

**FACTORS INFLUENCING COMPLETION OF CONSTRUCTION
PROJECTS IN PUBLIC SECONDARY SCHOOLS IN BOMET
EAST SUB-COUNTY, BOMET COUNTY, KENYA**

BY

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DECLARATION

This research report is my original work and has not been presented to any other University for any award.

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DEDICATION

To my family who have been a pillar of strength, always encouraging me to cruise on

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LIST OF ABBREVIATIONS AND ACRONYMS

CSOs:	Civil Society Organizations
FBOs:	Faith Based Organizations
IFIs:	International Financial Institutions
KIWASCO:	Kisumu Water and Sewage Company
KWAHO:	Kenya Water for Health Organization
M&E:	Monitoring & Evaluation
NACOSTI:	National Council of Science and Technology Innovation
NGOs:	Non-Governmental Organization
PM&E:	Participatory monitoring and evaluation
RWSSP:	Rural Water Supply and Sanitation Project
WASH:	Water and Sanitation on Health

ABSTRACT

Maintaining steady completion of construction projects in public secondary schools have been an issue of serious concern both to the education stakeholders and contractors. Therefore, there have been numerous cases of delays and non-completion of projects which have contributed to irreparable loss to education stakeholders and to the economy as whole. However, there has been no particular research to address the problem of completion of construction projects in public secondary schools which has been so rampant. The purpose of the study was to evaluate the factors influencing the completion of construction projects in public secondary schools in Bomet Sub-County. The study was guided by the following research objectives; to establish the extent to which funding influences the completion of the construction projects in Secondary Schools in Bomet East Sub-County; to determine if management and leadership support influences completion of construction projects in Secondary schools in Bomet East Sub-County and to establish the influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County. The study employed a descriptive study design with qualitative and quantitative methodologies used in data collection. Using saturation sampling technique, all the 36 public secondary schools hence 36 school principals, 36 PTA chair persons, and 36 BOGs chairpersons was targeted as respondents of the study. School principals were administered with questionnaire for quantitative data, while PTA chairmen and BOG chairpersons were interviewed using interview guides for qualitative data. Quantitative data were analyzed by both descriptive and inferential statistics such as Bivariate Pearson Correlation test, while qualitative data was analyzed thematically through content analysis. According to the major findings this study, there was relationship between funding and completion rate of construction projects with ($r=0.77, P < 0.05$). Where inadequate funding, procurement bureaucracy, source of funding and misappropriations of project funds was found to lead to delay in construction completion of projects. The study also found that there was statistically significant and positive relationship between project management and leadership skills and completion rate of construction projects with ($r=0.68, P < 0.05$). The study found that good leadership of the project team was found to enhance proper and quick project completion, poor knowledge of project management crippled project completion and supervision during construction is critical to ensure quality products and timely delivery of project. The study findings also showed that involvement of stakeholders such as the PTA, BOG, students, and the ministry in construction projects has an influence on its completion, through their level of involvement and way on involvement. As a recommendation, the government should design policies that govern the construction of projects in the learning institutions that allows for proper engagement of the major stakeholders, procurement process, sourcing of finance and engagement of the constructors in the construction of projects in public learning institutions to ensure successful completion of the projects. Head teachers and principals of public secondary and primary schools should be trained on project management to increase their skills in supervision and management of construction projects to enhance completion rate of these projects. Stakeholders such as PTA, students, and BOG members should be enlightened on the best way to involve themselves in the project and the extent of involvement, without interfering with construction and completion process. For further research, further research should be carried out to determine the effects of constructors' competency on the completion of construction projects public secondary schools in Bomet East sub-county. The study also suggests that in future, when a similar research is to be done it should include the role of teachers, students and other education stakeholders in completion of construction projects in Bomet East sub-county.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The period taken in executing construction projects is increasingly becoming an issue of major concern among stakeholders. This causes stress in the construction projects due to issues such as accumulated rate of interests by commercial banks, cost overrun, inflation, clients' (sponsor) pressures and the possibility of disputes and claims leading to litigations or arbitrations Osazuwad (2010). Delays in project completion are a common problem in the construction industry not only with an immeasurable cost to society but also with debilitating effects on the contracting parties. The concept of delay in the substantial completion of construction projects is a global phenomenon. The impact of delays is that funds committed on projects do not benefits intended recipients and subsequently results in cost and time overrun. A study by United Nations Commission for Trade and Development (UNCTAD), (2001) on African construction industry's turmoil's and their implications for New Partnership for Africa's Development (NEPAD) identified costly project delays as a major problem and identifies poor project time, quality and cost performance as a major issue.

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

In Palestine, results indicate that the average delay because of closures leading to materials shortage was the most important performance factor that impedes project completion. Others being escalation of material prices, availability of resources as planned through project duration, average delay because of closures leading to materials shortage, availability of personnel with a high experience and qualifications, quality of equipment and raw materials in project, and leadership skills for project managers, Assaf *et al.*(2005).

Nigerian construction industry is also faced with the problem of project delays and completion rate. Ogunsemi and Jagboro (2006) noted that one of the most serious problems the Nigeria construction industry is faced with is the project cost overrun, with attendant consequence of completing projects at sums higher than the initial sum. Political insurgency also affects project implementation negatively, as well as the absorptive capacity as is the case of construction projects in some selected districts of Uganda Rosazuwad (2010). Rosazuwad further puts it that closure of special account, stalled procurements and expiry of special commitments, totally disrupted Project activities between March and July 1999. According to Jonathan (2011) the most important cause of delays in the construction sector in Kenya, is financing by the contractor during the project, changes in designs by the owner or his agent during the construction, delays in contractor's payment and non-utilization of professional construction management.

A preliminary informal review by the researcher on the construction projects in secondary schools in Bomet Sub-County revealed that most of the projects are not completed on schedule while others are abandoned before completion because of many problems and complex issues of performance such as cost, time, poor planning and safety. This, among many other factors have prompted the researcher to conduct this study, evaluating the factors influencing completion of

construction projects in Devolved units of Government with Wajir County providing the case study.

1.2 Statement of the problem

Maintaining steady completion of construction projects in public secondary schools have been an issue of serious concern both to the education stakeholders and contractors. According to Khatak (2009), the main reasons and causes of project/task failure are embodied in four key dimensions of the task, namely time, cost, quality and content. The end users and stakeholders of a project also play a fundamentally important role towards success or failure. Lock (2007), asserts that consequences of failure of projects can be multi-dimensional, having far reaching effects on individuals, communities and organizations. In more visible terms time and cost overruns are common features of failure of projects, resulting in delay of service or product delivery. Kappelman et al., (2006) says that the high rate of failed/incomplete or abandoned projects negatively impacts government/organizational performance, costing tax payer billions of money in losses.

In developing countries like Kenya, projects are the life line of construction plan or programs. Failure of projects irrespective of the sector, whether public or private contribute to irreparable loss to society and to the economy as whole. Delays and non-completion of projects from initial cost plan has been prevalent on construction sites. However, little or no efforts have been made to curtail the phenomenon. There have been numerous documented studies on failed or stalled construction projects. For instance, while evaluating the progress and reports of 28 highway projects constructed during the period 1996-1999 in Jordan, Battaineh (2006) observed that the average ratio of actual completion time to the planned contract duration is 160.5% for road works. Seboru (2006), further, citing other scholars also states that the time frame for major road

projects worldwide to reach construction start stage have been observed to range from 10-30 years. According to Igunnu et al. (2005), examples of faulty project management and execution are everywhere; uncompleted government buildings due to lack of funds, schools without classrooms or desks. However, there has been no particular research to address the problem of completion of construction projects in public secondary schools which has been so rampant. This research therefore seeks to fill in the gap that exists in the completion of construction projects, specific to secondary schools in Bomet East Sub-County.

1.3 Purpose of the Study

The purpose of the study is to evaluate the factors influencing the completion of construction projects in public secondary schools in Bomet Sub-County.

1.4 Research Objectives

The study was guided by the following objectives:

1. To establish the extent to which funding influences the completion of the construction projects in Secondary Schools in Bomet East Sub-County.
2. To determine how management and leadership support influences completion of construction projects in Secondary schools in Bomet East Sub-County.
3. To establish the influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County.

1.5 Research Questions

The research questions were focused on finding out the factors influencing completion rate of construction of the sewerage modernization project in the study area.

1. To what extent does funding influence the completion of the construction projects in

Secondary Schools in Bomet East Sub-County?

2. How does management and leadership support influence completion of construction projects in Secondary schools in Bomet East Sub-County?
3. In what ways does stakeholder involvement influence completion of construction projects in public secondary schools in Bomet East Sub-County?

1.6 Significance of the Study

Projects are undertaken to fulfill predetermined objectives. If the projects are not completed, then the objectives shall not have been met and resources shall have been wasted. The significance of this study is therefore to raise awareness on the factors that influence such completion. Secondly, the outcome of making sure projects are completed is that delaying their completion has the implication of added cost to the tax payer. Emphasizing the completion of projects is part of the development agenda since one set of project is completed, the focus is turned to another projects. This is development and it is this development that makes the study to be significant.

Since the study seeks to identify the factors influencing the completion of construction projects in secondary schools in Bomet Sub-County, it will help in the formulation and implementation policies to ensure smooth, timely and successful completion of construction projects in the public secondary schools in the Sub-County and also in the construction industry in general. In addition the study will encourage and motivate interest on diverse issues in project management. All educational stakeholders and future researchers in the area of study may also use this study as a background to build on.

1.7 Delimitations of the Study

The study only focused on the factors influencing completion of construction projects in public secondary schools in Bomet East Sub-County. The study specifically considered all public secondary schools in Bomet East Sub-County. Based on respondents, the study involved schools' management (principals, BOGs chairpersons, and PTA chairpersons), parents and contracts involve in the construction projects in the schools. Thematically, the study centered around: the extent to which funding influences the completion of the construction projects in Secondary Schools in Bomet East Sub-County; how management and leadership support influences completion of construction projects in Secondary schools in Bomet East Sub-County; the influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County and whether school heads and other project managers in public secondary schools in Bomet East Sub-County have adequate project management skills to enable them effectively manage school construction projects.

1.8 Limitations of the study

The study may face certain limitations such as unavailability of documented information about construction projects in public secondary schools in the Sub-County and therefore, to address this, the researcher will relied on information from the Ministry of Education, Ministry of Public Works and the National Construction Authority in Bomet County. Some of the respondents were unwilling to give information due to fear that they would be giving out information without authority, but this were overcome by the research explaining the purpose for which the study was being undertaken. To break secrecy and/or lack of openness due to the confidentiality and secrecy policy in most public institutions that restrict respondents from releasing vital

information, the researcher re-assured the respondent of confidentiality and that the information collected thereof were purely for academic reasons.

Overcoming the constraints, enabled sufficient data collection and retrieval of the information needed to complete the study.

1.9 Basic assumption of the study

This study is based on the following assumption:

- i) Documented information on the study topic were available
- ii) Completion of construction projects in public secondary schools in Bomet East Sub-County is mainly influenced by the variables stated in the study objectives.
- iii) Informants were truthful and honest.

1.10 Definitions of Significant Terms Used in the Study

Project: An activity with a starting date, specific goals and conditions, defined responsibilities, a budget, planning, a fixed end date and multiple parties involved.

Project Plan: A formal document designed to guide the control and execution of a project (Project Management Body of Knowledge, 2012).

Project management: Understanding the needs of stakeholders, Planning what needs to be done, when, by whom, and to what standards, Building and motivating the team, Coordinating the work of different people, Monitoring work being done, Managing any changes to the plan, and Delivering successful results Martin Barnes (2012).

Project Completion: The last step in a grant or contract's life cycle whether cost reimbursable or fixed price is project closeout.

Public Secondary Schools: State Secondary Schools funded by the government. An institution in which students receives the second stage of compulsory education.

Stakeholders: A person with an interest in a project

Funding: Act of providing resources, usually in form of money or other values such as effort or time.

Management and leadership: influencing other people to do the right thing.

School heads: Person in charge of schools.

Project managers: Person in charge of projects

1.12 Organization of the Study

This study is organized in five chapters. Chapter one provide a background on factors influencing completion of the construction projects in public secondary schools, statement of the problem, research objectives, and research questions that the study looks forward to answer, purpose of the study, and significance of the study, delimitations and limitation of the study. It also provides definitions of significant terms used in the study and organizational of the study. Chapter Two outlines the various schools of thought (literature review) on factors influencing completion of the construction projects in public secondary schools. The discussions were based on the research objectives. Chapter three outlines the research design and methodology that was used for purposes of completing the study. It also describes research design, target population, sample, sampling procedure and data collection instruments, pilot testing of the instruments, data collection procedures and data analysis techniques, ethical considerations and operational definition of the variables. Chapter four covers data analysis and presentation of results, while Chapter five presented the summary of major findings, discussions of the findings vis-à-vis the literature review, conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of the literature related to factors influencing completion of construction projects in public secondary schools based on previous studies. It encompasses empirical reviews as well as conceptualization of the theories and elements underpinning the study area. Lastly, it provides a focused summary that highlights the existing research gap.

2.2 Project Implementation and Completion

A project in its basic definition is a temporary endeavor undertaken by people who work cooperatively together to create a unique product or service Zulu & Chileshe (2008) within an established time frame and within established budget to produce identifiable deliverables. Project success has been defined by the criteria of time, budget and deliverables Laudo, & Laudon (2010). According to Lock, (2007), a project is only successful if it comes on schedule, on budget, it achieves the deliverables originally set for it and it is accepted and used by the clients for whom the project was intended. According to Ombati, (2013), projects possess certain characteristics that distinguish them from any other activity in the organization. These include the fact that projects are temporary meaning that any project will have a start date and end date although it has nothing to do with short duration.

Completion of projects within schedule is a major contribution towards the competitive edge in organizations Enshassi, Mohamed, & Abushaban (2009). This is based on the realization that the achievement of the targeted objectives is determined by the ability to deliver the targeted output within the stipulated time. 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 & Subramanian (2009). Project success factors can be classified into managerial factors, efficient project planning and clarity of objectives. Enshassi, Mohamed and Abushaban (2009) identify two stages within project lifecycle as the delivery and post delivery stages. The delivery stage focuses on standard measures which involve “doing things right” while the post delivery stage is the concern of the consumers and organization to ensure that things were done right. It is based on this approach that “getting things right” is perceived to be more significant compared to “doing things right”.

Implementation of the projects usually needs resources given that most of the time project execution is based on detailed plan, which considers also external factors and constraints. Planning, execution and controlling of project is the primary field of project management. For major projects it is necessary sometimes to set up a special temporary organization, consisting of a project team and one or more work teams Prabhakar (2008). Divakar, & Subramanian, (2009) also elaborate that the implementation process involves the collective wisdom, knowledge, and even subconscious minds of the collaborators. The nature of the implementation processes will depend on the type and size of the project. Scope, time, cost, risk, quality, project organization, human resources, communications and procurement must be managed. These sentiments are no different from that of Ntuala, (2010) who postulates that implementation is the carrying out, execution, or practice of a plan, a method, or any design, idea, model, specification, standard or policy for doing something. As such, implementation is the action that must follow any preliminary thinking in order for something to actually happen.

2.3 Influence of funding on the completion of the construction projects

Chan et al, (2008) hold that the most important cause of delays in the construction sector is financing by the contractor during the project, changes in designs by the owner or his agent during the construction, delays in contractor's payment and non-utilization of professional construction management. In (2009), Ravindra argued that investment in a constructed facility represents a cost in the short term that returns benefits only over the long term use of the facility. Thus, costs occur earlier than the benefits, and owners of facilities must obtain the capital resources to finance the costs of construction Pilcher, (2012). A project cannot proceed without adequate financing, and the cost of providing adequate financing can be quite large Dissanayaka and Kumaran, (1999). For these reasons, attention to project finance is an important aspect of project management. Finance is also a concern to the other organizations involved in a project such as the general contractor and material suppliers Kerzner (2008). Unless an owner immediately and completely covers the costs incurred by each participant, these organizations face financing problems of their own Odusami and Olusanya (2010).

According to Bathurst and Butler, (2008) cost and designs are closely linked and it is important to ensure that projects are delivered within their approved budgets and that the design represents value for money. Projects should be designed taking account of both capital and operational costs, whole-life costing is an integral part of the design process, and whole-life costs of key components of a facility should be considered during the design process Majid (2008). To ensure value for money, a balance should be struck between initial capital costs and expected replacement costs over the life of the facility Bosire (2012). Ochieng and Tubey, (2013) observe that at a more general level, project finance is only one aspect of the general problem of corporate finance. If numerous projects are considered and financed together, then the net cash flow requirements constitute the corporate financing problem for capital investment. Ashworth, (2014) postulates that whether project finance is performed at the project or at the corporate level does not alter the basic financing problem. In essence, the project finance problem is to obtain

funds to bridge the time between making expenditures and obtaining revenues Kerzner (2008). Based on the conceptual plan, the cost estimate and the construction plan, the cash flow of costs and receipts for a project can be estimated. Normally, this cash flow will involve expenditures in early periods Mbachu and Olaoye (2009). Covering this negative cash balance in the most beneficial or cost effective fashion is the project finance problem. During planning and design, expenditures of the owner are modest, whereas substantial costs are incurred during construction Harris and MacCaffer (2005). Only after the facility is complete do revenues begin. In contrast, a contractor would receive periodic payments from the owner as construction proceeds. However, a contractor also may have a negative cash balance due to delays in payment and retain age of profits or cost reimbursements on the part of the owner Bathurst and Butler (2010).

2.4 Influence of management and leadership on completion of construction projects

Construction Management or Construction Project Management (CPM) is the overall planning, coordination, and control of a project from beginning to completion Tredle (2008). CPM is aimed at meeting a client's requirement in order to produce a functionally and financially viable project Talukhaba (2009).

2.4.1 Quality of Management during Design

Project success is dependent on; *inter alia*, the performance of the design team. The designers are the key players in the construction industry whose services are needed from the conception stage of the project to its completion. The performance of the designers is therefore important because any decision made at the inception of the project will affect project success. Defective designs adversely impact on project performance and the participants and are responsible for many construction failures Al-momani (2010). Failure at the conceptual planning and design

stages may lead to significant problems in successive stages of the project. Design inefficiencies could lead to redesign and rework or poor quality of products. Oyedele and Tham (2006) provide a listing of clients' ranking of designers' performance criteria among which were those that relate to quality of design coordination, smooth flow of work, *vis-à-vis* conflicting design information, timeliness of issuing of revised drawings, missing information, dimensional inaccuracies as well as delay of release of shop drawings.

2.4.2 Quality of management during construction

Dainty *et al.* (2002) in Cooke-Davis (2001) declare that project management competence represents only one of many criteria upon which project performance is contingent. It is also arguably the most significant as it is people who deliver projects, and not processes and systems. According to Pongpeng and Liston (2003), problems such as schedule delays, budget overruns, low quality work, as well as a large number of claims and litigation result largely from not selecting the best contractor to construct the facility.

Quality of management during construction concerns the steps taken to ensure that products are in accordance with the quality standards and measure the effectiveness / competency of consultants and contractors. Supervision during construction is critical to ensure quality products and timely delivery of project Kaming *et al* (2007). On the part of the consultants the assessment of the following will determine the speed of construction and ensure quality of the product: timely inspection procedure; adequate quality management inspection resources; quality management information processing requirements; materials or work rejection rate, and clean / dry working environment requirements. On the part of the contractor, the effectiveness of construction management will affect the speed of construction. The factors to be considered here

are forecasted planning data such as analysis of construction methods; analysis of resource movement to and within site; analysis of work sequencing to achieve and maintain workflow; monitoring and updating of plans to appropriately reflect work status; responding to, and recovering from problems or taking advantage of opportunities present; effective coordination of resources, and finally, the development of appropriate organizational structure to maintain workflow.

2.4.3 Influence of school heads' project management skills in completion of school construction projects

School management is a complex process that requires committed and visionary leadership Bush (2007). A school principal is charged with the responsibility of managing school physical facilities, staff personnel, school finance, the curriculum, students and school community relations Kelechukwu (2011). As such, the school principal acts as a project manager. Project management processes are normally divided into initiating, planning, executing, controlling and closing processes Prabhakar (2008).

Looking at the principal as a project manager, one is expected to plan, implement, manage, maintain and evaluate the entire education system physical facilities, human resource, students, financial inputs and the curriculum then we see the need for adequate preparation of school heads in project management during the construction of infrastructural facilities. Effective execution of school management tasks requires that principals be adequately trained. However secondary school principals in Kenya are appointed from serving teachers Okumbe (2008). As Olembo (2012) and Okumbe (2008) noted, little orientation is given as to the nature of the work they are supposed to do as education programme managers. Hence, this may be the reason why most schools in our country have stalled projects, dilapidated structures, and register poor

academic performance. It is not an easy task to measure the effectiveness of project management in a school setting. This, according to Okumbe (2008), is mainly because different schools have different financial capabilities, and resource distribution in different schools varies. As such, the study measured principals' perceived effectiveness in project management.

A competent professional is generally understood to be someone who can do the job Kumar & Prasad (2013). Competence in a profession is consistently meeting the objective criteria for performance on the job Ireland (2004). It is generally agreed that the overall scope of competence these three areas: knowledge, skills and attitude. To start with, knowledge is one aspect of competence. According to Ireland (2004), 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 (PM) must first possess knowledge of the technical aspects of the industry to an extent that he or she understands the product and service being built and delivered.

The second aspect of competence is skill. Skills are the application of knowledge to project work that ensures accomplishment of the work in an effective and efficient manner Ireland (2004). Katz (1974) proposed that managers need three critical skills in managing: technical, human, and conceptual skills. Technical skills are the job-specific knowledge and techniques needed to proficiently perform work tasks. These skills tend to be more important for first line managers because they typically are managing employees who use tools and techniques to produce the organization's products or service the organization's customers Robbins & Coulter (2012). Human skills involve the ability to work well with other people both individually and in a group. Managers with good human skills get the best out of their people. Human skills are demonstrated

in the way a manager relates to other people, including the ability to motivate, facilitate, coordinate, lead, communicate, and resolve conflicts Daft (2012). Finally, conceptual skills are the skills managers use to think and to conceptualize about abstract and complex situations. Using these skills, managers see the organization as a whole, understand the relationships among various subunits, and visualize how the organization fits into its broader environment Reok, (2014).

Attitude as the third aspect of competence is the personal and professional demeanor exhibited by a person while performing his or her work Ireland (2004). He notes that attitude includes drive, energy, good instincts, and dedication. In the context of competence, this would be a positive outlook and an ability to not take one's self too seriously. A project manager must demonstrate the correct attitude when working with all the project stakeholders, e.g., project team, senior management, customer, and special interest groups Ireland (2004).

Several studies have therefore, identified management and leadership related factors to cause delays in completion of school construction projects. Kerzner, (2008) assert that incomplete drawings, late issuance of instructions and inadequate supervision critically impacted on delays in construction projects in public learning institution. Kumar and Prasard, (2013) concluded that inadequate site supervision by the school managers was the major cause of delay in completing school constructions. Pongpeng and Liston, (2013) identified delays in approving major changes in the scope of works, inadequate experience of the school managers and late in reviewing design documents as critical. In a separate study in United States, Arditi and Mochtar (2010) identified delays in design work and inadequate site inspection as the main causes of management related delays. These findings are also supported by the observation made by Assaf and Hejji (2006) who identified the consultant related delay factors as; delay in performing inspection and testing

the consultant, delay in approving major changes in the scope of work by consultant, inflexibility (rigidity) of consultant, poor communication and coordination between consultant and other parties, late review and approval of design documents by consultants, conflicts between consultant and design engineer, inadequate experience of consultant.

They further identified design errors made by designers, changes in types and specifications during construction, insufficient communication between owner and consultant during design stage as critical. In another study conducted by Chan and Kumaraswamy (2007) in country, the study identified delays in design information, inadequate design team experience and mistakes and discrepancies in design documents as some of the management related factors causing delays in completion of school projects. In a separate study, El-Razek *et al.*, (2008) concluded that design changes during construction, changes in material types and specifications during construction and design errors made by designers contributed to delays in project completion. Similarly, Cooke-Davis, (2011) explains that performing inspection and testing, poor communication and coordination with other parties, and conflicts between consultant and design engineer as the most significant in causing delays. Iyer and Jha (2006) identified the factors of inadequate project formulation in the beginning and reluctance in timely decision by the consultant as key causes of delay. Kumaraswamy and Chan *et al.*, (2008) identified the factors of unforeseen ground conditions, delays in design information and necessary variations of works as key consultant related delays. Harris and Macaffer, (2009) looked at the causative factors in terms of technical risks that included design failure, estimation error and new technology failure. These findings are supported by Lock (2007) who also found that problems of poor contract management, mistakes and discrepancies in contract documents and inspection and testing of

completed portions of work as key causes of management related delays in completing school projects.

2.5 Influence of stakeholder involvement on the completion of construction projects

The rapid expansion of student enrolments in recent years, coupled with inadequate resources to cope with the ever-increasing demand for educational provision, has made several constructions to be established in schools in a bid to provide good learning environment for the students. Schools stakeholders have therefore been involved in the construction of the various school infrastructures Onderi and Makori (2013). These include staff and students, parents, members of the Parent Teacher Association and many other members of the community. All of these need to be brought, in some way or other, into the decision-making and project construction and management process if for timely completion and sustainability of the projects Assaf, Al-Khalil and Al-Hazml (2005). However, their involvement can also influence the time a construction project takes before its completion Talukhaba (2009).

2.5.1 PTA competency and their influence on completion of School Construction Project

Many projects continue to fail despite the use of established project methods and techniques as the leadership competency required for successful project outcomes have been found lacking. Previous research has stopped short of identifying leadership and competence as factors that have affected or influenced project outcomes Al-momani (2010). A project's success is, in part, contingent on effectively managing the constraints of time, costs, and performance expectations. In order to achieve this it is essential that the project manager and his team possess and display appropriate leadership and competence skills. Servant-leadership is recognized as a model that could contribute to overcoming many of the leadership challenges faced by organizational leaders. Despite the plethora of research, project managers continue to face many challenges and

problems concerning leadership, for example, leadership style, stress, uncertainty, motivation, learning, and teamwork Majid (2008). Aibinu, and Jagboro, (2012) reported that the success of a project depended more on human factors, such as project leadership, top management support, and project team, rather than on technical factors. They also found that the human factors increased in importance as projects increased in complexity, risk, and innovation. The researchers found that the critical role of the project manager's leadership ability had a direct correlation to project outcomes Koushki, Al-Rashid, and Kartam (2005). In the project environment, possessing management skills is not sufficient to be successful Thite (2000). Project management practices require that managers have knowledge and experience in management and leadership, and the relationship to project success Aibinu, and Jagboro (2012). In a business environment it is believed that a manager makes sure tasks and duties are completed, while a leader is sensitive to the needs of people and what followers need to be exceptional employees Maccoby (2010). Frimpong, Oluwoye, Crawford (2013) suggested that integrating leadership concepts allows project managers to apply logic and analytical skills to project activities and tactics. Frimpong, Oluwoye, Crawford (2013) further suggested that project managers can integrate leadership concept by being sensitive to and working with project team members as individuals with needs and desires related to their work.

A basic ingredient of project management skills is the degree of influence and leadership that the project manager has over the project team. The available literature suggests that project management competencies are broad and multifarious. Ahmed (2013) identified some of the requisite project leadership skills as building relationships and communication, adaptability to change initiative, resolving conflict, leading the project team, managing corporate culture, credibility and responsibility, motivating, and commitment to project objectives. In school

environment, the PTA committee must be seen to be working as a team in order to achieve the organization's goals. They are expected to display competency, high level of managerial skills have gender balance in their composition among other qualities.

In a study conducted in Kenya by Ombati (2013) on factors influencing timely completion of infrastructural projects in public secondary schools in Kenya: a case of Kitutu Masaba constituency, Kenya, using the survey research design to collect the data from a target population of 56 schools in the constituency, the study found that management Skills amongst school managers influences timely completion of school projects. Timely availability of funds also influences these projects. Conflicts between various stakeholders were found to be taking place and affecting timely completion of the projects. The further found that stakeholders are involved but how seriously they play their roles may be a factor that is influencing timely completion of these projects. The study therefore recommended that school managers and especially principals should undertake professional courses that are tailored to enable them acquire relevant skills for project management in schools. Stakeholders like the BOGs and PT As should be composed of individuals who have professional experience in construction work or have attended related courses.

2.5.2 Government Policy

According to IPAR (1999), there exists lack of consensus about the goals of projects in Kenya. It is observed that a wide disparity exists in the development status of the people due to lack of equity in project policy systems. Allocation equity which is an elusive goal demands that resources should be shared fairly but in Kenya, the powerful elites tend to have undue influence on the allocation of project resources. An enormous gap exists between available resources and increasing demand for access to interventions. Policy formulation and implementation calls for

hard choices and using the best information available to design strategies that maximize effectiveness and efficiency. Policy makers have to confront the reality of severe resource constraints.

Government has the ultimate responsibility to provide access to services and to ensure that public private partnership does not alter the basic responsibility of government. According to El-Zazek, (2004), Policy making requires a strong legitimate institutional structure for decision making and policy enforcement. Kelechi further observes that policy formulation, among other things, requires a strong representative government which is seen as legitimate and relevant to the masses which will result in a strategy for domestic revenue mobilization through acceptable taxation policies that the citizen will be willing to comply with because they appreciate and relate to it. It also requires that policies be made on the basis of strategic options and choices be rooted in the states realistic efforts at internal resource mobilization. In Kenya, policy formulation process influences environmental exploitation, considerations of indigenous perspectives, creation of educational awareness, empowering of the beneficiaries, capacity building, considerations of consumer interest and local peoples' involvement in decision-making. All the above have either direct or indirect influence on the timely delivery of construction projects.

2.5.3 Influence of school sponsors on timely completion of school construction projects

Religious organizations in Kenya are empowered by the Education Act to participate in the management of schools and colleges that they sponsor. These religious sponsors include: the Quaker Church; the Catholic Church; Africa Inland Church; Salvation Army Church; Seventh Day Adventist Church; Church of God; Presbyterian Church of East Africa; Methodist Church; Baptist Church; Anglican Church of Kenya and the Pentecostal Assemblies of God Church. The

Act allows an agreement to be made between the Ministry of Education and the sponsoring churches as regards the rights and responsibilities of the Church sponsor in management of schools in Kenya Banr (2010). This affects the management of public schools where churches that were managers of schools before became sponsors of such schools Onderi and Makori (2013).

In section 11 of the Education Act, the voluntary organization, that is the founder of the school is given the right to nominate four persons to champion the sponsor's interests in the School Board of Governors, if the school is on the second schedule. According to the Ministry of Education Republic of Kenya (2004) the Board of Governors Order amplifies section 11 which allows the sponsor to propose the chairman of the school Board who should be ratified by the Minister of Education. This organ champions the sponsors' interest in school management. The historical roles where sponsors were the main developers and providers for educational institutions have changed. At this time, the missionaries were the main developers and providers for educational institutions they owned. They developed facilities and provided nearly all essential learning resources. These gave significant roles to sponsors in the management of schools in Kenya. However, changes in the Education Act on school sponsorship seem to be causing some misunderstanding between sponsors, community, teachers and the Government. Some sponsors have been accused of interfering with the schools' core business by closing down schools indefinitely. In other instances, some have rejected and even evicted principals posted to schools by the Ministry MisGigah (2010). According to Mburunga, (2009) some sponsors meddling in schools destabilize the instructive activities in the system. The sponsor blames the school heads concerning management issues and the school heads blame the sponsor for interference in school management. Most schools are single handedly run by the principal. This is supported by

Simatwa (2007) who observed that in some schools the principal was the absolute Monarch of the school, his/her word was final.

2.6 Theoretical Framework

The study is anchored on structural functionalism theory; Parsons (1991). The most notable proponents of this theory included, Merton, Parsons, Durkeim, Blau, Radcliffe and others .According to this theory, formal organizations consist of many groupings of different individuals, all working together harmoniously towards a common goal. It argued that most organizations are large and complex social units consisting of many interacting sub-units which are sometimes in harmony but more often than not they were in diametric opposition to each other. Functionalism is concerned with the concept of order, formal work in organizations and in particular how order seems to prevail in both systems and society irrespective of the changes in personnel which constantly takes place. The theory seeks to understand the relationship between the parts and the whole system in an organization and in particular identify how stability is for the most part achieved. Structural functionalism further advocated for an analysis of the perceived conflicts of interests evident amongst groups of workers. In this case the parents, sponsors, teachers, members of the board, contractors and the Ministry of Education. However, it is crucial to take into account conflicts of interests and differing value-basis in order to understand the organizations Carr and Capey (1982). The theory thus appropriately explains some conflicts between the head teachers and governing bodies in the management of public secondary schools in Kenya hence causing delays and untimely completion of construction projects in schools. The school as a social system had within it a series of sub-systems which interacted with each other and the environment. Such school sub systems included sponsors, teachers, BOG, PTA, students, support staff and the government. Their interactions should be

harmonious for effective achievement of educational goals as well as completion of construction projects. This theory had been criticized for being unable to account for social change because it focused intently on social order and equilibrium in society.

2.7 Conceptual Framework

INDEPENDENT VARIABLES

Funding
Funds allocated

Management and leadership

- Quality of management during design
- Quality of management during construction
- Motivation of staff

Stakeholder's involvement

- Government
- PTA
- Sponsor

INTERVENING VARIABLES

- Government policies
- Construction Laws
- Environmental factors
- Climate change

DEPENDENT VARIABLES

Completion of Construction projects in schools

- Incomplete classroom
- Incomplete toilet
- Incomplete gate

Figure.1 Conceptual framework

The conceptual framework for the study as illustrated in figure 2.1 indicates the relationship between the variables. The defining premise for the framework as derived from the literature review is that manipulation of the independent (Predictor) variables consisting of funding, management and leadership, stakeholders and principal's management competency, affects the completion of school construction projects in times of time and rate of completion (dependent variables). However, the relationship between these variables depends on the intervening variables identified as government policies, construction laws, environmental factors and climate change.

2.9 Summary of the Chapter

This chapter reviews the past literature on factors influencing completion of construction projects in public secondary schools. It reviews various scholarly articles based on the thematic areas such as management and leadership, stakeholder's involvement and principals' competency in management. In most of the reviewed literatures, scholars have emphasized on delays and non-completion of various projects in various organizations. However, there is inadequate empirical literature on projects in learning institutions hence the present study seeks to address this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter mainly deals with the description of the methods and procedures that were followed while carrying out the study. It consists of research design, target population, sample size and sample selection, research instruments, instruments validity and reliability, data collection procedures and data analysis techniques.

3.2 Research Design

The study employed descriptive research survey design. Descriptive survey was adopted in conducting this study because it is concerned with describing, recording, analyzing and reporting conditions that existed, Kothari (2009). According to Dell (2003), a descriptive research design is suitable where the study seeks to describe and portray characteristics of an event, situation and a group of people, community or a population as they exist. It measures variables as they exist naturally. Mugenda and Mugenda (2003) describes a survey design as an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables. It is a method of collecting information by interviewing or administering questionnaire to a sample of individuals. It is used to collect information about people's attitudes, opinions, habits and the variety of education or social issues Kathuri (1993).

The design is applicable because there is need to describe study respondents in regard to their attitude and opinion about factors influencing completion of construction projects in public secondary schools in Bomet East Sub-county. Kothari, (2009), posits that the research design must make enough provision for protection against bias and must maximize reliability, with due concern for the economical completion of the research study. Hence, there was need to use

descriptive survey, which ensured that respondents remain anonymous, more truthful and generate more reliable responses.

3.3 Target population

Target population is defined by Best and Kahn (2006) as a small portion of the population selected for observation and analysis. It also refers to all members of a population to which research findings can be generalized and is an accurate record of the sampling frame from which the sample is to be drawn. The study targeted all public secondary schools in Bomet East Sub-county from which, principals, BOGs chairpersons and PTA chairpersons were involved in the study. There are 36 public secondary schools hence 36 principals, 36 PTA chair persons, and 36 BOGs chairpersons were targeted as respondents of the study.

3.4 Sample size and Sample selection procedure

Sampling is the process of selecting a number of individuals or objects for a study in such a way that the individuals or elements represent the larger group, or the population from which they are selected. According to Mugenda and Mugenda (2003), the sample must be large enough to represent the salient characteristics of the accessible population and hence the target population. The research used saturation sampling techniques to include all the respondents in the study. This sampling technique is preferred because it eliminates biasness as all the respondents are given equal chance of being selected for the study. Therefore, in every school, one principal, one BOG chairperson, and each PTA chairperson was chosen until 36 respondents from each category is arrived at.

3.5 Data collection Instruments

The research tool used both qualitative and quantitative methodologies of collecting data. Hence, semi-structured questionnaires and interview schedule observation was used to collect data.

3.5.1 Questionnaires

The questionnaires had both structured and unstructured questions. This study prefers the use of questionnaire because of the simplicity in their administration, scoring of items and analysis Mugenda and Mugenda (2003). The primary data were gathered using the questionnaires administered by the researcher to the school principals. The questionnaires were divided into sections and developed based on the research objectives in order to capture relevant information. Section A consisted of demographic information of the respondents and background of the school, while section B consisted of questions based on thematic areas.

3.5.2 Interview Schedules

Interview schedule helped in elaborating the questions that may not be answered in the questionnaire since the respondents have enough time with the researcher. These tools were also divided into two sections, based on demographic information of the respondents and the section capturing research objectives in order to capture relevant information. Punch (2010) explains that interview schedules helps in giving detailed information because the researcher has a direct interaction with the respondent and can write side notes as the respondent responds. The researcher organized research tools to both BOG and PTA chairperson from each school.

3.6 Instruments validity and Reliability

3.6.1 Piloting

Pilot testing means pre-testing the instruments with a few respondents to test their accuracy. The questionnaire was piloted in a sample of the target population (two schools within the area) randomly selected. The results were used to validate the instrument.

3.6.2 Validity

Mugenda and Mugenda (2003), defines validity as the accuracy and meaningfulness of inferences which are based on the research results. In other words, validity is the degree to which

results obtained from the analysis of the data actually represent the phenomenon under study. The researcher exposed the instruments to expert judgment. Necessary adjustment was made in consultation with the U.O.N supervisors which improved its validity.

3.6.3 Reliability

Reliability of an instrument is the degree of consistency with which it measures a variable. It is concerned with estimates of the degree to which a research instrument yields consistent results or data after repeated trials, Mugenda and Mugenda (2003). The researcher conducted a pre-test for the questionnaire and the results of the pilot study was used to calculate the reliability coefficient which is 0.8.

This was computed using (Kuder-Richardson 20 formula).

$$KR_{20} = \frac{K (S^2 - \sum s^2)}{S^2 (K - 1)}$$

Where: KR20 = Reliability coefficient of internal consistency

K = Number of items used to measure concept

S^2 = Variance of all scores

s^2 = Variance of individual items

Mugenda (2003) asserts that computation of a correlation coefficient yields a statistic that ranges from -1 to +1. Hence, the instrument was believed to be reliable. This enabled the researcher to restructure the questionnaire by incorporating the missing information, omitting irrelevant questions and paraphrasing questions that appeared ambiguous to respondents. This was all done under the guidance of the supervisors.

3.7 Data Collection Procedure

A letter of identification from the University of Nairobi was obtained from the Extra – Mural Centre which was used to obtain a research permit from the National Council of Science and Technology. Permission was sought from the relevant authorities prior to the commencement of

the study. The researcher reported to the relevant authority before proceeding to the field. Such authority included the County Education Office, Bomet self-introduction and subsequent authorization to conduct research. A letter of transmittal was written which introduced the researcher to the respondents and assured them of total confidentiality of their responses. In this study, data was collected through a drop and pick method where the questionnaires was dropped in the schools then picked after 3 days. The whole process of data collection was administered personally by the researcher.

3.8 Data Analysis Techniques

According to Kothari (2009), after collection of the data it has to be processed and analyzed in accordance with the outline laid down for that purpose at the time of developing the research plan. Data collected was coded with regard to the type and source. Data was analyzed and interpreted both qualitatively and quantitatively in the light of the research objectives. Pearson Correlation was used to determine the strength of association between variables of interest. Analysis of data was conducted with the aid of the Statistical Package for Social Sciences (SPSS). Qualitative statistical techniques were used to describe and summarize the qualitative data. The results was presented and interpreted in the form of descriptive statistics; frequencies and percentages. The findings were represented in tables.

3.9 Ethical Consideration

Due to the sensitivity of the information on costs involved in construction and the fact that most school managers treat such monetary information with confidentiality, the researcher ensured that the respondents was treated with unanimous kind of resilience. The researcher produced, on request by respondent a letter from relevant authority attesting to the fact that the information gathered was used for this study and not for any other intent. This letter accompanied every

questionnaire that was administered. The researcher also tried to maintain ethical issues of impartiality, inclusivity, honesty and avoid corruption or bribery in order to get information. Voluntary consent of participation was sought. The researcher also intends to uphold and maintain cultural practices, where required to and where questions infringe into such, amicable resolute was arrived at. The right to information and clarification was also upheld. Any respondent who sought clarification of any question in the questionnaire was accorded thus. Data analysis, collection, interpretation and presentation were done as objectively as practical.

3.10 Operationalization Table

Objectives	Variables	Indicators	Measures	Scales
<ul style="list-style-type: none"> Factors influencing completion of project in public secondary school in Bomet East sub-county , Bomet County , Kenya 	Completion of construction project	Number of completion project	<ul style="list-style-type: none"> Know the number of complete and incomplete project 	Nominal
<ul style="list-style-type: none"> To establish the extent to which funding influences completion of construction project in public secondary school in Bomet East sub-county ,Bomet county, Kenya 	Funding	Funds allocation	<ul style="list-style-type: none"> If enough funds are allocated 	Nominal
<ul style="list-style-type: none"> To determine if management and Leadership support influence completion of construction project in Bomet East sub- county ,Bomet County , Kenya 	Management and leadership support	<ul style="list-style-type: none"> Motivated staffs Quality management during design and construction Frequency of checking project 	<ul style="list-style-type: none"> If staffs are given security If staffs are paid promptly 	Ordinal
<ul style="list-style-type: none"> To establish the influence of stakeholders involvement on the completion of construction project in public secondary school in Bomet East sub-county, Bomet county , Kenya 	Stakeholders involvement	Frequency of visiting school by BOG and PTA chairperson.	<ul style="list-style-type: none"> If sponsors are involved in decision Making 	Nominal

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATIONS AND DISCUSSIONS

4.1. Introduction

This chapter presents the findings, their interpretations and discussions. The findings of the study are presented on the basis of the research objectives, which were to; to establish the extent to which funding influences the completion of the construction projects in Secondary Schools in Bomet East Sub-County; to determine if management and leadership support influences completion of construction projects in Secondary schools in Bomet East Sub-County and to establish the influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County and to determine whether school heads and other project managers in public secondary schools in Bomet East Sub-County have adequate project management skills to enable. The data was analyzed using both descriptive and inferential statistics such as Bivariate Pearson correlation test. The descriptive statistics was used to describe and summarize the data inform of frequency distribution tables. The inferential statistics was used to make inferences and draw conclusions. The statistical package for social sciences (SSPS) version 19 was used to analyze the data.

4.2. Questionnaires Return Rate

There was 100% return rate of questionnaires for secondary school principals, interview guides for PTA chairpersons and BOG chairpersons in which all the questions for all the respondents were answered. This response return rate was achieved because the researcher made call backs and administered the instruments to each respondent in person to ensure that each and every respondent took part in the study.

Table 4.1. Questionnaire return rate

Respondent category	Number targeted for response	Number who responded	Percentage response rate
Schools Principals	36	36	100%
PTA chairperson	36	36	100%
BOG chairperson	36	36	100%

4.3. Respondents demographic characteristics**4.3.1. Principals' respondents' gender**

Considering the response by gender, majority of the school principals were males (52.7%) with female making 47.3%. Although male principals outnumbered their female counterparts, it was with small margin. The study also established that there were more male PTA and BOG chairpersons than their female counterparts at 61.1% and 55.6% respectively as shown in Table

Table 4.2. Response by Gender

Respondent Category	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Schools Principals	19	52.7%	17	47.3%
PTA chairperson	22	61.1%	14	38.9%
BOG chairperson	20	55.6%	16	44.4%

(Source: Researcher's data, 2015)

4.3.2 Number of years as secondary school principal

The study also sought to investigate the number of years respondents had taken in the service as school managers. This was imperative as it could influence their ability to provide relevant information on factors affecting completion rate of construction projects in public secondary schools.

Table 4.3 Number of years as secondary school principal

	Frequency	Percentages
Below 5 years	5	13.9
5-10 years	16	44.4
Over 10 years	15	41.7
Total	36	100

(Source: Researcher's data, 2015)

According to the study findings, majority of the respondents cumulatively at 86.1% had taken more than 5 years in school management position as secondary school principals. This implies that most of the respondents had stayed in leadership position long enough to provide reliable and credible information on the factors affecting completion rate of construction materials

4.4 Influence of Funding on completion of construction projects

In the first study question, the study sought to investigate the extent funding influence the completion of construction projects in public secondary schools. Respondents (principals) were therefore probed on source of funds, magnitude of funding and its influence on project completion.

4.4.1 Source of funding

When probed on the source of funding for construction projects, majority of the respondents at 52.8% indicated fundraising and school fees, 33.3% indicated government, while only 13.9% indicated donors. The responses were as shown in table 4.4 below.

Table 4.4 source of funding for the projects (n=36)

Source of funding	Frequency	Percentages
Donors	05	13.9%
Fundraising and school fees	19	52.8%
Government	12	33.3%
Total	36	100%

(Source: Researcher's data, 2015)

Table 4.4 depicts that over half of the schools relied on fundraising and school fees collection for construction of their projects, and this could slow down the completion rate of the projects given that in most cases, money collected through school fees and fundraising is never enough for project completion.

This was further confirmed when respondents were also asked to indicate whether funding influence completion rate of construction projects in their school. Out of the 36 principals that took part in the study, majority of the respondents at 77.8% responded positively, while only 22.2% indicated otherwise as indicated in table 4.5 below. These findings are similar to observation made by Dissanayaka and Kumaran, (1999) who also found that a project cannot proceed without adequate financing, and the cost of providing adequate financing can be quite large. For these reasons, attention to project finance is an important aspect of project management. Kerzner (2008) also posit that finance is also a concern to the other organizations

involved in a project such as the general contractor and material suppliers.

Table 4.5 Effects of funding on completion rate of construction projects (n=36)

Response	Frequency	Percentages
Yes	28	77.8%
No	08	22.2%
Total	36	100%

(Source: Researcher's data, 2015)

This shows that there was a relationship between funding and completion rate of the construction projects in public secondary schools in this region. Correlation between funding and completion rate of construction projects was also determined using the Bivariate Pearson correlation analysis as shown in table 4.6 below.

Table 4.6 Correlation between Funding and Completion rate of construction projects

	Statistics	Completion rate of construction projects
Funding	Pearson Correlation	.77**
	Sig. (2-tailed)	.000
	N	36

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

Source: Researcher's Analysis, 2015

The results indicate a statistically significant and positive relationship between funding and completion rate of construction projects with ($r=0.77$, $P < 0.05$).

4.4.2 Magnitude of project funding levels

Respondents were also asked to describe the magnitude of project funding levels in the construction projects they had been involved. This was imperative in order to find out whether the magnitude of funding could also affect the completion rate of the projects. Table shows the response.

Table 4.7 Description of funding for construction project

Description of funding	Frequency	Percentage
Sufficient Funding	03	8.3%
Intermittent Funding	11	30.6%
Funding in Phases	09	25%
Insufficient funding	13	36.1%
Total	36	100%

(Source, Researcher, 2015)

Table depicts that majority of the public secondary schools were experiencing insufficient funding, as indicated by 36.1% of the respondents. On the other hand, 30.6% indicated intermittent funding, while a quarter of the respondents indicated funding in phases. Only 8.3% indicated that they received sufficient funding, implying that most of the public schools were experiencing funding shortage and this could lower the completion rate of the construction projects. Osazuwad, (2010) similarly found that the cause of delay in completion of the construction projects was due to issues such as inadequate financing and the possibility of disputes and claims leading to litigations or arbitrations.

Respondents were also asked to indicate the extent of influence of funding on completion of construction in public secondary schools by reacting on the items provided and using the scale of 5= Strongly agree 4= Agree 3= Not sure 2=Disagree 1=Strongly disagree

Table 4.8 Influence of Funding On Completion of Construction in Public Secondary Schools

Statement		1	2	3	4	5	Total
Sourcing of project funds affect completion of construction projects	Freq.	01	02	05	10	18	36
	%	2.8	5.6	13.9	27.8	50.0	100
Budgeting for construction project elements affects completion of construction project	Freq.	00	01	07	09	19	36
	%	0.00	2.8	19.4	25.0	52.8	100
Delayed Procurement process affects completion of construction project	Freq.	02	00	06	07	21	36
	%	5.6	00.0	16.7	19.4	58.3	100
Funding schedule affects completion of construction projects.	Freq.	01	02	04	10	19	36
	%	2.8	5.6	11.1	27.8	52.8	100
Adequate funding allocation enhances completion of construction	Freq.	03	00	02	04	27	36
	%	8.3	0.00	5.6	11.1	75.0	100
Misappropriations of project funds lead to incompleteness of projects.	Freq.	02	01	05	08	20	36
	%	5.6	2.8	13.9	22.2	55.6	100
Sponsors play a key role on funding for completion of construction	Freq.	01	04	05	11	15	36
	%	2.8	11.1	13.9	30.6	41.7	100

(Source, Researcher, 2015)

The study found that funding system and its availability had a great influence on the completion rate of the construction projects in public secondary schools in this region. For instance, majority of the respondents (principals) 55.6% strongly agreed that misappropriations of project funds lead to incompleteness of projects. Over half of the respondents (52.8%) also strongly agreed that also found that budgeting for construction project elements would affects completion of construction project as budgeting for a project is governed by the amount of finance available.

Similarly, Bathurst and Butler, (2008) in their study found that cost and designs are closely linked and it is important to ensure that projects are delivered within their approved budgets and that the design represents value for money. Further, Majid, (2008) found that projects should be designed taking account of both capital and operational costs, whole-life costing is an integral part of the design process, and whole-life costs of key components of a facility should be considered during the design process.

Most of the respondents (75%) strongly agreed that adequate funding allocation enhanced completion of construction, while over half of the respondents 58.2% strongly agreed that delayed procurement process affects completion of construction projects given that complex bureaucracy and shortage of finance encourage delayed procurement, which negatively affect the completion rate of the construction projects. Chan et al, (2008) similarly found that the most important cause of delays in the construction sector is financing by the contractor during the project, changes in designs by the owner or his agent during the construction, delays in contractor's payment and non-utilization of professional construction management.

Sourcing of the project funds was also found to have an effect on completion of construction projects (50%), given that the kind of source of funds determine the amount and adequacy of funds, which ultimately affect the completion of the said project.

In one of the interviews with the BOG chairman, one of the themes that came up was inadequacy of funds. When probed on how this could affect the completion rate of construction projects, the chairman said that:

“Inadequate funds for project, poor budgeting and complicated bureaucracy in procurement process is very harmful for successful completion of projects. This essentially implies that project cannot proceed without adequate financing. Further, projects that are made to consume huge amount of funds can easily stall when clear source of finance is not well defined” [BOG, 7].

Evidently, availability of funds is one of the major factors that determine the completion rate of construction projects in public secondary schools. These sentiments were also echoed by PTA chair person during the interview, when he said that:

“Important cause of delays in any construction project is finance. Building and construction involves a lot of financial input hence there should be adequate financial preparation stakeholders of the project. Adequate project design and planning should be reflected right from the initial stages of the project. This should also be manifested in budgeting of the project to avoid misappropriation of funds, which might cause delay or unsuccessful completion of the project” [PTA Chairperson, 4].

4.5 Project Management and Leadership skills

In the second research question, the study sought to determine whether management and leadership support influences completion of construction projects in Secondary schools in Bomet East Sub-County. To achieve this, major respondents (principals) were asked to indicate whether they had been trained in project management, and how this influenced their management skills.

4.5.1 Trained in the project Management

When asked on whether they had been trained in project management, the study found that majority of the school principals at 80.5% had not been trained, while only 19.5% indicated otherwise. This shows that most principals had limited knowledge and skills in project management and this could negatively interfere with the project completion rate.

Table 4.9 Trained in the project management

Description of funding	Frequency	Percentage
Yes	29	80.5%
No	07	19.5%
Total	36	100%

(Source: Researcher, 2015)

Respondents were also requested to indicate the extent to which they agreed or disagreed with the following statement relating to influence of project management skills on completion of construction projects in public secondary schools; where 1- Strongly Dis-Agree 2– Dis-agree, 3 – uncertain 4 - Agree 5- Strongly Agree

Table 4.10 Influence of project management skills on completion of construction projects

Statement							Total
		1	2	3	4	5	
Good leadership of the project team enhance proper and quick project completion.	Freq.	01	02	01	11	21	36
	%	2.8	5.6	2.8	30.6	58.3	100
Poor knowledge of project management cripple project completion	Freq.	02	01	04	08	22	36
	%	5.6	2.8	11.1	22.2	61.1	100
Failure at the conceptual planning and design stages may lead to significant problems in successive stages of the project.	Freq.	00	02	04	07	23	36
	%	0.00	5.6	11.1	19.4	63.9	100
Supervision during construction is critical to ensure quality products and timely delivery of project.	Freq.	02	01	05	05	23	36
	%	5.6	2.8	13.9	13.9	63.9	100
Effectiveness of construction management will affect the speed of construction.	Freq.	00	01	02	08	25	36
	%	00.0	2.8	5.6	22.2	69.4	100

(Source: Researcher, 2015)

According to the study findings, project management skills could influence the completion rate of construction projects through various fronts. For example, majority of the respondents at 58.2% strongly agreed that good leadership of the project team enhanced proper and quick project completion, meaning poor leadership skills among the project managers could slow down the project completion. This was also confirmed by majority of the respondents at 61.1% who strongly agreed that poor knowledge of project management could cripple project completion. Andawei, (2012) in their study also found that construction productivity is influenced by many factors, including material, equipment, tools, construction methods and management skills in terms of adequacy and accurate application.

The study also found that failure at the conceptual planning and design stages as a result of the limited knowledge, experience and expertise among the project managers or owners of the project may lead to significant problems in successive stages of the project. This was confirmed by most of the respondents at 63.9% who responded positively to the statement. Further, Dainty *et al.* (2002) in Cooke-Davis (2001) declared that project management competence is one of many criteria upon which project performance is contingent. Furthermore, Kerzner, (2008) assert that incomplete drawings, late issuance of instructions and inadequate supervision critically impacted on delays in construction projects in public learning institution.

Based on supervision of the project, majority of the respondents (63.9%) strongly agreed that supervision during construction is critical to ensure quality products and timely delivery of project. Therefore, any lapse in supervision could cause delay and unsuccessful completion of construction projects. Kaming *et al.*, (2007) also found that quality of management during construction concerns the steps taken to ensure that products are in accordance with the quality

standards and measure the effectiveness / competency of consultants and contractors. Supervision during construction is critical to ensure quality products and timely delivery of project. Further, effectiveness of construction management will affect the speed of construction and this statement was strongly agreed by majority of the respondents at 69.4%.

These findings are supported by Lock (2007) who also found that problems of poor contract management, mistakes and discrepancies in contract documents and inspection and testing of completed portions of work as key causes of management related delays in completing school projects.

These sentiments are also supported by the sentiments made by one of the BOG chairpersons during the interview, when he said that:

“School principals being a project manager, is expected to plan, implement, manage, maintain and evaluate the entire education system physical facilities, human resource, students, financial inputs and the curriculum. Therefore, there is need for their adequate preparation of in project management during the construction of infrastructural facilities” [BOG, 7].

Correlation between Project management and Leadership skills and completion rate of construction projects was also determined using the Bivariate Pearson correlation analysis as shown in table 4.11 below.

4.5.2 Correlation between Project management and Leadership skills and Completion rate of construction projects

	Statistics	Completion rate of construction projects
Project management and Leadership skills	Pearson Correlation	.68 ^{**}
	Sig. (2-tailed)	.000
	N	36

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

(Source: Researcher’s data, 2015)

The results indicate a statistically significant and positive relationship between project management and leadership skills and completion rate of construction projects with ($r=0.68$, $P < 0.05$). This is also justified by the findings of Aibinu, and Jagboro, (2012) who also found that project management practices require that managers have knowledge and experience in management and leadership, and the relationship to project success.

In one of the interviews with the BOG chairpersons of the public secondary schools in the region, the study found that management of the construction project by the school principals is very crucial for efficient completion of the construction projects. One of them said that:

“Quality of management during construction of projects is very important given that it revolves around the steps taken to ensure that the end result of the project is in accordance with the quality standards, that can make the project serve efficiently and effectively its purpose” [BOG, 9].

“Timely completion of construction projects also depends on the project leadership and management skills of the supervisor because he/she is in charge of building relationships and communication, adaptability to change initiative, resolving conflict, leading the project team, managing corporate culture, credibility and responsibility, motivating, and commitment to project objectives” [BOG, 10]

In the same vein, one of the PTA chairpersons seconded these statements when he said that:

“Effectiveness of construction management affect the speed of construction and efficient completion of the constructed project, given that the supervisor analyses resource movement to and within site; analysis of work sequencing to achieve and maintain workflow; monitoring and updating of plans to appropriately reflect work status” [PTA chairperson, 5].

4.6 Stakeholder involvement and the completion of construction

In the forth study question, the study sought to investigate the influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County. To achieve this, respondents were requested to indicate the extent to which they agreed or disagreed with the following statement relating to influence of stakeholder involvement on the completion of construction projects; where 1- Strongly Dis-Agree 2- Dis-

agree, 3 – uncertain 4 - Agree 5- Strongly Agree. Table 4.12 shows the response.

Table 4.13 Influence of stakeholder involvement on completion of construction projects

Statement		1	2	3	4	5	Total
PTA/Students/parents/ministry should all be involved in various ways in the projects.	Freq.	01	02	03	12	18	36
	%	2.8	5.6	8.3	33.3	50.0	100
Involvement of the major stakeholders enhances completion of the construction projects.	Freq.	00	01	02	09	24	36
	%	00.0	2.8	5.6	25.0	66.7	100
There is a relationship between involvement of the major stakeholders and completion of the construction projects.	Freq.	00	02	02	07	25	36
	%	0.00	5.6	5.6	19.4	69.4	100
Some stakeholders interferes with the school project due to vested interest	Freq.	01	02	08	06	19	36
	%	2.8	5.6	22.2	16.7	52.8	100
Poor coordination of the stakeholders can cause delay in project completion	Freq.	00	00	04	09	23	36
	%	0.00	0.00	11.1	25.0	63.9	100

(Source: Researcher, 2015)

The study findings show that involvement of stakeholders such as the PTA, BOG, students, and the ministry in construction projects has an influence on its completion. This was also justified by almost half of the respondents (50.0%) who strongly agreed that PTA/Students/parents/ministry should all be involved through various ways in the construction projects. This response concurs with Onderi and Makori (2013) who also found that schools stakeholders need to be involved in the construction of the various school infrastructures, such that staff and students, parents, members of the Parent Teacher Association and many other members of the community, need to be brought, in some way or other, into the decision-making

and project construction and management process if for timely completion and sustainability of the projects. However, their involvement can also influence the time a construction project takes before its completion Talukhaba (2009). According to Mburunga, (2009) some sponsors meddling in schools destabilize the instructive activities in the system. The sponsor blames the school heads concerning management issues and the school heads blame the sponsor for interference in school management.

Majority of the respondents at 69.4% also strongly agreed that there was a relationship between involvement of the major stakeholders and completion of the construction projects. However, their contribution to project completion depended on level of involvement. For instance, 52.8% strongly agreed that some stakeholders interfered with the school project especially when they had their own vested interest in the project. The study also found that poor coordination of the stakeholders can cause delay in project completion as confirmed by 63.9% of the respondents. In similar vein, Ahmed (2013) observed that in school environment, the PTA committee must be seen to be working as a team in order to achieve the organization's goals. They are expected to display competency, high level of managerial skills have gender balance in their composition among other qualities.

In one of the interviews with the PTA chairperson, one of them had to say that:

“To a great extent, stakeholders should be involved but how seriously they play their roles may be a factor that is influencing timely completion of these projects. School managers and especially principals should therefore, undertake professional courses that are tailored to enable them acquire relevant skills for project management in schools” [PTA, 4].

CHAPTER FIVE

SUMMARY OF FINDINGS , CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of this study in the following order; purpose of the study, objectives, methodology, major findings and conclusions. The purpose of the study was to evaluate the factors influencing the completion of construction projects in public secondary schools in Bomet Sub-County. In chapter one of the thesis, the background information was well outlined. The statement of the problem was well stated as well as the problem under investigation. Objectives to guide the study were developed. These were; to establish the extent to which funding influences the completion of the construction projects in Secondary Schools in Bomet East Sub-County; to determine if management and leadership support influences completion of construction projects in Secondary schools in Bomet East Sub-County and to establish the influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County. Chapter three of the project report presents the methodology used in this study. The study was conducted using descriptive survey design with both quantitative and qualitative type of data. The researcher used saturation sampling techniques to include all the schools and all the school principals, PTA chairman, and all the BOG chairman in the study. Quantitative data was analyzed using descriptive statistical analysis techniques, while qualitative data was analyzed through thematic framework.

According to the major findings this study, there was relationship between funding and completion rate of construction projects with ($r=0.77, P < 0.05$). Where inadequate funding, procurement bureaucracy, source of funding and misappropriations of project funds was found to lead to delay in construction completion of projects. The study also found that there was

statistically significant and positive relationship between project management and leadership skills and completion rate of construction projects with ($r=0.68, P < 0.05$). The study found that good leadership of the project team was found to enhance proper and quick project completion, poor knowledge of project management crippled project completion and supervision during construction is critical to ensure quality products and timely delivery of project. The study findings also showed that involvement of stakeholders such as the PTA, BOG, students, and the ministry in construction projects has an influence on its completion, through their level of involvement and way on involvement.

5.2 Conclusions

5.2.1. Influence of funds on completion rate of construction projects

In conclusion, the following were made based on the first objective;

There was relationship between funding and completion rate of construction projects with ($r=0.77, P < 0.05$), Delayed Procurement process affects completion of construction project, Funding schedule affects completion of construction projects, adequate funding allocation enhances completion of construction, misappropriations of project funds lead to incompleteness of projects and Budgeting for construction project elements affects completion of construction project.

5.2.2. Influence of Project management and Leadership skills on completion rate of construction projects

In the second objective, the study sought to find out the influence of Project management and leadership skills on completion rate of construction projects. Based on this objective, the following conclusions can be made;

Good leadership of the project team enhance proper and quick project completion,

There was statistically significant and positive relationship between project management and leadership skills and completion rate of construction projects with ($r=0.68$, $P < 0.05$),

Poor knowledge of project management cripples project completion, Failure at the conceptual planning and design stages may lead to significant problems in successive stages of the project,

Supervision during construction is critical to ensure quality products and timely delivery of project and Effectiveness of construction management will affect the speed of construction.

5.2.3. The influence of stakeholder involvement on the completion of construction projects in public secondary schools

In the third objective, the study sought to investigate the influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County.

According to the study findings, it can be generally concluded that;

- Involvement of stakeholders such as the PTA, BOG, students, and the ministry in construction projects has an influence on its completion, through their level of involvement and way on involvement.
- There is a relationship between involvement of the major stakeholders and completion of the construction projects.

5.3. Recommendations

This section stipulates the recommendations to be implemented for practice and policy so as to ensure smooth, timely and successful completion of construction projects in the public secondary schools.

The government should design policies that govern the construction of projects in the learning institutions that allows for proper engagement of the major stakeholders, procurement process, sourcing of finance and engagement of the constructors in the construction of projects in public learning institutions to ensure successful completion of the projects.

Head teachers and principals of public secondary and primary schools should be trained on project management to increase their skills in supervision and management of construction projects to enhance completion rate of these projects.

Stakeholders such as PTA, students, and BOG members should be enlightened on the best way to involve themselves in the project and the extent of involvement, without interfering with construction and completion process.

5.4. Suggestion for further study

This study contributed significantly to the body of literature on factors affecting the completion rate of construction projects in public secondary schools in Bomet sub-county. The study has established existing links between funds, project management and skills and stakeholders' involvement and the completion rate of construction projects in public secondary schools. However, conclusive deductions on the effects of constructors competency on the completion of construction projects in Bomet East sub-county. Therefore further research should be carried out

to determine the effects of constructors' competency on the completion of construction projects public secondary schools in Bomet East sub-county.

The study also suggests that in future, when a similar research is to be done it should include the role of teachers, students and other education stakeholders in completion of construction projects in Bomet East sub-county.

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APPENDICES

APPENDIX I: CONSENT LETTER

Dear Respondent,

RE: REQUEST TO RESPOND TO THE STUDY QUESTIONNAIRE

I am a student at University of Nairobi Bomet Campus pursuing a Master degree in Project Planning and Management. As part of this course requirement, I am expected to carry out a research on **Factors Influencing the Completion of Construction Projects in Public Secondary Schools in Bomet East Sub-County in Bomet County, Kenya**. I therefore, humbly request for your assistance and cooperation in responding to the questions attached herewith. The information given will be treated with utmost confidentiality and will be used only for the purpose of the study.

Looking forward for your response and cooperation

Yours faithfully,

DAVID KIPYEGON LANGAT

Appendix I: Questionnaire for head teachers (Principals)

Good morning/afternoon Sir/ Madam

The researcher is carrying out a research on “**the factors influencing completion of construction projects in Public Secondary Schools in Bomet East Sub-County**”

Instructions: Please answer the questions objectively and truthfully as possible. Do not write your name anywhere on your questionnaire. Provide information as accurately as possible for it to be useful in this study. Use a tick (√) to indicate your response where appropriate.

A BACKGROUND INFORMATION

1. How old are you?
 - i. Less than 30 years []
 - ii. 31 – 40 years []
 - iii. 41 – 50 years []
 - iv. More than 50 years []
2. What is your gender?
(a) Male [] (b) Female []
3. What is your education qualification? Untrained
(a) Diploma [] (b) Graduate [] (c) Post Graduate []
4. What is the nature of your school?
(a) National [] (b) County [] (c) District []
5. Indicate the number of students in your school?
 - i. Below 200 []
 - ii. 201 – 500 []
 - iii. 501 – 1000 []
 - iv. Above 1000 []
6. In which category is your school?
(a) Day [] (b) Boarding [] (c) Day and boarding []
7. How long have you been in this school?
(a) Below 5 years [] (b) 5 - 10 years [] (c) Over 10 years []

B Project management and Leadership skills

8. Has your school undertaken any development project in the past five years?

(a) Yes [] (b) No []

9. If yes specify the type of project?

.....

10. Who was in charge of the project

(a) The principal [] (b) The BOG [] (c) The PTA []

11. Were you involved in any way in the project?

If yes, what role did you play?

12. Have you been trained in project management?

(a) Yes [] (b) No []

13. Indicate the extent to which you agree or disagree that the following project management skills influence completion of construction projects in public secondary schools in Bomet East Sub-County where **1- Strongly Dis-Agree 2– Dis-agree, 3 – uncertain 4 - Agree 5- Strongly Agree**

Influence of project management skills on completion of construction projects

Statement	1	2	3	4	5
Good leadership of the project team enhance proper and quick project completion.					
Poor knowledge of project management cripple project completion					
Failure at the conceptual planning and design stages may lead to significant problems in successive stages of the project.					
Supervision during construction is critical to ensure quality products and timely delivery of project.					
Effectiveness of construction management will affect the speed of construction.					

14. C Extent of the Influence of Funding

14. How does your school raise funds for construction projects?

- i. Through Donors []
- ii. Through Fundraising []
- iii. Through Government []
- iv. Other (please specify).....

15. Does funding influence completion rate of construction projects in Public Secondary Schools in Bomet East Sub-County?

- (a) Yes []
- (b) No []

16. Describe the magnitude of project funding levels in the construction projects you have been involved in

- i. Sufficient funds []
- ii. Intermittent Funding []
- iii. Funding in Phases []
- iv. Insufficient funding []

17. Indicate the extent of influence of funding on completion of construction in public secondary schools in Bomet East Sub-County. React on the items provided by using the scale given. Please **tick (√) appropriately**. 5= Very Great 4= Great 3= Minor 2=No effect 1=Not Sure

S no.	Funding Aspect	1	2	3	4	5
a)	Sourcing of project funds affect completion of construction projects					
b)	Budgeting for construction project elements affects completion of construction project					
c)	Procurement process					
d)	Financial reporting					
e)	Funding schedule affects completion of construction projects					
f)	Adequate funding allocation enhances completion of construction					
g)	Misappropriations of project funds lead to incompleteness of projects.					
h)	Sponsors play a key role on funding for completion of construction					

18. What advice could you offer on funding to enhance successful completion of

construction of projects in public secondary schools in Bomet East Sub-County?

.....

D Influence of stakeholder involvement on the completion of construction projects in public secondary schools in Bomet East Sub-County

19. Indicate your opinion on whether the involvement of the following stakeholders influence the completion of construction projects in public secondary schools in Bomet East Sub-County where **1- Strongly Dis-Agree 2- Dis-agree, 3 – uncertain 4 - Agree 5- Strongly Agree**

S no.	Project area	1	2	3	4	5
a)	The BOG					
b)	The PTA					
c)	Teachers					
d)	The ministry of education					

20. State how the involvements of the various stakeholders in the construction projects in public secondary schools in Bomet East Sub-County affect the completion of the projects. Please **tick (√) appropriately.**

No.	Stakeholder	Influence		
		Positively	Does Not Influence	Negatively
i.	BOG			
ii.	PTA			
iii.	Teachers			
iv.	Students			
v.	The Ministry of Education			

Thank You for your participation

Appendix II: Interview Guide for BOG Chairpersons

This interview is designed to gather information on the ongoing research to seek your opinion on the factors influencing completion of construction projects in Public Secondary Schools in Bomet East Sub-County. Your opinion will be treated with a lot of confidentiality. This information is purely for academic purposes.

1. For how long have you served in your position as the BOG chairperson?
2. How long have you been involved in the Construction projects in the school?
3. What is the highest level of education you have attained?
4. Do you have adequate training and skills in project management?
5. In your opinion, how does management and leadership skills influence the completion of construction projects in public secondary schools in Bomet East Sub-county?
6. Who are the other stakeholders involved in the construction projects you have engaged in?
7. What is the Influence of the various stakeholders towards the completion of the construction projects in your school?
8. How helpful are the plans to the project(s) that is/are to be undertaken in the County?
9. How does your school raise funds for the projects?
10. Does funding influence completion rate of construction projects in Wajir County?
11. Describe the magnitude of project funding levels in the construction projects you have been involved in.
12. What advice could you offer on funding to enhance successful completion of construction of projects in the schools in the sub-county?

Thank You for your participation

Appendix III: Interview Guide for PTA Chairpersons

This interview is designed to gather information on the ongoing research to seek your opinion on the factors influencing completion of construction projects in Public Secondary Schools in Bomet East Sub-County. Your opinion will be treated with a lot of confidentiality. This information is purely for academic purposes.

1. For how long have you served in your position as the PTA chairperson?
2. How long have you been involved in the Construction projects in the school?
3. What is the highest level of education you have attained?
4. Do you have adequate training and skills in project management?
5. In your opinion, how does management and leadership skills influence the completion of construction projects in public secondary schools in Bomet East Sub-county?
6. Who are the other stakeholders involved in the construction projects you have engaged in?
7. What is the Influence of the various stakeholders towards the completion of the construction projects in your school?
8. How helpful are the plans to the project(s) that is/are to be undertaken in the County?
9. How does your school raise funds for the projects?
10. Does funding influence completion rate of construction projects in Wajir County?
11. Describe the magnitude of project funding levels in the construction projects you have been involved in.
12. What advice could you offer on funding to enhance successful completion of construction of projects in the schools in the sub-county?

Thank You for your participation