant). It is therefore correctly deduced that factors affecting construction project completion is a study of interest to all parties. This in agreement with Ahmed *et al*. (2002) who observed that project delays have been a topic of concern in the construction industry.

Hussin and Omran (2011) observed that in Malaysia, a major criticism facing the construction industry is the growing rate of delay in project delivery. They identify the conventional approach to managing the extra cost as to include the percentage of project cost as contingency in the pre-contract budget. In India, in a study about success factors for construction projects, Tabishil and Jha (2011) state that performance of Indian construction projects has not been very encouraging owing to time and cost overruns.

In Africa, delays in construction projects delivery are also a common reality. Hussin and Omran (2011) state that in Nigeria, seven out of ten projects surveyed suffered delays in their execution. They observed that in Nigeria 5-10% of construction pre-contract cost is based on contingency. This has been found inadequate which means extra financial commitments occasionally beyond the capacity of the owner. Clients are sometimes not prepared for this and so fund in terms of loans are sought to offset this additional costs.

Omran *et al.* (2012) argued that in Sudan, despite large number of reported cases, construction projects ranging from the simplest to more complex projects platforms have increasingly experienced cost overruns. This phenomenon is also similarly observed in Ghana where Gaba, (2013) observes that studies reveal increase in cost overruns, delayed completion, unsatisfactory and unmet project objectives in most construction projects. While investigating the subject of project delays in South Africa, Olatunji (2010) observed that it is a

phenomenon that can be attributed to the inability of the client/his representative and the project team to have a comprehensive view of the construction project from inception to completion.

In Kenya, building and construction industry has been robust (Kenya facts and Figures, Kenya National Bureau of Statistics, 2012). Foreign investors have shown a lot of keenness to have a stake in Kenya considered a business hub in east and central Africa and a center from which they can operate within Africa. As a result of this, Nairobi and its environs has witnessed a boom in construction projects. These projects are government, private individuals, private companies and international businesses and institutions sanctioned. Building and construction is quite central to creating numerous employment opportunities which would help in reducing the unemployment levels which are a problem in many countries Kenya included.

The Kenya Airports Authority is an autonomous body established in 1991 through an act of parliament and is charged with an umbrella responsibility of providing and managing a coordinated system of airports in the country. Prior to its formation, the former erstwhile Aerodromes Department under the Ministry of Transport and Communication handled this responsibility. Erstwhile was in charge of then Nairobi's Old Embakasi Airport which was constructed in the mid-1950 to serve the first generation Boeing 707/DC8 aircraft; Nairobi Embakasi Airport was opened in May 1958, by the last colonial Governor of Kenya, Sir Evelyn Baring, although the airport was due to be opened by Queen Elizabeth, The Queen Mother was delayed in Australia and could not make it to the ceremony.

The transport and infrastructure sector is expected to play a pivotal role in steering Kenya's economy towards a middle income levels envisaged in the

Vision 2030. KAA is tasked in the vision 2030 towards ensuring that Kenya becomes the aviation hub in the African region with an annual capacity of 45 million passengers by 2030. To achieve this, the MTP II targets the implementation of the following key projects: Construction of Green Field Terminal; Construction of terminal 1A departures at JKIA; Construction of terminal 1A arrivals at JKIA, Second runway and associated facilities at JKIA; Improvement of terminal and airside capacity at Kisumu International Airport; Rehabilitation of the existing runway at JKIA; Improvement of safety and support operations at Moi International Airport; and Rehabilitation and maintenance of Airstrips and Airports; Rehabilitation and new upgrading works on six airstrips namely Embu Airstrip involving - Fencing, Extension of Runway, Construction of Taxiway & Apron; Homabay Airstrip involving- Land acquisition, Fencing, Apron & Runway Rehabilitation; Lodwar Airstrip involving - Construction of Passenger Shed; Nanyuki Airstrip involving - Rehabilitation of Runway, apron & Car Park; and Suneka Airstrip involving- Mini VIP Lounge, Fencing & Minor runway repair.

Statement of the Problem

The problem of overruns in construction projects is an international phenomenon, although the situation varies from nations. The rate of variation is influenced by lots of factors based on general economy and construction environments in those nations. Overruns to construction projects could be multi-faceted ranging from cost, time and other factors. According to a research done by Flyvbjerg (2012) in global construction, it was found that 9 out of 10 projects had overruns.

Statistics reveals high overruns in construction projects globally and regionally. Chan *et al*, (2008) found out that seven eighths of the projects surveyed in Australia in the late 1960s indicated time overruns, in Hong Kong, 70%of the construction projects showed time overruns and seven out of ten projects in Nigeria suffered delays during their execution (Jagboro & Ogunsemi, 2006). In Tanzania, Kikwasi (2012) revealed that only 22%, 30% and 44% of the projects were completed on estimated time according to clients, consultants and contractors respectively while the maximum time overrun was 78%, 70% and 56% for clients, consultants and contractors respectively.

In Kenya, according to the Medium Term Expenditure Report, 67% of the civil works projects carried out by the Ministry of works, 39% of those projects experienced both cost and time overruns. This begs a question on what factors determine time overruns in construction projects. Kenya Airports Authority have in the recent past started several projects in different airports and airstrips in order to handle the many and different aircrafts that uses their facilities. The ever changing customers' needs and demands have also prompted the authority to tailor make their services to be customer centered. However, many projects have either fallen behind time or turned into white elephant. The completion rate of projects in KAA have not been on a good score, for example the construction of the second JKIA runway which stalled after 23% completion rate, the Greenfield terminal building at JKIA which stalled after 22.5% completion rate, construction of training academy at KAA HQ which was expected to complete in February 2016 but only 75% works completed to date, construction of terminal building(waiting shed)at Lodwar airstrip which was expected to take 9 months but completed 2 months behind schedule with an overrun in cost and many other projects which are or finished behind schedule(KAA project management department).

Studies conducted have demonstrated contextual knowledge gaps. A study by Munano (2012) for instance focused on the factors that influence timeliness of project completion for public sector in

Kenya and indicated high time overruns. Some of the reasons for delayed delivery include additional work, inadequate funding, delayed engagements of sub-contractors, delayed payment, to the contractor and slow decision making (MOPW, 2009). Most research work done globally and locally have dwelt on determinants of the timely completion of construction projection in different sectors but none of those have touched on the projects undertaken in the airports. A field serves the movement of resources in the countries, gateway to every country and a contributor to the improvement of the country's economy. It is against this backdrop that the study sought to assess the determinants of timely completion of construction projects at Kenya Airports Authority.

Objectives of the Study

The general objective of this study was to assess the determinants of timely completion of construction projects at Kenya Airports Authority. The specific objectives of the Study were:-

- To determine the effect of budgeting on timely completion of construction projects at Kenya Airports Authority
- To establish the effect of contract variation on timely completion of construction projects at Kenya Airports Authority
- To find out the effect of monitoring and evaluation on timely completion of construction projects at Kenya Airports Authority
- To examine the effect of staff competency on timely completion of construction projects at Kenya Airports Authority

LITERATURE REVIEW

Theoretical Review

Programme Theory

The theory was originally proposed by Bickman (1990). Many authors have since integrated different terms into discussions of program theory

development and the theory has gained interest in the monitoring and evaluation field in the recent past. Program theory consists of a set of statements that describe a particular program, explain why, how, and under what conditions the program effects occur, predict the outcomes of the program, and specify the requirements necessary to bring about the desired program effects. The initiation stage of project development is the fundamental prerequisite, once it has been established the program theory can be used to develop outcome of immediate goals. According to Prosavac and Carey (1997), this sequence of planning stages increases the chance of project success.

The theory informs the study as it will help in understanding how the application and use of programme theory is necessary when determining whether a construction project is succeeding or failing in the every aspect of its project life cycle. The theory describes the role of monitoring and evaluating when and where project improvements should be focused. It provides the basis for monitoring and evaluating of projects by specifying a logic model to the planners, staff members, people responsible for obtaining funding, and evaluators helping them to carry out their duties while explaining how public funds are being utilized. The theory clarifies the perspective of the project on which monitoring and evaluation of the construction project can be based for refining, controlling and improving the project.

Complexity Theory

The complexity theory as discussed by Curleeand Gordon, (2011) is based upon the management belief that total order does not allow for enough flexibility to address every possible situation. The complexity exists in projects. The complexity theory acknowledges that projects by nature have parts that work together as a system. Because of this, even though some people would be unhappy with

the changes; a lot of processes have to result from the changes.

Certain impediments have to be removed, certain procedures that would be unproductive have to be changed or modified. Complexity theory states that critically interacting components self-organize to form potentially evolving structures exhibiting a hierarchy of emergent system properties (Lucas, 2009). During project life cycle, many team members will be concerned about how the project will end. The project team is behind schedule, the challenge of delays and how the project will probably end over budget. This explains why changes in projects are likely to happen, hence relevant to the study as it addresses the issues of change which is in line with the contract variation variable.

Novelty, complexity, Technology and Pace (NTCP) "Diamond" Model Theory

Shenhar and Dvir (2007) suggested a more refine model consisting of novelty, complexity, technology, and pace – the NTCP "Diamond model. This goes to show that various frameworks and methodologies match to different projects and may lead to different project outcomes depending on their adoption, which will ultimately influence the success or failure of a project.

This theory provides a framework of analyzing and evaluating a project making it best suited project monitoring and evaluating. The diamond model helps in understanding the nature of projects, diagnose gaps between the current capabilities and what is needed to make the project a success. Shenhar and Dvir (2007) suggested using four bases to evaluate projects, to help employees understand the priorities and to take charge of projects in a more systematic and compelling way. Project monitoring and evaluation is about analyzing project progress implementation, identifying gaps, applying corrective measures and overall scanning

of the project to identify risks and mitigate them so that the project is on track. The diamond model theory is therefore used is project evaluation and monitoring. The success dimensions may change during the project lifecycle as new information is gathered and as the environment changes.

This theory is used to determine the actual structure of project compared with the present capabilities available at hand to execute the project. The difference between the two will show gaps that have to be filled to make project a success (Shenhar and Dvir,2007). This constitutes the objectives of project monitoring and evaluation which is the third independent variable in this study. With this theory, technological and complexity evaluation of projects is possible which is very suitable in this study since nature of the projects are technical and have complexity with different pace of implementation. Therefore the diamond model theory is used during project monitoring and evaluation of technical projects and is relevant to the study.
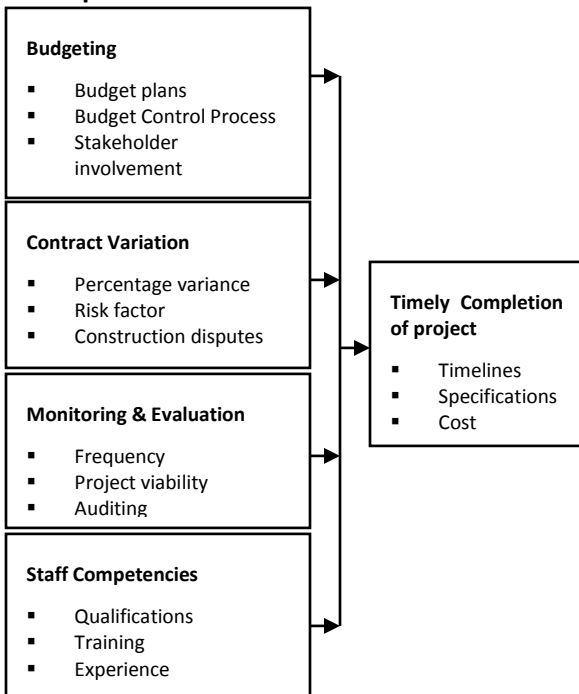
Project management competency theory

The competence theory was established by McClelland & McBer in the 1980s. They defined competency as the underlying characteristics of an individual that is causally related to criterion-referenced effective performance in a job or situation. Project management competence originates from widely held assumptions that if people who manage and work on projects are competent, they will perform effectively and this will lead to successful organizations (Beer, 1990; Smith, 1976). Competence is generally accepted as encompassing skills, knowledge, attitudes and behavior that are related to superior job performance. Crawford (as cited in Boyatzis, 1982 & Spencer, 1993) explained that professional competence in project management is attained by combination of knowledge acquired from training

and its subsequent application and other skills developed in the course of work.

Dainty, (2004) advocates for a competency based performance model for construction project managers where managerial behavior input is appraised and nine performance indicators for PM competency are developed. They entail decision-making, leadership, team building, mutuality and approachability, honesty and integrity, communication, learning, understanding and application, self-efficacy, and maintenance of external relations. This theory is relevant to the study as it links staff competency variable to timely completion of projects.

Conceptual Framework

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┌─────────────────────────────┐
│ Budgeting                   │
│                             │
│  ▪ Budget plans             │──┐
│  ▪ Budget Control Process   │  │
│  ▪ Stakeholder              │  │
│    involvement              │  │
└─────────────────────────────┘  │
                                  │
┌─────────────────────────────┐  │   ┌────────────────────┐
│ Contract Variation          │  │   │ Timely Completion  │
│                             │  ├──▶│ of project         │
│  ▪ Percentage variance      │  │   │                    │
│  ▪ Risk factor              │──┤   │  ▪ Timelines       │
│  ▪ Construction disputes    │  │   │  ▪ Specifications  │
└─────────────────────────────┘  │   │  ▪ Cost            │
                                  │   └────────────────────┘
┌─────────────────────────────┐  │
│ Monitoring & Evaluation     │  │
│                             │  │
│  ▪ Frequency                │──┤
│  ▪ Project viability        │  │
│  ▪ Auditing                 │  │
└─────────────────────────────┘  │
                                  │
┌─────────────────────────────┐  │
│ Staff Competencies          │  │
│                             │  │
│  ▪ Qualifications           │──┘
│  ▪ Training                 │
│  ▪ Experience               │
└─────────────────────────────┘
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Independent variables   Dependent variable

Figure 1: Conceptual Framework

Budgeting

A budget is defined as patterns of expenditure and revenue over the life of the project (Seaga, 2011). A professional and transparent approach to budget planning will help convince investors, development banks and national or international donors to make financial resources available (Philip,*et al.* 2008).When the project is in the initial planning stages, the expected costs should be estimated in order to begin developing an outline of what the overall expense will be. If project completion date has been frozen without arranging inputs and proper planning, this can lead to hasty and unsystematic work towards the end of the project. Failure to clearly comprehend the project, all its aspects can lead to works being executed erroneously and the attendant correctional steps to remedy the errors will cause project delay. The consequences are actually grave, ranging from litigation to claims and disputes, to outright abandonment of the project (Olatunji, 2010).

When a project delay can no longer be absorbed by the client, the project is abandoned. It helps then to predict and identify problems in the early stages of construction (Hussin &Omran, 2011). Planning stage is therefore the very key to success of construction project. "Delivery of materials on site will quite affect the project progress. If that supply does not ensure that quality materials are delivered on site then it will cause delay of project completion (Wambugu, 2013). This is because material not meeting the quality of design will most likely be rejected and the process of getting the right material will be taking more project implementation time.

Sambasivan and Soon, (2007) identify contractors improper planning as one of the causes of project delay. If a contractor fails to come up a workable work program at the initial stages, this will affect project timely completion. McMinimee *et. al*., (2012) stated that it was clear that investments in advance planning and project development paid off. Mojahed, (2009) states that proper planning in all phases and components of construction project are necessary to avoid re work which in turn leads to delay in project completion.

Contract variation

This can be defined as alterations or modification of design quality or quantity of the works as a result of instructions given by the consultants or client representatives that cause changes in cost of project or deviation from the contract sum (JBC, 1999). Such changes deviate from what was shown in the drawings, contract bills of quantities or specifications. JBC clause 30 states that no variance of over 15% causing 0.01% of contract price without client's approval. Variations are changes of opinion, facts, errors or omissions, alteration in scope of work.

Kakwezi (2012) defines contract management as those activities related to contract handling including invitation to and evaluation of bids, awarding and implementation of contracts, measurement, and payment calculation. This also entails monitoring contract associations, handling related issues, integrating essential contract modifications or changes. Uher and Davenport (2009) argue that contract management involves practical monitoring, management and review of terms of contract established through the process of procurement, ensuring delivery is done appropriately.

Contract management activities aim at ensuring that parties comply with the contractual terms and conditions, as well as documenting and accepting any necessary changes in the contract execution. A risk factor is a negative or positive impact on contract sum (Chism, N. & Armstrong, 2010) due to time and cost overruns. Ganiyu, and Zubairu, (2010) argue that construction risks are project specific and should thus be allocated to different parties.

Monitoring and Evaluation

Monitoring and evaluation (M&E) is a process that helps improve performance and achieve results. Its goal is to improve current and future management of outputs, outcomes and impact. Evaluation is a tool to help generate a sense of belonging, satisfaction and the knowledge that the abilities of the staff are used sufficiently; it influences motivation (Patll *et al.*, 2014). It is mainly used to assess the performance of projects, institutions and programs set up by governments, international organizations and NGOs. It establishes links between the past, present and future actions. The decision on how frequently a given indicator needs to be monitored depends on a careful assessment of the tradeoff between the desirability of recent data and the cost of collection, much like the decisions on which indicators to track and at what level of disaggregation.

Staff competencies

The concept of competency is usually applied to define the whole of individual abilities, skills, behaviours and knowledge, oriented to effective performance in a particular working environment (Bucur, 2013). By Armstrong (2012) abilities describe the dimensions of behaviour needed by companies to achieve a high performance. Micheli and Mari (2013) argue that competence is a characteristic trait of a person that is related to superior performance and a demonstration of particular talents in practice and application of knowledge required to perform a job.

A project may be well conceived and adequately financed, the resources may be specialists, and consultants may be highly experienced, but if the efforts of all the participants are not skillfully coordinated and managed, the project may overrun the budget, fail to meet the schedule, or fall short in functional and technical quality (Martinelli, 2014).During the evaluation of the performance, new targets are specified and the job description is updated. During the evaluation of competencies the evaluated employee is given specific information about the required competencies and the level which they reached. It is agreed how to develop the

particular competency and which level should be reached (Letmathe *et al.* 2012).

This forms the basis for creation of an individual development plan. Some issues of IDP refer to skills or behaviour, some to knowledge. Jenny (2008) draws attention to knowledge and the knowledge management. Firm with a KM capacity will use resources more efficiently and so will be more innovative and perform better. Wang and Wang (2012) alert that explicit knowledge sharing has more significant effects on innovation speed and financial performance while tacit knowledge sharing has to do more with innovation quality and operational performance.

Timely completion of construction projects

The construction contract agreement clearly stipulates contract duration (in the project schedule), it also defines the scope of project to be delivered (in the design drawings and specifications) and it also includes the project cost (in the Bills of Quantities). McNair (2011) states that key clauses in any construction contract are those that touch on time, cost and quality. Thornton (2008) advances the hypothesis that there exists an optimum contract duration for which the owner receives an optimum price. He further avers that if the facility is desired in less than optimum duration, the owner pays a premium for acceleration.

Construction contract duration is a key determinant as to whether the project will be delivered in a successful manner or it will not. The importance of the subject of delay in construction projects comes up because it throws in the crucial element of quality in construction projects as has been observed by many scholars (Dadzie, Abdul-Aziz and Kwame 2012). This is because among the many facets of quality of a product or service from the customers view is satisfaction to his expectations. When a project delays in its delivery then the

customers' expectations are not obviously met in terms of construction cost (Ayudhya, 2011).

Rugenyi (2015) asserts that the successful accomplishment of the project objective could be constrained by many factors, including scope, quality, schedule, budget, resources, risks, customer satisfaction, and stakeholder support (Gido & Clements, 2015). The triple constraint is a triangle of time, cost and performance that bounds the universe within which every project must be achieved (Dobson, 2004). Project managers must focus on three dimensions of success-completing all project deliverables on time, within budget and to the level of quality that is acceptable to sponsors and stakeholders (Greer, 2008).

Empirical Review

Budgeting

Stein (1997) demonstrates in his model that internal capital market will be most effective sort of financial arrangement for projects when external markets are underdeveloped where the sense of information and agency problem prevails, and the accounting and auditing technology and legal protection for investors are weak. A headquarter of a firm perform a winner-picking function on projects with strong control rights. Some projects related to the public sector may also have access to government subsidies and loans. For example, public private partnership projects are long-term contractual agreements between the public and the private sector to realize public infrastructure and services more cost effectively and efficiently than under conventional procurement, and are characterized by an optimized risk allocation and a holistic life cycle approach. Usually such projects are funded by project finance or non-recourse forfeiting of installments model (Daube *et al.,* 2008).

If the capital market is frictionless where information concerning the quality of the borrowing firms and the quality of the project is symmetric

between borrowers and lenders, projects with positive net present value (NPV) are always able to be funded because the project returns exceed the cost of capital. Financial intermediaries in the financial markets are specialized in collecting information about borrowers and projects, and they may be able to partially alleviate the information asymmetry by such interaction with borrowers, (Faulkender & Petersen, 2006). Such financial intermediaries, including banks, have some advantages over other lenders such as the debt capital markets by closely monitoring the projects and enforcing efficient project choice.

Nevertheless, the effort for monitoring by financial intermediaries incurs substantial costs which must be transferred back to the borrowers in the form of higher interest rates, implying that the cost of capital for firms in such an imperfect market depends not only on the risk of their projects, but also on the resources needed to verify the viability of their projects (Faulkender & Petersen, 2006).

Manove *et al.* (2001) compared the roles of collateral in lending for projects and project screening. On one hand, creditors can be protected by obtaining collateral from the borrowers, enabling more abundant and cheaper credit. On the other hand, due to the extensive experiences with similar projects in certain industries, and the expertise in the economic features and general economic trends, banks and other financial intermediaries tend to be more knowledgeable about some aspects of project quality and more capable of appraising the potential performance of the projects.

According to the evidence by Reid (1999) and Cooper *et al.*(1988), bank-financed firms have higher survival rates than firm funded by family investor, and entrepreneurs often overestimate the profitability of their own projects. Although collateral and project screening are substitutes from

the point of view of the banks, only the latter enhances the values of the projects from the society point of view, while the former one is just a form of wealth transfer from the borrowers to the banks.

Apart from internal capital and financial intermediaries, projects may obtain funding from arm's length capital markets, such as bonds markets and structured loans. Structured finance, such as asset securitization and project finance, is a means to separate an activity from the originating or sponsoring organization (Leland, 2007). Typically assets or project generating cash flows are placed in a bankruptcy-remote special purpose entity (SPE) which raises funds to compensate the sponsor by selling securities which are collateralized by the cash flows generated. Structured finance is claimed to benefit projects with low-risk cash flows by asset securitization, and projects with high-risk cash flows by separate financing.

Leland (2007) suggests that, instead of internally financed, large and risky investment projects can be financed separately as a spinoff or through project finance, which may result in greater total financing ability, cheaper financing for assets which remain in the firm, and preserving core firm assets from bankruptcy risk. Particularly, project finance may benefit the sponsor and the project by reducing information costs, incentive conflicts, cost of financial distress, and corporate tax (Esty, 2004).

Contract Variations

These can be defined as alterations or modification of design quality or quantity of the works as a result of instructions given by the consultants or client representatives that cause changes in cost of project or deviation from the contract sum (JBC, 1999). Such changes deviate from what was shown in the drawings, contract bills of quantities or specifications. A risk factor is a negative or positive impact on contract sum (Kartam & Kartam, 2001)

due to time and cost overruns. Franagan and Norman (2002) attest that once risk is identified, it becomes a management problem. Rahman and Kumaraswamy (2004) argue that construction risks are project specific and should thus be allocated to different parties.

Inflation is a rise in general level of prices of goods and services in an economy over a period of time. This leads to a reduced purchasing power, thus affecting cost of projects. Mwangi (2006) citing Aje and Jagboro (2003) says it's rare for building works not to have variations. This leads to time and cost overruns. This may lead to better product, or add no value or wasted money. Cost overruns according to JBC Clause 22 are stated as introductions, omission or addition. Mbatha (1986) states that quantity surveyors do not design, but are the cost and price specialists. They don't cost control, but cost monitor and report, whose data may be used for cost control. JBC clause 30 states that no variance of over 15% causing 0.01% of contract price without client's approval. Variations are changes of opinion, facts, errors or omissions, alteration in scope of work.

Fluctuations are defined as an increase or decrease in cost due to legislative or market forces over and above quoted price. This is only applicable on labour and material whose contract exceeds 12 months (JBC, 1999). This means that projects that do not exceed stated period do not qualify to claim for fluctuation or invoke this clause. This is a big risk to the contractor as the effect is borne by the contractor only. According to Talukhaba (1999), variations are introduction of changes on physical characteristics of project design and specifications as well as change of obligations or restrictions imposed by client.

The researcher found out the causes of variations as: inadequate brief, unsuitable design, design inconclusiveness, inadequate pre-contract planning, professional indiscipline of consultants, non-availability of materials and labour specified for works, unforeseen conditions, discrepancies between two or more contract documents and client's intentions. Variations are efficiency of project by implementing on site productivity and profitability to main contractor. Smith (1986) states methods of managing variations by devising appropriate, alternative procedure, negotiation and record. Smith (1986) proposed use of critical path method for resource scheduling technique. Waihenya (2011) citing Clough (1986) gives a proposal for change order-individual responsibility for variations and reasons for variations have proposed and approved changes clearly defined. Talukhaba (1999) time overruns blame on owners and contractor. Extra work means more time, omission variations mean you pay for labour and materials.

Monitoring and Evaluation

Monitoring and Evaluation is a combination of two processes which are different yet complementary (Gorgens & Kusek, 2009). It is therefore a process of systematically collecting and analyzing information of ongoing project and comparison of the project outcome/impact against the project intentions (Hunter, 2009). An M & E system, on the other hand is a set of components which are related to each other within a structure and serve a common purpose of tracking the implementation and results of a project (SAMDI, 2007).

It is therefore an integrated system of reflection and communication that support project implementation. An M&E system is made up of four interlinked sections, which are: setting up of the implementation of the M&E system, involvement of the project stakeholders, and communication of the M&E results (Guijt et al., 2002). Theoretically, 'an ideal M&E system should be independent enough to be externally credible and socially legitimate, but

not so independent to lose its relevance' (Briceno, 2010). It should therefore be able to influence policy making from recommendations of lessons learned as well as be sustainable overtime for it to be responsive to the needs of the stakeholders.

Monitoring and evaluation is an integral part of the project's design, implementation and completion (Chaplowe, 2008). It is useful to all projects, big or small, since information got from it enables better decision making by helping to identify project areas that are on target and those that need to be adjusted or replaced. Although different types of projects require different types of M&E systems, collection of data and information at all levels of the projects life cycle adds value to every stage of the project by ensuring project targets are met.

Weaknesses in the project are also identified on time and collective measures taken (Gorgens *et al.,* 2010). An effective M&E system also calls for the interaction between the employees, procedures, data, technology and key stakeholders, in order to ensure feasibility and ownership (Chaplowe, 2008). Although monitoring and evaluation are not of inherent value by themselves the information they provide is significant to improving performance (Mackay, 2010), which helps in learning from what/how we are doing or have done by focusing on efficiency, effectiveness, impact, relevance and sustainability (Hunter, 2009).

According to Kenya social protection sector review (2012), that focused on main programs in the social protection sector in Kenya, conducted through literature review, landscape survey and in-depth interviews with project implementers, not many programs in Kenya have a functional M&E systems, despite it being accredited for promoting transparency and accountability. From the programs reviewed 96% had developed some type of indicator framework for M&E, 91% conducted monitoring activities, 61% had a planned or ongoing

impact evaluation and 39% had no M&E reports for public consumption. This was attributed to programs not allocating the required resources at the design stage of the M&E system. According to the international benchmark, the M&E allocation should be 10% - 12% of the total programme cost; however most programs in Kenya were seen to allocate less than this.

There was also an inconsistency in the choice of performance indicators among the Kenyan programs which led to incoherent and incomprehensive M&E systems. Out of 88.1% of the Kenya safety net programs only 16.7% could provide a review team with a logical framework. The review also established that although M&E rarely influenced the decision making process, its information was being used to inform project and programme designs as well as inform policies. The review also notes that the country relies much on M&E international consultants and therefore recommends capacity building of national and progressive wean programme of civil servants (locals) because they will stay in the sector over the long term.

Staff Competencies

The concept of "competency" is a confusing term and particularly mixed up with "skill". It is mainly because different terms have often been used interchangeably. From the management perspective, competencies are defined by two main streams: organizational or personal /staff. Human Resource Management (HRM) literature focuses on the staff competencies. McClelland (1973) used the term as a symbol for an alternative approach to traditional intelligence testing. According to author, competence is a characteristic trait of a person that is related to superior performance and a demonstration of particular talents in practice and application of knowledge required to perform a job.

Boyatzis (2008) also analyzed staff competencies and defined competencies as an underlying characteristic of a person that could be a motive, trait, skill, aspect of one's self-image, social role, or a body of knowledge which he or she uses. These characteristics are revealed in observable and identifiable patterns of behavior, related to job performance or project completion and usually include knowledge, skill and abilities. In another definition, competencies are specified as a mean of 'being able to perform a work role to a defined standard with reference to real working environments. It is generally seen as "a cluster of related knowledge, skills, and attitudes that affects a major part of one's job / project (a role or responsibility), that correlates with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development" (Özçelik and Ferman, 2006). Dingle (1995), adds awareness to this definition.

According to Dingle, competence is a combination of knowledge, skill and awareness. In this definition, knowledge refers to the understanding of fundamental principles required to accomplish the task in hand, skill refers to the application of this understanding and awareness refers to the proper application of skill, in accordance with professional and corporate "good practice". For the last few decades, competencies are often used for the basis of performance appraisal (Cardy & Selvarajan, 2006). The competencies, as a measurement tool, identify behavioral factors relevant to performance in the job and viewed as how the job is carried out.

Hence many organizations use competency models as a part of their employee development program to appraise behavioral performance indicators together with objectives. Accordingly, many scholars (Ryan, *et.al.,* 2009) have claimed that assessment of employees' competencies provide an effective method for predicting job performance. There is a variety of research that clarifies the relationship between competencies and employees' job (task) performance (Ryan, *et.al*, 2009). Findings of Ahadzie *et.al* (2009) study demonstrates the suitability and potential usefulness of their competency-based model that reflects elements of both performance behaviors and outcomes in predicting the performance. Similarly, there are other research (Spencer, *et.al* 2008) highlighting the validity and utility of competencies in predicting employees' work performance.

Furthermore, there are studies that indicate the effects of certain competencies on individual job performance. For example Qiao and Wang, (2009) suggest that team-building, communication; coordination, execution and continual learning are critical competencies for the success of middle managers in China. Likewise, there are empirical evidences indicating the relationship between competencies such as HRM (Fleury and Fleury 2005; Liu, et.al, 2005; Collings, et.al 2010, Anwar, et.al, 2012), leadership (Clark and Armit, 2010; Asree, et. al, 2010; Pereira and Gomez, 2012).The relationship between individual competencies and organizational performance is also stated. However, there are less empirical evidences found in this issue (Levenson, et.al, 2006, Ryan, et.al. 2009; Gammie and Joyce, 2009).

On the other side, despite the increasing tendency in using competency models, there are still some confusion and skepticism about the relation between competencies and performance. These are mainly because of the difficulties in assessment of competencies (Currie and Darby, 1995) and the complex and lengthy process required for identifying the appropriate competency performance relationship (Vakola, et. al., 2007). In addition to that organizational performance has many dimensions, yet it is not easy to connect individual competencies to organizational performance (Liu, et. al., 2005; Vakola et.al. 2007).

Timely Completion of Projects

Dividing a project into phases makes it possible to lead it in the best possible direction. Through this organization into phases, the total work load of a project is divided into smaller components, thus making it easier to monitor. The initiation phase is the beginning of the project. In this phase, the idea for the project is explored and elaborated. The goal of this phase is to examine the feasibility of the project. In addition, decisions are made concerning who is to carry out the project, which party (or parties) will be involved and whether the project has an adequate base of support among those who are involved, the current or prospective project leader writes a proposal, which contains a description of the above-mentioned matters. The prospective sponsors of the project evaluate the proposal and, upon approval, provide the necessary financing. The project officially begins at the time of approval, (Wideman, 2001).

Although project delivery process does not have a stage called funding, budgetary constraints affect each stage of the process (Sullivan & Mayer, 2010). The Right of Way to a project is not identified by a project that only fulfills the environmental process, only for the policy makers to disagree with the chosen source of funding. Mansfield et al (1994) reviewed the correlation between cost overruns and project delays and realized that a good agreement exists between the two factors. The ability to say no is an important quality in a project leader. Projects tend to expand once people have become excited about them. The underlying thought is, we might as well have Projects to which people keep adding objectives and projects that keep expanding are nearly certain to go off schedule, and they are unlikely to achieve their original goals(Sullivan & Mayer, 2010).

The project partners enter a (temporary) relationship with each other. To prevent the development of false expectations concerning the results of the project, it makes sense to explicitly agree on the type of project that is being started. The choice for a particular type of project largely determines its results. For example, a research and development project delivers a report that examines the technological feasibility of an application. A project in which a prototype is developed delivers all of the functionalities of an application, but they need not be suitable for use in a particular context Ireri G.K, (2008). A project that delivers a working product must also consider matters of maintenance, instructions and the operational management of the application. Many misunderstandings and conflicts arise because the parties that are involved in a project are not clear on these matters. Customers may expect a working product, while the members of the project team think they are developing a prototype.

A sponsor may think that the project will produce a working piece of software, while the members of the project team must first examine whether the idea itself is technically feasible. After the project plan; which was developed in the initiation phase has been approved, the project enters the second phase: the definition phase. In this phase, the requirements that are associated with a project result are specified as clearly as possible. This involves identifying the expectations that all of the involved parties have with regard to the project result. It is important to identify the requirements as early in the process as possible. Wijnen (2004) distinguishes several categories of project requirements that can serve as a memory aid: Preconditions, functional requirements, operational requirements and design limitations. Preconditions form the context within which the project must be conducted, include legislation, working-condition regulations and approval requirements.

These requirements cannot be influenced from within the project (Strenman, 2012). Functional

requirements are requirements that have to do with the quality of the project result. Operational requirements involve the use of the project result; the number of malfunctions that occur must be reduced by ninety per cent. Finally, design is very important that all parties that are involved in the project are able to collaborate during the end users who will be using the project result. The fact that end users are often not the ones that order the project perhaps explains why they are often ignored, (Ireri, 2008). The client, who pays for the project, is indeed invited to collaborate on the requirements. Nonetheless, the project result benefits when its future users are also invited. As a point of departure, it is helpful to make a habit of organizing meetings with all concerned parties during the definition phase of a project.

Every requirement obviously has a reverse side. The more elaborate the project becomes, the more time and money it will cost (Sullivan & Mayer, 2010). In addition, some requirements may conflict with others. New copy machines are supposed to have less environmental impact; they must also meet requirements for fire safety. The fire-safety regulations require the use of flame-retardant materials, which are less environmentally friendly (Ireri, 2008).

Ultimately, a list of definitive requirements is developed and presented for the approval of the projects decision-makers. Once the list has been approved, the design phase can begin. At the close, most of the agreements between the customer and the project team have been established. The list of requirements specifies the guidelines that the project must adhere to. The project team is evaluated according to this list. After the definition phase, therefore, the customer can add no new requirements.

During the development, everything that will be needed to implement the project is arranged.

Potential suppliers or subcontractors are brought in, a schedule is made, materials and tools are ordered, and instructions are given to the personnel and so forth. The development phase is complete when implementation is ready to start. All matters must be clear for the parties that will carry out the implementation. In some projects, particularly smaller ones, a formal development phase is probably not necessary. The important point is that it must be clear what must be done in the implementation phase, by whom and when (Mbatha, 1986).

The project takes shape during the implementation phase. This phase involves the construction of the actual project result. Programmers are occupied with encoding, designers are involved in developing graphic material, contractors are building, and the actual reorganization takes place. It is during this phase that the project becomes visible to outsiders, to whom it may appear that the project has just begun. The implementation is the doing, and it is important to maintain the momentum (Achieng, 2005).

At the end, the result is evaluated according to the list of requirements that was created in the definition phase. It is also evaluated according to the designs. It may be determined whether the trim on the building has been made according to the agreement, or whether the materials that were used were indeed those that had been specified in the definition phase. This phase is complete when all of the requirements have been met and when the result corresponds to the design.

Those who are involved in a project should keep in mind that it is hardly ever possible to achieve a project result that precisely meets all of the requirements that were originally specified in the definition phase. Unexpected events or advancing insight sometimes require a project team to deviate from the original list of requirements or other

design documents during the implementation of the project.

METHODOLGY

The study used a descriptive survey design to conduct the research. The following study multivariate linear regression model will be tested.

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

Where:

Y is the dependent variable (Timely completion of construction projects)

X_1 is Budgeting

X_2 is Contract variation

X_3 is Monitoring and evaluation

X_4 is Staff competency

β_0 is the regression constant or intercept,

β_1, β_2, β_3, and β_4 are the unknown parameters (regression coefficients)

ε is the error term,

FINDINGS AND DISCUSSIONS

Descriptive Findings and Analysis

Budgeting

The study sought to establish whether KAA has long term and short term budget plans for their construction projects, whether the project team members were sensitized on the budget control process and whether all the stakeholders to the budget were involved in the budgeting process. The findings revealed that majority, 64%, agreed that KAA had long term and short term budget plans for their construction projects, 56% agreed that the project team members were sensitized on the budget control process while 59% agreed that all the stakeholders to the budget are involved in the

budgeting process. The findings implied that there was better project budgeting process at KAA.

The study also sought to examine the extent to which the respondents agreed or disagreed with statements on budgeting on a Likert scale where 1= strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly Agree. The results of the study were as shown in table 1.

The findings of the study revealed that on average the respondents agreed that projects funded by international organization don't experience financing challenges (Mean = 3.60). The findings of the study also showed that on average respondents agreed that projects funded by the Government have financing challenges (Mean = 4.15). Moreover, the results of the study indicated that on average the respondents agreed that projects funded by the implementing agency experience funding issues (Mean = 3.95). In addition, the results of the study showed that on average, the respondents agreed that funding is the life blood of any project (Mean = 4.32). Lastly, the results of the study indicated that on average the respondents agreed that timely disbursement of funds determines its timely completion (Mean = 3.75). Overall, the respondents agreed on statements of budgeting and reiterated the importance of having budget plans, budget control process and stakeholder involvement in budgeting process (Overall Mean = 3.95).

The findings of the study were consistent with the results of a study by Leland (2007) suggests that, instead of internally financed, large and risky investment projects can be financed separately as a spinoff or through project finance, which may result in greater total financing ability, cheaper financing for assets which remain in the firm, and preserving core firm assets from bankruptcy risk.

Table 1: Budgeting

Statements	Mean	Std Dev

Projects funded by international organization don't experience financing challenges	3.60	1.06
Projects funded by the Government have financing challenges	4.15	0.97
Projects funded by the implementing agency experience funding issues	3.95	0.98
Funding is the life blood of any project	4.32	0.86
Timely disbursement of funds determines its timely completion	3.73	1.02
Average	**3.95**	**0.98**

Contract Variation

The study sought to establish the percentage to which project contracts at KAA had been varied. The study revealed that majority of the respondents, 54%, agreed that the project contracts had been varied up to the tune of between 3 to 10% while 39% of the respondents revealed up to the tune of 3%. The findings imply that there is less frequency in project contract variation at KAA. The same tends to conform to the JBC (1999) clause 30 which prohibits contract variation above 15%.

The study also sought to determine the extent to which the respondents agreed or disagreed with the statements on contract variation on a Likert scale where 1= strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly Agree. The results of the study were as shown in table 2.

The results of the study revealed that on average, the respondents were neutral on the statement that contract variation is a risk factor in project management at KAA (Mean=3.13). The findings of the study also showed that on average, the respondents agreed that contract variation leads to construction disputes, thus increasing project volatility at KAA (Mean = 4.05). Moreover, the results of the study indicated that on average, the respondents agreed high percentage variance in contracts affects timely completion of projects (Mean = 4.18). Furthermore, the results of the study showed that on average, the respondents agreed that alterations of project designs quality affects project time scope (Mean = 4.17). Finally, the results of the study indicated that on average, most of the respondents agreed that modifications of project designs quantity affects project time scope (Mean = 4.08).

Overall, the findings of the study showed that on average there was agreement that contract variation indicators such as percentage variance, risk factor and construction disputes affects timely delivery of construction projects at KAA (Overall Mean = 3.92). The findings are of the study are consistent with the results of a study by Rahman and Kumaraswamy (2004) who argue that construction risks are project specific and should thus be allocated to different parties.

Table 2: Contract Variation

Statements	Mean	Std Dev
Contract variation is a risk factor in project management	3.13	1.57
Contract variation leads to construction disputes, thus increase project volatility	4.05	0.99
High percentage variance in contracts affects timely completion of projects	4.18	0.90
Alterations of project designs quality affects project time scope	4.17	0.83
Modifications of project designs quantity affects project time scope	4.08	0.88

	Mean	Std Dev
Average	**3.92**	**1.03**

Monitoring and Evaluation

The study sought to establish the frequency of construction projects monitoring and reporting at KAA as either daily, weekly, fortnight, monthly, quarterly or annually. The findings showed that majority of the KAA projects, 51%, are monitored and evaluated on a monthly basis, 12% are monitored and evaluated on a fortnight basis while 21% of the projects are monitored and evaluated on a quarterly basis. The findings implied consistency of monitoring and evaluation of construction projects at KAA.

The study also sought to determine the extent to which the respondents agreed or disagreed with the statements on monitoring and evaluation on a Likert scale where 1= strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly Agree. The results of the study were as shown in table 3.

The findings of the study revealed that on average, the respondents agreed that independent monitoring & evaluation is important for project viability (Mean = 4.45). The findings of the study also showed that on average, the respondents agreed that auditing of ongoing project can assist the M & E systems in bringing more light on the scheduled goals of the project (Mean = 3.52). Moreover, the results of the study indicated that on average, the respondents agreed that frequency of project monitoring and evaluation affects ultimate quality of the projects (Mean = 4.29).

In addition, the results of the study showed that on average, the respondents agreed that stakeholder involvement in monitoring and evaluation is key to its success (Mean = 4.31). Lastly, the results of the study indicated that on average, majority of the respondents agreed that there is a need to develop performance evaluation targets to guide the process of M & E (Mean = 4.38).

Overall, the findings of the study showed that on average there was agreement that monitoring and evaluation indicators such as frequency of monitoring and evaluating, monitoring of project viability and performance auditing influence performance of construction at KAA (Overall Mean = 4.19). The findings of the study are consistent with the results of a study by Briceno (2010) who posited that an ideal M&E system should be independent enough to be externally credible and socially legitimate, but not so independent to lose its relevance'.

Table 3: Monitoring and Evaluation

Statements	Mean	Std Dev
Independent monitoring & evaluation is important for project viability	4.45	0.91
Auditing of ongoing project can assist the M & E systems in bringing more light on the scheduled goals of the project	3.52	1.28
Frequency of project monitoring and evaluation affects ultimate quality of the projects	4.29	1.18
Stakeholder involvement in monitoring and evaluation is key to its success	4.31	1.08
There is a need to develop performance evaluation targets to guide the process of M & E	4.38	1.02
Average	**4.19**	**1.09**

Staff Competencies

The study sought to establish the frequency of training the team managing projects at KAA. The frequency was placed at once a year, twice a year, thrice a year or more than 3 times a year. The findings revealed that majority, 67%, indicated training thrice a year while 12% of the respondents agreed that training was conducted twice a year. The findings implied that there was training of project team members at KAA to enhance their competence to effectively manage projects.

The study also sought to determine the extent to which the respondents agreed or disagreed with the statements on staff competencies on a Likert scale where 1= strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly Agree. The results of the study were as shown in table 4.

The findings of the study revealed that on average, the respondents agreed that staff managing KAA projects have the necessary qualifications (Mean = 3.96). The findings of the study also showed that on average, the respondents agreed that staff managing KAA projects are trained regularly on

project management concepts (Mean = 4.12). Moreover, the results of the study indicated that on average, the respondents agreed that staff managing KAA projects have enough experience to enhance project delivery on time (Mean = 3.62). Furthermore, the results of the study showed that on average, the respondents agreed that staff managing KAA projects have enough professional competence required for the job (Mean = 3.88). Lastly, the results of the study indicated that on average, the respondents agreed that staff managing KAA projects have enough skills required for the job (Mean = 3.76).

Overall, the findings of the study showed that on average there was agreement that staff competency in terms of experience, skills, education level and qualifications influence performance of construction at KAA (Overall Mean = 3.87). The findings are of the study are consistent with the results of a study by Qiao and Wang, (2009) who suggested that team-building, communication; coordination, execution and continual learning are critical competencies for the success of middle managers in China.

Table 4: Staff Competencies

Statements	Mean	Std Dev
Staff managing KAA projects have the necessary qualifications	3.96	1.33
Staff managing KAA projects are trained regularly on project management concepts	4.12	1.20
Staff managing KAA projects have enough experience to enhance project delivery on time	3.62	1.29
Staff managing KAA projects have enough professional competence required for the job	3.88	1.25
Staff managing KAA projects have enough skills required for the job	3.76	1.31
Average	**3.87**	**1.28**

Timely Completion of Construction Projects

The study sought to establish the extent to which cost, time and scope affected the project in realizing timely completion as initially planned. The findings

revealed that scope, cost and time affected the project in realizing timely completion as initially planned as shown by 72%, 67% and 74% agreement levels. The findings imply that there is need to focus

more on these indicators of project performance at KAA.

The study further sought to determine the extent to which the respondents agreed or disagreed with the statements relating to the variables affecting the timely completion of projects on a five point likert scale where 1= strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly Agree. The results of the study are as shown in table 5.

The results of the study showed that on average, the respondents agreed that project budgeting affect timely delivery of the project (Mean = 3.86). The findings of the study also revealed that on average, the respondents neither agreed nor disagreed with the statement that contract variation affect timely delivery of the project (Mean

= 3.46). Moreover, the results of the study indicated that the respondents agreed that monitoring and evaluation affect timely delivery of the project (Mean = 3.78). Additionally, the results of the study showed that on average, the respondents agreed that staff competencies capabilities affect timely delivery of the project (Mean = 3.83). Overall, there was an agreement with the statement that project budgeting, contract variation, Monitoring & evaluation and staff competencies affect timely delivery of the project (Overall Mean = 3.73). The findings of the study are consistent with the results of a study by Rugenyi (2015) who asserted that the successful accomplishment of the project objective could be constrained by many factors, including scope, quality, schedule, budget, resources, risks, customer satisfaction, and stakeholder support.

Table 5: Timely Completion of Construction Projects

Statements	Mean	Std Dev
Project budgeting affect timely delivery of the project	3.86	1.34
Contract variation affect timely delivery of the project	3.46	1.30
Monitoring & evaluation affect timely delivery of the project	3.78	1.36
Staff competencies capabilities affect timely delivery of the project	3.83	1.21
Average	**3.73**	**1.30**

The study also sought to determine the trend results for the number of completed projects on time by between the years 2011 to 2015. The findings revealed that there was a sharp increase in the number of completed projects between 2011 and 2012 from 15 to 17 and the same rose higher to 18 in the year 2013. But the number of completed projects dropped sharply in the year 2013 to 14. The figure remained below 18 projects up to the year 2016.

Inferential Analysis Results

In order to establish the determinants of timely completion of construction projects at the Kenya Airports Authority, correlation and regression

analysis was conducted. The study specifically focused on budgeting, contract variation, monitoring and evaluation and staff competency as the main determinants. A correlation analysis was used to reveal the association while a regression analysis was used to reveal both the direction and magnitude of the relationship.

Correlation Results

The study carried out correlation tests to determine the association involving budgeting, contract variation, monitoring and evaluation and staff competencies with timely completion of construction projects. Pearson correlation which ranges between -1 and +1 was used because the

data was discreet. A positive Pearson correlation value indicates a positive correlation while any negative Pearson correlation value indicates a negative relationship. The association between the variables becomes stronger as the Pearson correlation value approaches either +1 or -1. The results of the correlation analysis are shown in table 6.

The findings of the study revealed that there was a positive and significant correlation between budgeting and the timely completion of construction projects at KAA as shown by a Pearson coefficient of 0.492 and significance level of 0.000. The findings imply that an increase in budgeting indicators such as having budget plans, budget control process and stakeholder involvement in budgeting process influences performance of construction projects at KAA positively and significantly. The study findings are consistent with the results of a study by Leland (2007) suggests that, instead of internally financed, large and risky investment projects can be financed separately as a spinoff or through project finance, which may result in greater total financing ability, cheaper financing for assets which remain in the firm, and preserving core firm assets from bankruptcy risk.

The results of the study indicated that monitoring and evaluation had a positive and significant association with timely completion of construction projects at KAA as shown by a Pearson coefficient of 0.404 and significance level of 0.000. This implies that an increase in monitoring and evaluation indicators such as frequency of monitoring and evaluating, monitoring of project viability and performance auditing influence performance of

construction projects at KAA positively and significantly. The study findings are consistent with the findings of a study by Briceno (2010) who posited that an ideal M&E system should be independent enough to be externally credible and socially legitimate, but not so independent to lose its relevance'.

Furthermore, the results of the study showed that there was a negative and significant correlation between contract variation and the timely completion of construction projects at KAA as shown by a Pearson coefficient of -0.336 and significance level of 0.001. This implies that an increase in contract variation indicators such as percentage variance, risk factor and construction disputes affects timely delivery of construction projects at KAA negatively and significantly. The study findings agree with the results of a study by Rahman and Kumaraswamy (2004) who argue that construction risks are project specific and should thus be allocated to different parties.

Lastly, the results showed that there was a positive and significant correlation between staff competencies and the timely completion of construction projects at KAA as shown by a pearson correlation value of 0.459 and a significance level of 0.000. This implies that high staff competency in terms of experience; skills, education level and qualifications influence performance of construction at KAA positively and significantly. The findings are consistent with the results of a study by Spencer *et.al* (2008) that highlighted the validity and utility of competencies in predicting employees' work performance.

Table 6: Correlation Results

Correlations		Budgeting	Monitoring	Contract variation	Staff Competency	Timely Completion
Budgeting	Pearson Correlation	1				

Monitoring	Pearson Correlation	.273**	1		
	Sig. (2-tailed)	0.008			
Contract Variation	Pearson Correlation	-0.115	-0.133	1	
	Sig. (2-tailed)	0.271	0.202		
Staff Competency	Pearson Correlation	.454**	.446**	-0.03	1
	Sig. (2-tailed)	0.000	0.000	0.773	
Timely Completion	Pearson Correlation	.492**	.404**	-.336**	.459**	1
	Sig. (2-tailed)	0.000	0.000	0.001	0.000	
	N	93	93	93	93	93

** Correlation is significant at the 0.01 level (2-tailed).

Regression Results

The study used a multiple linear regression model to assess the determinants of timely completion of construction projects at Kenya Airports Authority. The overall regression model of the study was $Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_{3+} + \beta_4 X_4 + \varepsilon$ Where; Y= timely completion of construction projects, X_1 = budgeting, X_2= contract variation, X_3 = monitoring and evaluation, X_4= staff competencies, and ε = Error term. The results for model summary are presented in Table 7.

The study findings revealed that budgeting, contract variation, monitoring and evaluation and staff competencies all accounts for 42.1% of the variation in timely completion of construction projects at KAA. This is shown by an R-square value of 0.421. The regression results show that R was 0.649 which shows that the correlation between the independent variables and the dependent variable was positive.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.649	0.421	0.394	0.608282

Predictors: (Constant), staff competency, Contract variation, Monitoring, Budgeting

The results of the study also showed that the overall regression model linking budgeting, staff competencies, contract variation and monitoring and evaluation with timely completion of construction projects at KAA was significant as indicated by a significant F (4,88) statistic as indicated by (0.000) significance level which was

less than 0.05 at 5% level of significance. F calculated is 15.972 while F critical is 2.475. F calculated is greater than the F critical (15.972>2.375), this showed that the overall model was statistically significant at 5% significance level. The results of the study are as shown in table 8.

Table 8: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	23.639	4	5.91	15.972	.000
	Residual	32.561	88	0.37		
	Total	56.2	92			

Dependent Variable: Timely completion

Predictors: (Constant), staff competency, Contract variation, Monitoring, Budgeting

The summary of the findings regression analysis are as shown in table 8 above. The results of the study indicated that budgeting had a positive and significant effect on timely completion of construction projects at KAA (β= 0.370, Sig= 0.001). This implies that a one unit improvement in budgeting leads to 0.370 unit increases in timely completion of construction projects at KAA. The findings agree with the findings of a study by Leland (2007) suggests that, instead of internally financed, large and risky investment projects can be financed separately as a spinoff or through project finance, which may result in greater total financing ability, cheaper financing for assets which remain in the firm, and preserving core firm assets from bankruptcy risk.

Moreover, the findings of the study also indicate that monitoring and evaluation had a positive and significant effect on timely completion of construction projects at KAA (β = 0.197, Sig = 0.050). This implies that a one unit improvement in monitoring and evaluation leads to a 0.197 unit increase in timely completion of construction projects at KAA. The findings agree with the findings of a study by Briceno (2010) who posited that an ideal M&E system should be independent enough to be externally credible and socially legitimate, but not so independent to lose its relevance'.

In addition, the findings of the study also revealed that contract variation had a negative and significant effect on timely completion of construction projects at KAA (β = -0.403, Sig = 0.002). This implies that a one unit increase in contract variation leads to 0.403 unit decrease in timely completion of construction projects at KAA. The findings agree with the findings of a study by Waihenya (2011) who gives a proposal for change order-individual responsibility for variations and reasons for variations have proposed and approved changes clearly defined.

Finally, the findings of the study also showed that staff competencies had a positive and significant effect on timely completion of construction projects at KAA (β = 0.275, Sig = 0.022). This implies that a one unit improvement in staff competence through training leads to 0.275 unit increase in timely completion of construction projects at KAA. The findings agree with the findings of a study by Ahadzie *et.al* (2009) which demonstrated that the suitability and potential usefulness of their competency-based model that reflects elements of both performance behaviors and outcomes in predicting the performance.

Table 9: Regression coefficients

Type of coefficients	Unstandardized Coefficients		Standardized Coefficients		
Predictor Variables	B	Std. Error	Beta	t	Sig.
(Constant)	2.226	0.671		3.317	0.001
Budgeting	0.370	0.111	0.306	3.332	0.001
Monitoring	0.197	0.099	0.182	1.985	0.050
Contract Variation	-0.403	0.123	-0.269	-3.270	0.002

staff competency	0.275	0.117	0.231	2.340	0.022

Dependent Variable: Timely Completion of Construction Projects

Thus the optimal multivariate Regression Model for the study is as indicated below;

Timely Completion of Construction Projects at KAA = 2.226 + 0.370 Budgeting + 0.197 Monitoring and Evaluation - 0.403 Contract Variation + 0.275 Staff competencies.

CONCLUSION AND RECOMMENDATIONS

The study revealed that there was a positive and significant correlation between budgeting and timely completion of construction projects at KAA. The regression results revealed that budgeting influences timely completion of construction projects at KAA positively and significantly. These findings imply that an increase in budgeting indicators such as having budget plans, budget control process and stakeholder involvement in budgeting process influences performance of construction projects at KAA positively and significantly.

The results of the study indicated that there was a negative and significant correlation between contract variation and timely completion of construction projects at KAA. The regression results revealed that contract variation negatively and significantly influences timely completion of construction projects at KAA. This implies that an increase in contract variation indicators such as percentage variance, risk factor and construction disputes affects timely delivery of construction projects at KAA negatively and significantly.

The findings of the study indicated that there was a positive and significant association between monitoring and evaluation and timely completion of construction projects at KAA. The regression results indicated that monitoring and evaluation positively and significantly influences timely completion of construction projects at KAA. This implies that an increase in monitoring and evaluation indicators

such as frequency of monitoring and evaluating, monitoring of project viability and performance auditing influence performance of construction projects at KAA positively and significantly.

The findings indicated that there was a positive and significant association between staff competencies and timely completion of construction projects at KAA. The regression results revealed that staff competencies positively and significantly influences timely completion of construction projects at KAA. This implies that high staff competency in terms of experience; skills, education level and qualifications influence performance of construction at KAA positively and significantly.

Conclusion

The study concluded that budgeting practices such as having budget plans, budget control process and stakeholder involvement in budgeting process influences performance of construction projects at KAA positively and significantly. The study findings also led to the conclusion that an increase in contract variation indicators such as percentage variance, risk factor and construction disputes affects timely delivery of construction projects at KAA negatively and significantly.

The findings of the study further led to the conclusion that an increase in monitoring and evaluation indicators such as frequency of monitoring and evaluating, monitoring of project viability and performance auditing influence performance of construction at KAA positively and significantly. Furthermore, it was concluded that high staff competency in terms of experience; skills, education level and qualifications influence performance of construction projects at KAA positively and significantly.

Recommendations of the Study

The study recommended that KAA should come up with budgeting procedures which aims to enhance the performance of construction projects such as introduction of budget plans, budget control processes and stakeholder involvement in budgeting process. There is also a need for KAA to involve all the stakeholders involved in project management to reduce contract variation. The management should come up with specific policies that prevent adjustment of the quantity, quality and scope of construction projects by over 15%.

The findings of the study also led to the recommendations that KAA should enhance monitoring and evaluation of construction projects by enhancing the monitoring of project viability and increasing performance auditing since it influences performance of construction projects at KAA positively and significantly. Furthermore, there is a need to establish training programmes to enhance the competence of the project team. There is also a need to recruit based on experience, education level and skills.

Areas for Further Research

The study recommended future studies to look at other factors that influence timely completion of construction projects at KAA since budgeting, contract variation, staff competencies and monitoring and evaluation only account for only 42.1% of the variation in timely completion of construction projects at KAA. Further studies should also be carried out to establish the factors that influence timely completion of construction projects in other sectors in Kenya.

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