DETERMINATES OF TIMELY COMPLETION OF ROAD PROJECTS THE CASE OF ADDIS ABABA CITY ROAD AUTHORITY LOT ONE PROJECTS

BY:

KERIAT MOHAMEDAWOL

July, 2022

Addis Ababa

DETERMINATES OF TIMELY COMPLETION OF ROAD PROJECTS THE CASE OF ADDIS ABABA CITY ROAD AUTHORITY LOT ONE PROJECTS

BY:

KERIAT MOHAMEDAWOL

ADVISOR

TEMESGEN BELAYNEH (PHD)

A THESIS SUBMITTED TO THE SCHOOL GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS OF ARTS (M.A) DEGREE IN PROJECT MANAGEMENT

July, 2022

Addis Ababa, Ethiopia

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DETERMINATES OF TIMELY COMPLETION OF ROAD PROJECTS THE CASE OF ADDIS ABABA CITY ROAD AUTHORITY LOT ONE PROJECTS

BY:

KERIAT MOHAMEDAWOL

Approved By Board of Examiners

_____	_____	_____
Dean	**Signature**	**Date**
_____	_____	_____
Advisor	**Signature**	**Date**
_____	_____	_____
External Examiner	**Signature**	**Date**
_____	_____	_____
Internal Examiner	**Signature**	**Date**

ENDORCEMENT

This thesis has been submitted to St. Mary's University School of Graduate Studies for examination with my approval as a University advisor.

_____ _____

Temesgen Belayneh (PhD) Signature & Date

DECLARATION

I declare that the research thesis entitled: “Determinates of timely completion of road projects the Case of Addis Ababa City Road Authority Lot One Projects” has been carried out by me and the research thesis is original and it has not been submitted for the award of degree or diploma at any university or institutions.

Keriat Mohamedawol _____

Signature & Date

ACKNOWLEDGEMENT

First of all, I would like to thank Almighty Allah, who has graciously blessed me all my life and given me the strength and resolve to complete this work. Nothing would have been possible without him.

Next, I would like to express my heartfelt gratitude to my advisor Temesgen Belayneh (PhD), for the valuable support, generosity in sharing his expertise and knowledge, encouragement as well as the comments and corrections he has given me from the start till the end of this thesis paper.

Finally, I would like to thank all those who are not mentioned their name here, but assisted me by providing the relevant information that I needed to complete this task successfully.

TABLE OF CONTENTS

List of Tables

List of Figures

Acronym and abbreviations

AACRA	Addis Ababa City Roads Authority
MoWUD	Ministry of works and Urban Development
GDP	Growth Development Plan
UK	United Kingdom
CPM	Construction Project Management
ICT	Information and Communication Technology

Abstract

The construction industry is dynamic in the environment due to the growing uncertainties technology, budgets, and development processes. The main aim of this study was to assess determinates of timely completion of road projects the case of Addis Ababa city road authority Lot one projects. To this end, the descriptive and explanatory research design was conducted on 226 respondents taken based on probability sampling specifically stratified sampling method, and data were gathered through questionnaire and interviewee, the validity of the research instruments was confirmed by expert review, while the reliability of the tools was found 0.909 based on Cronbach's alpha. The data were analyzed using descriptive analysis, inferential statistics, regression analysis and correlations involving SPSS version 22. The major findings of the study show that funding, procurement bureaucracy and misappropriations of project funds were factors influencing completion construction projects. The study also revealed that there is an influence of stakeholder participation on the completion of projects. The study found there was a statistically significant and positive relationship between the fund, project management, and leadership skills, stakeholder involvement and contract duration and completion of construction projects. The study concludes that adequate resource allocation, strong project leadership and stake holder involvement are essential elements in timely project delivery. Finally, the study recommends project managers should hold stakeholder engagement sessions in the lifetime of the project; contractors should employ the right professional for the right position related to work, consultant of the project should have to collect sufficient data and detail site investigation and design should be done before tender to avoid future variations and cost estimator should have to consider appropriate risk and factors.

Keywords: *fund, leader's skill, stakeholder involvement, and contract duration*

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Project can be observed as a provisional endeavor to create a unique product, service or result. Construction projects usually include the design and build of a new-fangled structure. The building industry plays a significant role in the growth and development of a country. The period taken in performing construction projects is progressively becoming an issue of major apprehension among stakeholders. All through the world, the business environment of building organizations are operating continues to bring a rapid change. The accomplishment of any project is highly reliant on its accomplishment time from start to delivery of results. This has a direct bearing on management decisions such as budgets, targets and standards Osazuwad**(**2010).

The major problem of the construction industry is facing, are the delays and the level of impact these delays on the projects to be delivered in a specified time, within allocated budget and expected quality. The main reason behind this is that construction projects are unique in nature, time-consuming, cost demanding and they are full of uncertainties. As a result, claims and disputes become common phenomena especially on large civil engineering contracts (Osazuwad, 2010).Delays in the project, completion are a common problem in the construction industry not only with an incalculable cost to society but also with devastating effects on the contracting parties. The impact of delay is that funds committed on projects do not advantages planned recipients and subsequently results in cost and time overrun. Construction project accomplishment is affected by many reasons. Each investor wants to be unquestionable of the project time and cost. This is because challenges that may affect project completion have far-reaching effects eventually on the owners' interest (Armstrong, 2010).

The building industry is significant for both the developing and industrialized economies. It contributes 10% towards GDP for developed economies and more than4% for the developing countries. The construction time has always been used as one of the benchmarks for assessing the performance of a project and the efficiency of an organization (Gwaya et al, 2017).According to Chan, (2008) hold that the most important cause of postponement in the construction sector is financing by the contractor during the project, changes in designs by the possessor or his agent during the construction, postponements in contractor's compensation and non-utilization of

professional construction management. The end-users and stakeholders of a project play a fundamentally important role in success or failure of the project).

The construction industry plays a significant character in the development and growth of a nation. Throughout the world, the business environment of construction organizations are operating continues to bring a rapid change. The major problem of construction industry is facing, are the delays and the level of impact these delays affect the projects to be delivered in a specified time, within allocated budget and expected quality. It is very rare to see that a construction project is completed on time. Likewise when shareholder requirement and gratification leads to project accomplishment within time, cost and quality, the project is successful. The chief reason behind is that construction projects are unique in nature, time consuming, cost difficult and they are full of reservations. As a result, claims and disputes become common phenomena especially on large civil engineering contracts (Osazuwad, 2010).

According to the report, 32% of projects were fruitful since they were able to be distributed on time, within budget and with predictable performance of degree of excellence, 44% of projects were brought late, over budget and with fewer features and occupations and a consequence were challenged and 24% of projects were also cancelled before they were delivered because they failed. While in a study carried out in the UK Stephenson (2010) state that in construction, conflicts happens amongst the projects' stated purposes with regard to the suitability of cost time and quality. They also classify the distinct information management parts for project managers' well-organized performance to include among others project time management which includes providing an effective project timetable for project distribution besides actually delivering on the schedule.

In Palestine, consequences indicate that the regular delay because of conclusions foremost to materials scarcity was the most significant performance influence that obstructs project conclusion. Others are being escalation of material prices, obtainability of capitals as planned finished project duration, average delay since of closures leading to materials shortage, availability of personnel with a high experience and qualifications, quality of equipment and raw resources in project, and leadership skills for project administrators, Assafet al. (2015).

According to Jonathan (2011) the most significant cause of delays in the construction sector in Kenya, is financing by the contractor during the project, fluctuations in designs by the owner or his agent throughout the construction, postponements in independent's payment and non-utilization of specialized construction management

Construction activity is an essential part of a country's infrastructure and industrial development and must be taken care of for a healthy growth of the economy. It is imperative to put an all-out effort into guaranteeing that projects are completed as per the specified objectives. An experimentation of the recent literature designates that construction projects are frequently accomplished with large cost overruns, lengthy schedules and excellence concerns. Delay is well-defined as the time overruns either outside the completion date quantified in the contract, or outside the date that the parties agreed upon delivery of the project. A postponement in the construction may reason losses, or negatively affect some or all of the project parties. The efforts of delay may include time overrun, cost overrun, disputes, arbitration, litigation, and total abandonment (Osazuwad, 2010).

Construction project delivery is affected by numerous influences. Every investor needs to be sure of the project time and cost. This is since challenges that may disturb project completion have far reaching belongings ultimately on the owners' interest. Chism and Armstrong (2010) in study carried in USA aver that in the current economic landscape, project owners are scaling down or eliminating capital construction projects due to lack of financing, indecision over costs, and concerns about potential postponements that could influence the feasibility basis of projects. McNair (2011) referring to the Australian context of applying contract advances the importance of a contractor delivering a comprehensive facility for a guaranteed price and by a certain date. It must also perform to the specified level. He additional observes that disappointment to achieve this will usually result to a contractor incurring monetary liabilities.

A project is delayed because the dangerous activities of the project were delayed. A delayed dangerous activity suggests that the completion of the activity has been hindered because the activity was started later than predictable and/or because the activity required an unpredictably extensive duration to complete. Consequently, the causes of project postponements can be identified through an examination of the reasons that produce these delayed start times or extended durations (Yang et al 2013). Rendering to Menches and Hanna (2006) timely completion is an important aspect in determining project accomplishment. Nevertheless, public construction projects are frequently behind timetable due to numerous uncertainties. According to Al-saggat cited in Yang et al (2013) identifying the reasons that affect the critical path and consequently the completion of a project is the most important aspect of delay analysis. In other words, although schedule postponements are common features in all construction projects the

identification of the main reasons of schedule delays and the operation of actions that prevent these postponements are fundamental steps for resolving delay related issues.

1.2. Statement of the problem

Maintaining balanced completion of construction projects in road have been an issue of serious concern both to the health stakeholders and contractors. Rendering to Khatak (2009), the foremost explanations and reasons of project/task disappointment are personified in four key magnitudes of the task, specifically time, cost, quality and content. The end workers and stakeholders of a project also play an essentially significant role towards success or catastrophe. According to lock (2007), declare that consequences of failure of projects can be multi-dimensional, having far reaching effects on individuals, communities and organizations. In additional observable terms time and cost attacks are shared features of disappointment of projects, resulting in delay of service or formation delivery.

According Kappelman, (2006) says that the high rate of failed/incomplete or abandoned projects negatively impacts government/organizational performance, costing tax payer billions of money losses. Construction projects are famous for failing to complete in time being over budgeted, late and saddled with scope creep, as well as for poor communication protocols and inadequate controls around possibility change management this particularly distinct in not-for-profit organizations (Guerin, 2012). Well-timed completion of construction project is important if the project purposes and accomplishment is to be achieved. A project that is completed in time exhibits overall efficiency of project planning, management and implementation and effective tracking project progress. When the project is not completed according to the initial time plan, a delay occurs. A postponement is a situation whereby an act or event that extents the time required to perform the tasks under the contract (Sambasivan, 2007). It is the postponement of time from the original estimated completion time which might be caused by the contractor, owner or consultant as well as external factors Koushki and Kartam, 2004).

The main impact of delays is upsurge in project cost, which reasons the drain in project contingency fund, According to Chism and Armstrong (2010) state that in construction time is money. If the contractor exhausts the contingency and is unable to make profit in the project, he may abandon the project and allow the client to attach the performance security. This determination in turn reason major sufferers in multiple fronts from the customer. This scenario

will include overpowering other variations, disputes, bludgeoning project budget claims and often a painful end to the client whose dream may end up in abandonment.

According to Sweis (2007) mentioned construction postponements are often responsible for turning profitable projects into losing ventures; Time overrun 'always' consequence in the project facing cost overrun and price escalations. Price escalation not only produces delays in construction projects but also reasons the need to reduce the scope or even stop projects. Even when the project is not cancelled, there are problems: for example, the owner has to find increased budget(s) for the project from alternative funds. If an alternative fund sources is not found, the project has to be brought to a complete stop or to continue the project in a different way. Hence, the harmful effects of delay and the negative impacts of cost overruns are extremely significant problems, for those who are involved in the project namely: the local contractor, the consultant and owner, as well as the international contractor, consultant and investor.

Ismael (2016), reported time overrun is widespread to construction projects in Ethiopia. He articulated the range of postponements in percentage and he supposed he has inspected 13 projects in Ethiopia and obtained the delays encountered in most of the projects range between 100% and 460% of the original contract time. Projects delay is the major cause of state of time extension and associated cost overrun. In Ethiopia, the present state of the construction industry falls short of meeting domestic and international quality standards and the performance demand expected from the sector. Public construction projects in Ethiopia are fragments of the country's development initiative. It shared considerable amount of the country's scarce financial resources. In Ethiopia, the building industry is the maximum recipient of management economical in terms of administration development program. Consequently, public construction projects consume an average annual rate of nearly 60%, according to MoWUD, (2016), and 58.2% according to Wubishet, (2014), of the government's capital budget.

Construction projects have problems with construction techniques and management as well as limitation of funds and time. The dangerous problems are powerlessness to complete the projects on schedule, low quality work and cost overrun. In wide-ranging, most construction projects knowledge time and cost overruns during their execution phase. Thus clearly there are factors which play into account to affect completion of construction projects. This is since it is a global singularity that construction projects have not relished a smooth implementation all the way to completion. On the contrary many projects have been affected by various challenges greatly

affecting their conclusion. It is a major concern for every shareholder in a project to comprehend these factors. This research study therefore looks at the factors that will affect completion of construction projects that the stakeholders will need to address. It is hoped that in addressing these factors, the success in completion of construction projects will greatly be enhanced. In developing countries like Ethiopia, 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.

A preliminary informal review by the researcher on the construction projects in road projects the case of Addis Ababa city road authority lot one Project 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. Delays and non-completion of projects from initial cost plan has been common on construction sites. However, little or no efforts have been made to curtail the phenomenon. There have been numerous documented studies on unsuccessful or stalled construction projects. However, there has not been that much particular research to address determinants of timely completion of road projects the case of Addis Ababa City road Authority lot one projects.

1.3. Objectives of the study

1.3.1 General objective of the study

- The main objective of the study was to assess factors influencing completion of construction projects the case of Addis Ababa City road Authority lot one projects

1.3.2 Specific objective of the study

- To examine the extent to which funding influences the completion of the construction projects the case of Addis Ababa City road Authority lot one projects.
- To investigate how management and leadership support influences completion of construction projects in the study are.
- To investigate the influence of stakeholder involvement on the completion of construction projects in the case of Addis Ababa City road Authority lot one projects.
- To examine the extent to which contract duration influences the completion of the construction projects in the study are.

1.4. Research Questions

1. To what extent does funding influence the completion of the construction projects t?
2. How does management and leadership support influence completion of construction projects?
3. In what ways does stakeholder involvement influence completion of construction projects?
4. To what extent does contract duration influence completion of construction projects?

1.5. Scope and Limitation of the Study

The research concentrates on the discussion relating to determinates of timely completion of road projects the case of Addis Ababa city road authority lot one project. Several factors cause for the problem of completion of construction projects, but in the case of research it had chosen to focus on only how funding, management and leadership support and stakeholders and contract duration involvement factors for delay of completion of construction projects. It does not include other variables beyond the funding, management and leadership support and stakeholders involvement factors.

The study area is conduct at only the case of Addis Ababa City road Authority (AACRA) lot one projects. The researcher is selecting the study for a number of reasons. First, Addis Ababa City as compared to the rest of other possibly was relatively be a good representative and is helpful to get valuable information for the study. Second, the researcher is well aware of the problem in the city (lived and worked in the town in some organization of Addis Ababa City). Addis Ababa City is easily accessible to the center of the country and finally to save researcher's money and time. It is understandable that research employment can't be completely free of charge from constraint.

The constraint of the study was geographically the investigate have be done only Addis Ababa city, if it would have been ways at region and country in general, having comparable or similar context with wide area coverage and a much larger number of respondents would have provided much deeper and useful information. The further limitations were methodologically there are extraneous variables which were beyond the researcher control such as respondents' honesty; personal biases and uncontrolled setting of the study. The research instruments are not standardized. Therefore a validity and reliability test was being done to produce a credible measurement of the research variables. Additional restraint of the research was the respondents' reaction towards the questionnaires. Due to the main source of data are primary data and top

management position and most of them does not timely responding which have an impact on the research schedules.

Thus the researcher was forced to gather important information from the staff list and informants, and this made the data collection lengthy and difficult. Even though the researcher planned to use tape recorder during the interview, respondents were not voluntary and the researcher was forced to use writing on notes. However, favorable situations were considered for the respondents to minimize situational factors that affect the quality of the data. However, to increase the reliability and accuracy of the finding the researcher was done beyond his potential expectation and effectively completes the research task successfully.

1.6. Significance of the Study

This study may help construction professionals increase the success of construction projects completion by managing well the factors that will help their successful completion. The draftsmen, engineers, quantity inspectors, construction project managers and site agents may advantage from this study by applying the consequences of its findings while resounding out construction projects. The finding of this study will have both theoretical and practical implications for the future study on factors influencing completion of construction projects. Theoretically, the study is expected to contribute to the improvement of knowledge about factors influencing completion of construction projects.

Project developers or clients may also benefit from the findings of this study and therefore achieve greater success in their construction projects. This is since they may apply the conclusions of this study in safeguarding the risk factors that may cause their projects not be delivered successfully are mitigated. The implication from the study will also show the way to policy makers' new direction in formulation and implementation of policies.

The researcher expects the research is important to all concerned with county's economic development. Specifically for political leaders, it provides clearness and specificity concerning the economic, social, leadership and technological practices of factors influencing completion of construction projects with the strongest relations to development. It will also be a reference for many policy makers, researchers, students, NGOs and even other people who have close interest on the subject matter; researchers on the subject matter will also refer this study as a literature review. Finally it was envisaged that the study will add new knowledge to the existing literature on factors influencing completion of construction projects. It was also expected to enable

scholars and policy-makers to design more progressive leadership programmers and policies aimed at ensuring factors influencing completion of construction projects.

1.7. Organization of the Paper

This study is organized in five chapters. Chapter one provide a background of the study, 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 and scope 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. 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, 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 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. Theoretical review

Power and Influence Theories As discussed by Kotter (1985) "power is the ability to influence others to get things done, while authority is the formal rights that come to a person who occupies a particular position, since power does not necessarily accompany a position." Problems always arise when power is imposed without the backing of authority, which almost invariably is opposed. Using legitimate power, a project manager demands compliance from subordinates because she has the title of project manager. By using rewards such as bonuses or other compensation, project managers encourage performance

2.2.1. Theory on Completion of the Construction Projects

2.2.1.1 Theory of Constraints in Project Management

The primary challenge of project management is to achieve all of the project goals and objectives while honoring the preconceived project constraints, Lamb, Robert, Boyden (2002) typical constraints are scope, time, and budget. The secondary and more ambitious challenge is to optimize the allocation and integration of inputs necessary to meet pre-defined objectives. Goldratt (1984) in his theory of constraints asserts that any manageable system is limited in achieving more of its goal by a very small number of constraints, and that there is always at least one constraint. Theory of Constraints is based on the premise that the rate of goal achievement is limited by at least one constraining process. Only by increasing flow through the constraint can overall throughput be increased (Cox, Jeff; Goldratt, Eliyahu (1986). Constraints can be internal or external to the system. An internal constraint is in evidence when the market demands more from the system than it can deliver. If this is the case, then the focus of the organization should be on

discovering that constraint and following the five focusing steps to open it up (and potentially remove it). An external constraint exists when the system can produce more than the market will bear. If this is the case, then the organization should focus on mechanisms to create more demand for its products or services. Internal constraints are often caused by equipment, people and policies, McKinsey (2001). This theory has provided a substantially better insight into the dimensions and complexity of the problem facing WSBs in project management. It also equips the researcher with a complete and thorough justification of the subsequent steps as well as with a realization of the importance of undertaking the research.

2.2.1.2. Stakeholder theory

This study would be guided by stakeholder theory (Freeman (1984), Resource dependence theory (Pfeiffer 1981, 1997) and institutional theory (Mintzberg et al. 1998; Mintzberg and Lampel 1999). The stakeholder theory organizations and their activities through constituency concepts and propositions, The idea is that 'holders' who have 'stakes' interact with the organization and thus make its operation possible. It's a theory that explains how organizations function with respect to various constituencies with whom they are inextricably embedded. Stakeholder theory development has centered on defining the stakeholder concept and classifying stakeholders into categories that provide an understanding of individual stakeholder relationships. Freeman's definition of stakeholder as any group or individual who can affect or who is affected by the achievement of the firm's objectives and continues to provide the boundaries of what constitutes a stake, He argues that a stakeholder has some form of capital, either financial or human, at risk and, therefore, has something to lose or gain depending on a firm's behavior.

To these elements, Waddock (2002) adds a tie or tether that creates a bond of some sort. A stakeholder theory of the organization requires an understanding of the types of stakeholder influence but also how organizations respond to those influences. Each firm faces a different set of stakeholders, which aggregate into unique patterns of influence. Ambler and Wilson (1995) demonstrate that firms do not simply respond to each stakeholder individually; they respond, rather, to the interaction of multiple influences from the entire stakeholder set. Thus, organizations response to their stakeholders requires an analysis of the complex array of multiple, interdependent relationships existing within the stakeholder environment. The conceptual competition within stakeholder theory, between legitimacy and power, is reflected in

virtually every major theory of the firm particularly in agency, behavioral, institutional, population ecology, resource dependence and transaction cost theories (Campbell, 2007).

2.2.1.3 Resource Dependence Theory

Resource dependence theory suggests that power accrues to those who control resources needed by the organization, thereby creating power differentials among parties (Pfeiffer, 1997b), and it confirms that the possession of resource power makes stakeholder important to a firm. Legitimacy is achieved if patterns of organizational practice are in congruence with the wider social system (Scott 1987; Powell and DiMaggio1991). Institutional theory describes this adaptation. Strategy processes deriving from resource dependence are primarily proactive; institutionalized processes are reactive (Mintzberg et al. 1998; Mintzberg and Lampel 1999); while stakeholder engagement is inherently interactive (Preston and Post 1975), based on mutual interdependence among actors. Corporate responsibility and the maintenance of sound organizational ethics may not invariably depend wholly on the strategic behavior induced by the anticipation of organizational gain.

Organizations may act ethically or responsibly not only because of any direct link to a positive organizational outcome (e.g. greater prestige or more resources) but merely because it would be unthinkable to do otherwise. In this way, organizational behavior may be driven not by processes of interest mobilization (DiMaggio 1988) but by preconscious acceptance of institutionalized values or practices. Within the resource dependence perspective, theory assumes that organizations maybe interest - driven and that organizations exercise some degree of control or influence over the resource environment or the organization's exchange partners for the purposes of achieving stability. Theorists argue that organizational stability is achieved through the exercise of power, control or the negotiation of interdependences for purposes of achieving a predictable or stable inflow of vital resources and reducing environmental uncertainty.

2.2.2. Factors influencing Completion of the Construction Projects

2.2.2.1. Funding

Chan (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. To ensure value for money, a balance should be struck between initial capital costs and expected replacement costs over the life of the facility.

Ochieng (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).

2.2.2.2. Management and Leadership

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).

2.2.2.2.1. 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.

2.2.2.2.2. Quality of Management during Construction

Cooke-Davis (2001) declares 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 Ping-Pong 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.

2.2.2.3. Stakeholder Involvement

The rapid expansion of t 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.

2.2. The Empirical Review

The reviewed literature revealed various studies in different parts of the world that have largely touched on factors relating to project delivery in terms of quality, the most important factors determining project performance in (Sudan 2012), impact of project delivery systems, cost minimization and project control on construction project success (Ghana 2013), project cost prediction model (Nigeria 2010), managing the project environment (Canada 1995), critical factors affecting quality products in construction projects (India 2006), construction contracts duration (USA 1988). Further, determinant of successful completion of rural electrification projects in Kenya (Kenya 2013) and influences on construction delivery time (South Africa 2010), these studies have been carried out and published. Construction Delay is generally acknowledged as the most common, costly, complex and risky problem encountered in construction projects. Because of the overriding importance of time for both the owner and the

contractor, it is the source of frequent disputes and claims leading to lawsuits (Ahmad et al (2003)).

2.3. Conceptual Framework the Study

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, construction contract duration affects the completion road projects is (dependent variables).

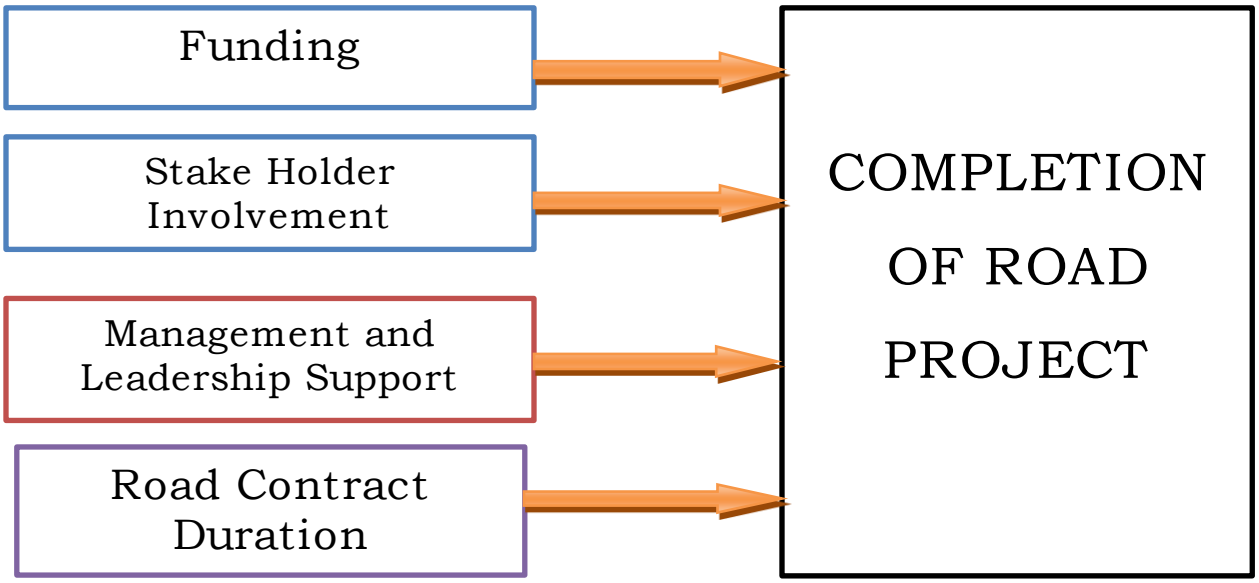


Figure 2: conceptual frame wok of completion of construction project

Source: With some modification extracted from (Chan et al, 2008)

Definition of Key Terms

- **Project:** Is an individual or collaborative enterprise that is carefully planned and designed to achieve a particular aim.
- **Construction:** Is the process by which material, equipment, machinery are assembled into a permanent facility
- **Project cost.** Project cost is the total project cost which includes design fees, material costs, and construction costs, permit fees, land, furnishings, financing and all other costs that are incurred in completing a project (McDough, 2013).

- **Project Plan**: A formal document designed to guide the control and execution of a project (Project Management Body of Knowledge, 2012).
- **Project managemen**t: 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.
- **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.
- **Project managers:** Person in charge of projects

CHAPTER THREE
RESEARCH METHODOLOGY

Introduction

This part explains how the study was carried out in order to achieve the preferred objectives. It includes research design, study area, target population, source of data, and method of data collection, validity and reliability and method of data analysis, model specification and finally ethical issues that was considered in the study.

3.1. Research Approaches and design

The method employed in this research is quantitative research method. Since the research is survey it more emphasizes quantitative research approach. Using multiple approaches can capitalize on the strengths of each approach and offset their different weaknesses and provides a better understanding of the research problems than either approach alone. It could also provide more comprehensive answers to research questions going beyond the limitations of a single approach (Woodley,2004). It is also practical in the sense that the researcher is free to use all methods possible to address a research problem (Cresswell,2006). It makes use of strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problem. The data collection also involves gathering numeric information.

According to Kothari (1985) research design constitutes the blueprint for the collection, measurement and analysis of data. The study was designed to use cross-sectional studies which had been taking the study within a particular timeframe. Research design helps researchers to provide data that can answer the research questions or attain the research objectives. There are many types of research designs, depending on the types of data that the researcher want to collect and analyze, such as action, causal, experiment, cross-sectional, descriptive and so on. This research is a careful inquiry or examination to discover new information or relationship and to expand and verify existing knowledge. The study used descriptive and explanatory research approach. Descriptive research design deals on describing the characteristics of a particular individual, or of a group.

Explanatory research design the first type of correlation design and conducted when researchers want to explore the extents to which two or more variables co-vary, that is, where changes in one

variable are reflected in changes in the other (Creswell, 2008).According to Kothari (2004) the emphasis of explanatory research is on studying a situation or a problem in order to explain the relationships between variables. In this case the researcher were used to examine the relationship between stakeholder involvement; funds and leadership and management of project factors, contract duration and completion construction projects, in addition to see their cause and effect relationship on each other.

3.2. Variables, data source and data collection methods

To respond the stated research questions and to achieve the intended objectives, the study were used both quantitative and qualitative type. For the proper achievement of the objectives of the study; the researcher was used primary data and secondary data source. The primary source of data was the main basis for this study. Primary data was collected by using structured questionnaires. Secondary sources of data were gathered from published and unpublished those are various documents, annual reports, directives, and various books written on issues related to the topic.

The method of data collection which was employed in this study was a survey method; the survey research method was used for this research because it is an appropriate method for measuring respondent's opinion and attitude. The data collection tool that was used to gather data from sample respondents is questionnaire. The questionnaire is an instrument by which information is obtained from respondents in written form. Questionnaires were prepared in English and translated to Amharic in order to be easily understood for the respondents.

To answer the research questions raised, the researcher goes through a series of data gathering procedures. These procedures help the researcher to get genuine and relevant data from the sample units, thus, after having letters of authorization from St. Mary's University. The primary step in the data collection process is to get motivation of the subjects to fill the questionnaire by self-introducing, once the subjects will to fill the questionnaire and able to return the papers within a short range of time to voluntarily collect the papers collaborating with leaders from each sector. Finally, questionnaires were distributed to each respondent**.**

3.3. Target population and sampling

Population is the whole group of people to which an investigator intends the results of a study to apply. According to Kothari (2004) uses the term "target population" to submit to the intended population covered by a study in a specific geographical area such as country, region and town in terms of age group and gender. Accordingly, the target population of this research paper were

contractor, sub-contractors, engineers, laboratory engineers, project manager, labor Forman, masonry, structural Forman, planning, work execution, engineering service, all drivers, laborer supportive team and material maintenance and administration team leaders, and, consultancies.

To decide on sample respondents from the total study population, probability sampling specifically stratified sampling technique was employed since it avoids biases and helps to generalize data gained from sample respondents and avoiding an error that could arise from sampling. Additionally this method was used because it ensures that each number of the target population too has an equal and independent chance of being included in the sample. Questionnaires were sent to randomly selected contractor, sub-contractors, engineers, laboratory engineers, project manager, labor Forman, masonry structural Forman, planning, work execution, engineering service, dam trackers, Sino tracer driver and all drivers, supportive and material maintenance and administration team leaders, and, consultancies their total number is 575 employees.

According to Kothari (2004) sample size is supposed to be optimum in which it fulfills the requirement of efficiency, representativeness, reliability and flexibility. The number depends on the accuracy needed, the population size, population heterogeneity and resources available. So, the sample size should be determined by using statistical formula. Of course, different authors use different formulas to determine the sample size of the study. For the purpose of this study, the formula set by Yamane's 1967 was used to determine the sample size, which is reliable when the population size is known.

The Yamane's sample formula for calculations of sample sizes.

$$n = \frac{N}{1 + (N)e^2}$$

$$= \frac{575}{1+(575)0.05^2}$$

$$= \frac{575}{1+(1.4375)}$$

$$= 235$$

Where; N = Total population

n = sample size

e = margin of error (0.05).

The conventional confidence levels of 95 percent were used to ensure a more accurate result

Source: Yamane's formula 1967.

3.4. Method of Data Analysis

Descriptive Statistics

Both quantitative and qualitative data analysis method was employed in order to answer the basic research questions and to achieve the objectives of the study. In the case of quantitative data analysis, the data from the questionnaire was entered into computer using statistical package for social science (SPSS) version 22 computer programs for data analysis and quantitatively analyzed by using descriptive statistics such as percentage , frequency , standard divisions' and mean. The way of the researcher analyze the data, for understanding and successful accomplishment of the study, data collect from different primary and secondary sources were record, edited, organized, analyzed, interpreted and presented in relation to research questions. Data collected using the above mentioned instruments were analyzed using both qualitative and quantitative. Quantitative data would be interpreted through questionnaire survey and presented in graphs and tables with frequency distributions, standard deviation and means.

Inferential Statistics

Inferential statistics were used to identify the degree of correlation between the variables using Pearson's Correlation. Further regression analysis would be done to determine the degree of relationship between dependent and independent variables meaning funding, management and leadership, stakeholders and management competency, construction contract duration affects the completion construction projects is (dependent variables).

Model Specification

In this study multiple linear regression models were used to achieve research objectives. The basic objective of using multiple linear regression analysis in this study is to make the research more effective in analyzing impacts dependent and independent variables. According to Gujarati (1995) defines a regression function as follows:

$$\mathbf{Y = \beta\ 0 + \beta\ 1X1 + \beta\ 2X2 + \ldots + \beta\ n\ Xn + ui}$$

Where Y is the dependent variable (completion of road project)

$\boldsymbol{\beta n}$is the coefficient of independent variables

Xn is independent variables (Contract duration, stakeholder involvement, funding and leadership and management of the project)

Ui is error term.

Multiple linear regression model assumptions will be conducted based on a Gujarati (1995). Checking goodness-of-fit carry significant benefits for the research; because once the model is fitted, it is effective in describing the outcome of variables. Let summarize each assumptions;

Multicollinearity

It meant the existence of a perfect or exact, linear relationship among some or all explanatory variables of a regression model. If there is perfect colinearity among the independent variables, their regression coefficients are indeterminate and their standard errors are not defined. Therefore, independence of independent variables was tested by Variance inflation factor (VIF) and tolerance.

$$VIF(Xj) = \frac{1}{1 - RJ}2$$

Tolerance 1-R^2

Where; Xj = the j^{th} explanatory variables regressed on the other independent variables.

RJ^2= the coefficient of determination when the variable Xj regressed on the remaining explanatory variable.

Normality

The distribution of residuals should be normal at each value of the dependent variable is one of multiple linear regression assumption. This means that errors are normally distributed, and that a plot of the values of the residuals was approximated a normal curve (Keith, 2006). According to Gujarati (1995) ui are independently and normally distributed with mean zero and a common variance α^2 was given as; ui⁓IN (0, α^2)

Homoscedasticity

The variance of the residuals for every set of values for the independent variable is equal and violation is called Heteroscedasticity. This means that researcher assume that errors are spread out consistently between the variables. Symbolically described as follow;

$$\text{var} = \left(\frac{ui}{x1,\ldots..,xk!}\right)\alpha^2$$

For all I *Ui*is disturbance term or error term Xkis explanatory variable α2 is the constant or homoscedastic variance of *ui.*

Reliability of the instrument

Reliability is a measure of the degree to which a research instrument yields consistent results or data the same way each time it is used under the same condition with the same

subjects. If consistent results are obtained by the same participants in the same repeated measurements then the higher the reliability of the measuring procedure. If a research tool is consistent and stable, and hence, predictable and accurate, it is described as reliable. Inter-item reliability test were applied to test the reliability of the research instrument. Multiple items will be used to measure a single concept in the questionnaire. This involved a set of related questions which was designed to measure a certain concept being associated with each other. Cronbach's coefficient α test was applied to test the reliability. This was applied for each of the four research questions.

Table 2: Below Indicates the Computed Internal Reliability Coefficients.

No	Detail description on the title of the questions	No of items	Cronbach's alpha
1.	fund	5	0.778
2.	Project management and leaders skill	6	0.845
3.	stakeholder involvement	5	0.982
4.	Contract duration	5	0.866
	Overall reliability result	21	0.909

The reliability of the instrument was measured by using Cronbach's alpha test. A reliability test is performed to check the consistency and accuracy of the measurement scales. According to William's (1986) he suggested that the reliability coefficients of the Cronbach's alpha result >0.9 excellent, >0.8 good, >0.7 acceptable, < 0.6 questionable, and < 0.5 poor. The internal consistency reliability results the study was 0.90 that is classified under excellent categories.

Validity of Research Instruments

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 instrument to measure what it is designed to measure, results obtained from the analysis of the data actually represent the phenomenon under study. defines validity as the degree to which the researcher has measured what he set out to measure. It is the accurateness and meaningfulness of inferences which are based on research results. Validity therefore is whether an instrument is on target in measuring what is expected to measure. To check the validity of the instrument the researcher worked with the supervisor as the expert and agreed whether the instrument was valid or not. The tool was also subjected to peers review to ensure its

validity. The instrument was subjected to face validity, content validity test and construct validity test through testing it using the research done in the past.

Ethical Considerations

These are the principles or standards that protect the rights of participants in a research study. They are actions taken to assure safety and rights of participants are not violating whatsoever. These standards include voluntary participation, informed permission, and confidentiality of information, ambiguity to research participants and approval from relevant authorities. In this study ,participants will voluntarily allow to participate and prospective research participants will fully inform on procedures ,benefits and risks involved in the research after which they were voluntarily ask to fill informed consent forms to participate .They was guaranteed of confidentiality of the information and to ensure this was achieved participants will not ask to give their names or indicate anything on the research instruments that could be used to identify or link them to the study documents or reports .

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Introduction

This chapter presents findings and analysis, interpretation and discussion from the study about the factors affecting completion of project in public sector. It deals with results and discussions of the data that are categorized into two parts. The first part treats the characteristics of the respondents which describe the study population by sex, age, background and marital status, while the second part deals with the analysis of findings of the study that were gathered through questionnaire and interview.

Response Rate of Respondents

Based on sample size, questionnaires were prepared and distributed to the respondent, and from these 9 respondents did not return back the questionnaire, Due to this reason, 96.17% of the distributed questioners are collected, almost all respondent express their view properly and few questions are left vacant without giving their respond. According to Mugenda (2003) a response rate of 50% is adequate for analysis and reporting, 60% is good and 70% and over is excellent. So the response rate of the researcher is excellent and enough for analysis.

Table 4.1: Response rate

No	Data collection tools	No. of respondents	No. of answered	No. of un answered	Response rate
1.	Questionnaires	235	226	9	96.17

Source: own survey, 2022

4.1. Demographic Characteristics of the Respondents

4.2 Background of the Respondents

No	**Gender**	Frequency	Cumulative Percent
1.	Male	140	61.9
	Female	86	38.1
2.	**Age**		
	18-30 years	50	22.1
	31-40 years	96	42.5
	41-50 year	50	22.1

	51-60 years	28	12.4
	61 and above	2	.9
3.	**Marital Status**		
	Married	108	47.8
	Single	43	19
	Divorced	38	16.8
	Widowed	37	16.4
4.	**Education level**		
	Uneducated	11	4.9
	Primary school	13	5.8
	Secondary school	29	12.8
	10 grade complete	14	6.2
	Certificate	20	8.8
	Diploma	55	24.3
	Bachelor degree	78	34.5
	Master's degree and above	6	2.7
5.	**Experience**		
	Below 5 year	87	38.5
	6-10 years	56	24.77
	11-15 year	44	19.46
	16-20years	19	8.4
	21-25 years	14	6.2
	26-35 years	6	2.65

Source survey 2022

Table 4.2 shows that, 140(61.9percent) percent of the respondents are male whereas 86 (38.1percent) percent of respondents are female. This trend shows male supremacy over female counterparts in the population. The table also shows that age of respondents 50 (22.1%) were at the age category of 18-30 years, 96 (42.5%) the age category of 31-40, 50(222.1%) of them at the category of 41-50, 28 (12.4%) of them at the category of 51-60 and the remaining 2(0.9%) 61 and above age category. The data indicate that most staff was occupied by a young employee; its opportunity for the organization due to young employees can bring fresh perspective and a

different way of thinking to the organization. Most young workers are eager to learn, build their experience and apply their skills in the workforce. This enthusiasm is great for team building, productivity and workplace moral.

Next the marital status of respondents, It shows that 108(47.8 percent) were married while 43(19 percent) were single, 38(16.8 percent) were divorced and the remaining 37(16.4percent) are widowed. Education signifies one of the vital success factors that an organization needs in order to succeed in their production activities. As can be seen in the table, the qualification of respondents was found to be 11(4.9%) uneducated, 13(5.8%) primary school, 29(12.8%) secondary school, 14(6.2%)10 grade complete, 20(88%) certificate, 55(24.3) diploma, 78(34.5%) bachelor degree and 6(2.7%) master's degree and above. This result ascertains that respondents have enough knowledge with the factors affecting completion of road project being undertaken in their respective organization and this would allow each to share their experiences, understandings and knowledge of the practices via the questionnaire.

Pertaining to the experience of respondents 87 (38.5%) respondents were with year experience below 5 years 56(24.77%), 44(19.46%) of the respondents were with experience of 6-10, 11-15 years, 19(8.4%) between the year of 16-20, 14(6.2%) of them have 21-25 year of experience and the lasting 6(2.65%) have more than 26-35years service. This indicates that there are employees who have worked with the institution for quite a long time and with their experience and knowledge about the work, the institution can get better output and maximize yield. This reflects the view of Messer and Mires (1999) who stated that the greatest employee's development occurs when managers continuously coach and mentor their employees' based on on-the-job training.

4.2. Determinants of timely completion of road projects

4.2. 1.Descriptive statistics analysis

The analysis is based on the assumption Zaidatol (2009) comparison bases of mean score for five point Likert scale instruments is used to compare the mean value.

Table 4.3: Gender of Respondents

No	**Mean Score**	**Description**
1	< 3.39	Low

2	3.40 - 3.79	Moderate
3	> 3.80	High

Source: Zaidation (2009)

According to Zaidation (2009), the mean score below 3.39 is considered as low; the mean score from 3.40 up to 3.79 is considered as moderate and mean score above 3.8 is considered as high.

4.2.1.1. Funding

In the first study question, the study sought to investigate the extent funding influence the completion of road projects. Based on the responses of respondents the descriptive analysis was performed to compare using mean and standard deviation.

Table 4.4 Summary of Respondents' Opinion on Influence of Funding

No	Funding	No	Mean	Std. Deviation
1.	Sourcing of project funds influence completion of road projects	226	3.8	1.127
2.	Budgeting for construction project elements affects completion of road project	226	3.81	1.158
3.	Funding schedule influence completion of road projects	226	3.78	1.255
4.	Adequate funding allocation enhances completion of road	226	3.82	1.151
5.	Sponsors play a key role on funding for completion of road	226	3.73	1.036
	Average mean		**3.78**	**1.13**

Source; survey, 2022

In relation to Item 1, on Table 4:4 respondents request to rate sourcing of project funds influence road of construction projects at grand mean of 3.8. Majority of the respondent confirmed that of project funds influence completion of road projects. These findings are similar to study made by Dissanayaka (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 and finance is also a concern to the other organizations involved in a project such as the general contractor and material suppliers.

In concerning to item 2, on table 4:4 and respondents request to charge budgeting for construction project elements affects completion of road project at mean of 3.81. The lion share

of the respondent established that budgeting for road project elements affects completion of road project. Its save to conclude found that budgeting for road project elements would affects completion of road project as budgeting for a project is governed by the amount of finance available. This Finding is consistent with the finding of Bathurst, (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.

Pertaining to item 3, on table 4:4 and respondents submit an application for to charge funding schedule influence completion of road projects at mean of 3.78. Majority of respondent agreed that funding schedule influence completion of road projects. This finding is supported with the finding of 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.

Regarding to item 4, on table 4.:4 and respondents is appropriate for to charge adequate funding allocation enhances completion of road at grand mean of3.82.Larger part of the respondent agreed that adequate funding allocation enhances completion of road. From the finding the researcher concluded that delayed procurement process affects completion of road 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. In line with the above finding of the conference result shows 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

4.2.1.2 Project Management and Leadership Skills

The study required to determine whether management and leadership support influences completion of road projects in the study area. To achieve this, major respondents were asked to indicate whether they had been trained in project management, and how this influenced their management skills.

Table 4:5: Summary of respondents' opinion on project management and leadership skills

No	Project Management and Leadership skills	No	Mean	Std. Deviation
1.	Is good leadership of the project team improve proper project completion.	226	3.91	1.035
2.	Poor knowledge of project management affect project completion	226	4.24	.933
3.	Failure at the intangible planning and design stages may lead to significant problems in succeeding stages of the project.	226	4.13	.990
4.	Supervision during construction is critical to ensure quality products and timely delivery of project.	226	3.60	1.005
5.	Effectiveness of construction management will affect the speed of road.	226	4.01	1.035
	Average mean	226	3.95	1.01

Source; survey, 2022

Concerning Item 1, on table 4:5 respondents were request to rate is good leadership of the project team improve proper project completion at mean score of 3.91. The lion share of the respondent agreed that good leadership of the project team improve proper project completion. From the finding the researcher concluded that project management skills could influence the completion rate of road projects through various fronts meaning poor leadership skills among the project managers could slow down the project completion.

In relation to Item 2, on table 4:5 respondents were invited to charge poor knowledge of project management affect project completion at mean score of 4.24. This was also confirmed by majority of the respondents agreed that poor knowledge of project management could cripple project completion. This finding is similar with the finding of Andawei, (2012) in their study he 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.

In relation to Item 3, on table 4:5 respondents were invited to charge failure at the intangible planning and design stages may lead to significant problems in succeeding stages of the project at mean score of 4.13 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.

Concerning Item 4, on table 4:5 respondents were asked to rate supervision during construction is critical to ensure quality products and timely delivery of project at mean score of 3.6. Majority of the respondent confirmed that supervision during construction is critical to ensure quality products and timely delivery of project. Therefore, any fall in supervision could cause delay and unsuccessful completion of construction projects. Kaming , (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.

In relation to Item 5, on table 4:5 respondents were invited to price effectiveness of construction management will affect the speed of construction at mean score of 4.01. Majority of responded agreed that effectiveness of construction management will affect the speed of construction. 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

4.2.1.3 Stakeholder Involvement

The study wanted to investigate the influence of stakeholder involvement on the completion of road projects in the study area. To attain this, respondents were requested to indicate the amount to which they agreed or disagreed with the following statement relating to influence of stakeholder involvement on the completion of road projects.

Table 4:6: Summary of respondents' opinion on Stakeholder involvement influence

No	**Stakeholder involvement**	No	Mean	Std. Deviation
1.	Involvement of the major stakeholders improves completion of the road projects.	226	4.07	1.007
2.	There is a relationship between involvement of the major stakeholders and completion of the road projects.	226	4.18	1.039
3.	Some stakeholders interfere with the road due to vested interest affect project completion.	226	3.9	1.112
4.	Poor coordination of the stakeholders can cause delay in project completion	226	4.06	.998
	Average mean	226	4.04	1.035

Source; survey, 2022

Concerning Item 1, on table 4:6 respondents were asked to rate involvement of the major stakeholders improves completion of the road projects at mean score of 4.07. Greater part of the respondent confirmed that Involvement of the major stakeholders improves completion of the road projects. The result of the interview confirmed that 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 managers and especially principals should therefore, undertake professional courses that are tailored to enable them acquire relevant skills for project management

Pertaining to Item 2, on table 4:6 respondents were asked to rate there is a relationship between involvement of the major stakeholders and completion of the road projects at mean of 4.18. Majority of the respondents also agreed that there was a relationship between involvement of the major stakeholders and completion of the road projects. Nevertheless, their contribution to project completion depended on level of involvement.

In relation to Item 3, on table 4:6 respondents were invited to charge some stakeholders interfere with the road project due to vested interest affect project completion at grand mean of 3.9.Majority of the respondent agreed that some stakeholders interfere with the road project due to vested interest affect road project completion. Concerning Item 4, on Table 6, respondents were asked to rate Poor coordination of the stakeholders can cause delay in project completion at

mean score of 4.06. Large part of responded confirmed poor coordination of the stakeholders can cause delay in project completion

4.2.1.4. Contract Duration

The revise required to investigate the influence of contract duration on the completion of road projects in the study area. To attain this, respondents were requested to indicate the amount to which they agreed or disagreed with the following statement relating to influence of contract duration on the completion of road projects.

Table 4:7: Summary of Respondents' Opinion on Contract Duration

No	**Contract duration**	No	Mean	Std. Deviation
1.	Project Scope affect project completion	226	4.03	1.160
2.	Poor contract management, changes in site condition, shortage of material and improper planning affect road project completion	226	3.84	1.272
3.	The problems of contractors shortage in infrastructure, main supply of resources and clients and consultants affect road project completion	226	4.26	.959
4.	The problem of vague work schedule influence road project completion	226	3.67	1.026
	Average mean	**226**	**3.95**	**1.103**

Source; survey, 2022

Pertaining to Item 1, on table 4:7 respondents are asked to price project Scope affect road project 7completion at mean score of 4.03. Lion share of the responded agreed that Project Scope affect road project completion.

Concerning Item 2, on table 4:7 respondents were asked to rate poor contract management, changes in site condition, shortage of material and improper planning affect road project completion at mean score of 3.84. Large part of the respondent confirmed that Poor contract management, changes in site condition, shortage of material and improper planning affect road project completion.

Concerning Item 3, on table 4:7 respondents were asked the problems of contractor's shortage in infrastructure, main supply of resources and clients and consultants affect road project

completion at grand mean of 4.26. The lion share of the respondent agreed that the problems of contractor's shortage in infrastructure, main supply of resources and clients and consultants affect project completion. Concerning Item 4, on Table 4.7, respondents are asked the problem of vague work schedule influence road project completion at grand mean score of 3.67. Majority of the respondent agreed that the problem of vague work schedule influence road project completion.

4.2.1.5. Summary of Descriptive Statistics

Table 4:8: Summary of Results of Descriptive Statistics

No	Variables	Mean	Standard deviation
1.	Fund	3.98	1.07
2.	Project management and leaders ability	3.75	1.14
3.	Stake holder involvement	3.78	1.134
4.	Contract duration	3.67	1.243

Source; survey, 2022

From the above finding the highest influence on the completion of road project in the study area is fund at mean score of 3.98, next Stake holder involvement at 3.78 mean score, and Project management and leaders ability at mean score of 3.75 and contract duration at 3.67.

4.2.2. Inferential statistics analysis

4.2.2.1. Association between Dependent and Independent Variables

In this part of the analysis bivariate Pearson correlation coefficient has been used to examine the relationship between the dependent and independent variable. According to (Robert, 2008), Pearson correlation coefficients ranges between -1 and +.1, when 0 indicates no relationship between, -1.00 indicates a perfect negative relationship and +1.00 indicates a perfect positive relationship. For intermediary values the study uses Pallant (2010) guideline to determine the strength of the correlation, less than 0.1 indicate weak correlation, small correlation for value 0.1 to 0.29; medium/moderate for 0.3 to 0.49; and large for 0.50 to 1.00).

Table 4:9: Shows Association between Dependent and Independent Variables

Correlations						
		Completion of road project	Fund	Management and Leadership	Contact duration	stakeholder involvement
Completion of road project	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	226				
Fund	Pearson Correlation	.633**	1			
	Sig. (2-tailed)	.000				
	N	226	226			
Project management and skill	Pearson Correlation	.671**	.714**	1		
	Sig. (2-tailed)	.000	.000			
	N	226	226	226		
Contact duration	Pearson Correlation	.704**	.635**	.661**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	226	226	226	226	
stakeholder involvement	Pearson Correlation	.557**	.536**	.508**	.551**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	226	226	226	226	226
**. Correlation is significant at the 0.01 level (2-tailed).						

Source; survey 2022

From this analysis it can be noted that, fund**,** project management and leadership, stake holder involvement has significant and positive relationship with completion of road project. Therefore, they have positively correlated and strong association among each other.

4.2.2.2 Multiple Linear Regression Assumptions

Testing assumption of multiple linear regression analysis models is very important before running regression analysis. Some tests were conducted in order to ensure the appropriateness of data to assumptions regression analysis results were discussed in the following subtopics.

4.2.2.2.1 Multi-Co Linearity Test

According to Gujarati (2003) Multi-co linearity tests helps to identify the high correlation between explanatory variables and to avoid double effect of independent variable from the

model, Predictor variable should be strongly related to dependent variable but not strongly related to each other. For this purpose variance inflation factor (VIF) and tolerance test were used to check Multi-co linearity for variables if the value of VIF is less than 10 there is no Multi-co linearity and on the other hand if VIF greater than or equal to 10 there is a serious Multi-co linearity problem. In addition tolerance is an indicator how much of the variability of independent variable is not explained by the other independent variable in the model and is calculated using the formula 1- R^2 for each variable.

Table: 4:10: Shows Multi-Co Linearity

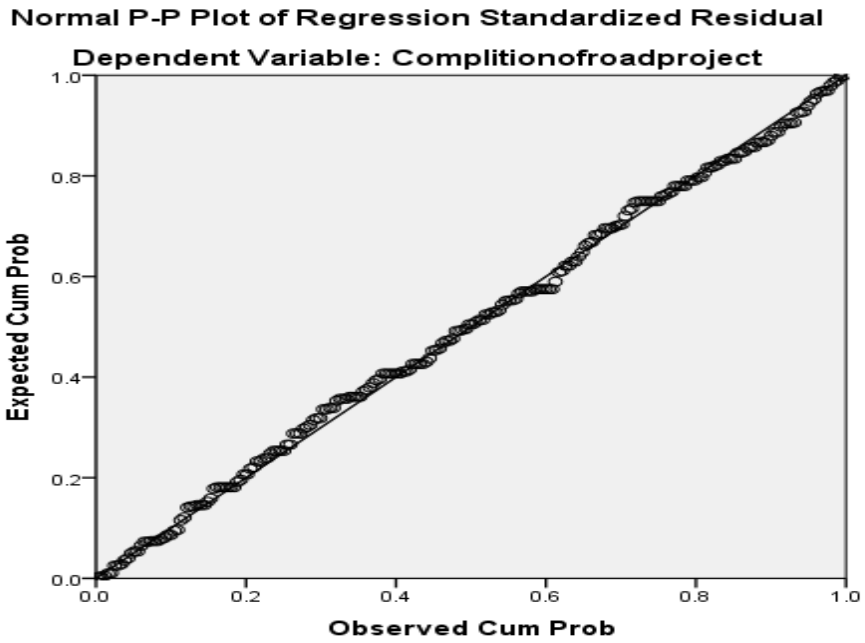
No	Variables	Tolerance	VIF(variance inflation factors)
1.	Fund	0.313	3.19
2.	Management and Leadership	0.253	3.95
3.	Stake holder involvement	0.242	4.1
4.	Contract duration	0.243	3.89

Source; survey, 2022

Table 4.10 shows the computation result that the value of VIF all variables were by far less than 10 and the value of tolerance statistics being above 0.1 they were accepted entered in to regression model for the estimation of variables.

4.2.2.2.2 Linearity Test

Linearity is used check whether all the estimates of regression including regression coefficients, standard errors and tests of statistical significance are biased or not (Keith, 2006). There is no linearity problem on the data for this study residual follow at straight line.



Source: Survey, 2022
Fig 2 Linearity Test

4.2.2.2.3. Normality Test

Normality assumption is around the mean of the residuals is zero and used to determine whether a data set is well modeled by a normal distribution or not and also to indicate un underlying random variable is to be normally distributed (Gujarati,2009). Researcher was used histogram methods of testing the normality of the data. If the residuals are normally distributed about its mean of zero, the shape of histogram should be a bell-shaped and regression standardized residual plotted between -3.3 and 3.3. From the figure below data normality can be indicated.

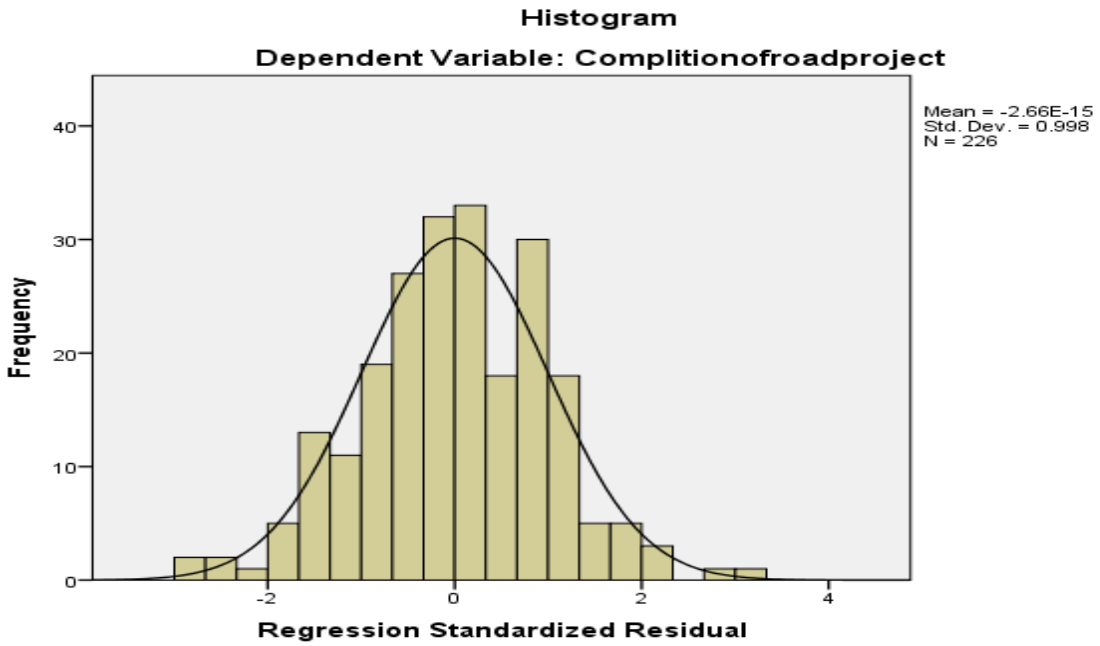


Fig 3 Histogram
Source; survey 2022

4.2.2.2.4. Heteroscedasticity Test

Heteroscedasticity is the equality or violation of the residuals for every set of values for independent variable. So the researchers assume that errors are spread out constantly between the variables. Heteroscedasticity problem exist when scatter plot is greater than 3.3 and less than -3.3. Therefore as it was indicated in figure below the data did not violate Heteroscedasticity assumption and instead it was homoscedastic.

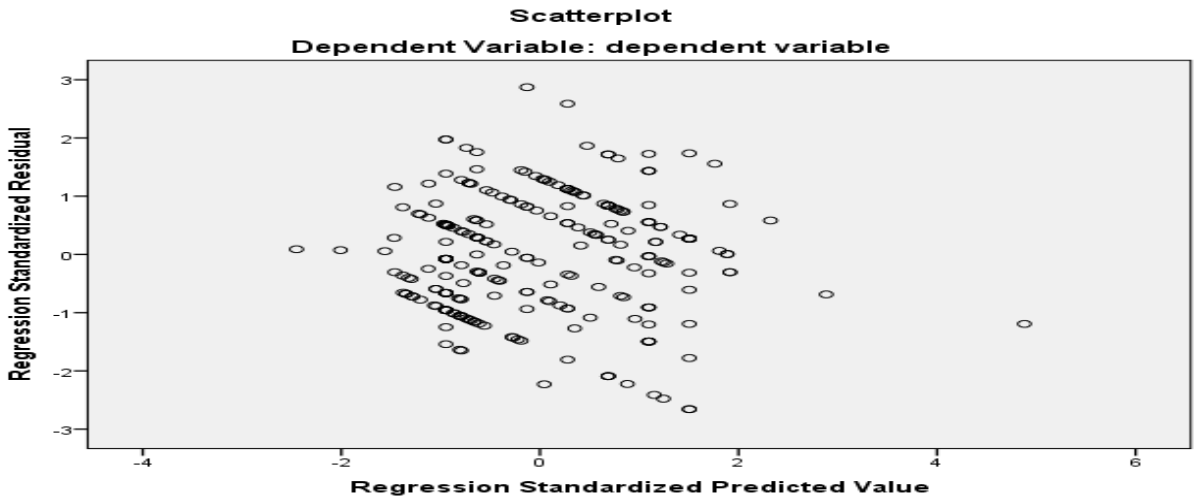


Fig 4 *Heteroscedasticity Test*

Source; survey, 2022

Therefore as it was indicated in figure below the data did not violate Heteroscedasticity assumption and instead it was homoscedastic.

After the model assumption was checked presentation and interpretation of the analysis output is mandatory. The prediction or estimation of the value one variable (the dependent or the predicted variable; called as Y from one or more independent or predictor variables (Keith, 2006).

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775[a]	.600	.593	.489

a. Predictors: (Constant), stakeholder involvement, project management and leadership skill, Contact duration, Fund

b. Dependent Variable: Completion of road project

The beyond Table show that R value is 0.775 which indicates there is a positive relationship between road project completion and independent variables that is to say; fund, project management and leaders ability, stake holder involvement and contract duration. In the model summary adjusted R square tells us the righteousness in shape of the model and its value which is 0.60means all independent variables are able to measure/predict project completion at 60% (0.60 x100) percent. The marginal value provides the impact that unit changes in the individual independent variable have on different levels of project completion when all other variables are held constant.

4.2.2.3. Regression result

Table: 4:11: regression result

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.169	.200		.842	.401
	Fund	.155	.073	.139	2.134	.000
	project management and leadership skill	.287	.075	.252	3.820	.000

	Contact duration	.406	.069	.365	5.889	.000
	stakeholder involvement	.120	.042	.153	2.866	.005
a. Dependent Variable: Completion road project						

The consequences in chart demonstrate that the main pressure on road project completions the Contact duration at beta value .406. This implies that Contact duration at beta value of .406, which implies that a 1% increase in contact duration unit will cause a 40.6% increase in road project completion, this finding is consistent with the finding of Ashworth, (2000) who reported that contact duration positively and significantly influenced the level of project completion.

Project management and leadership skill at beta value of .287which implies that a 1% increase in project management and leadership skill unit will cause a 28.7% increase in road project completion; Fund unit will cause a 15.5% increase in road project completion. This means that fund had an immense influence on increasing the road project completion in the study organization. This conclusion is reliable through the finding of Datta, (2002) who described that fund positively and significantly with road project completion.

Stakeholder involvement at beta value of .12 which implies that a 1% increase in stakeholder involvement unit will cause a 12% increase in road project completion, this finding is similar to the previous research work conducted by Majid (2006) who described that stakeholder involvement positively and significantly with road project completion. The statically significance level of this variable is 0.000; this is at 95 percent confidence interval. So that in order to develop regression equation which fits with that are statistically significant, multiple correlation coefficient (R) and Beta coefficient value was tested. In general the regression equation model of this study summarized as; Formulathe dependent (Y) and independent (X) variables relationship can be explained as;

$$\mathbf{Y=\beta0+\beta1X1+\beta2X2+\beta3X3+\beta4X4+e,}$$

Where β0 is constant,

βn is the coefficient of independent variables (Satendra et, 2011).

The researcher was used unstandardized beta coefficients to compare or prioritize the effect of independent variables on dependent variable and to construct regression equation. If we substitute the coefficient from the above table the equation becomes;

Project completion = 0 .169+ (0.155) fund + (0. 287) Project Management and Leadership ability + (0.406) Contract duration + (.12) Stake holder involvement

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Introduction

This chapter was given a summary of the findings as analyzed in chapter four. The discussions were guided by the research objectives and the data confirms the research questions. Based on the findings, conclusions were made and recommendations for further research suggested.

5.1 . Summary of Major Findings

Attempt to assemble the higher than stated purpose of the research, basic questions were affirmed and come back with. The investigator consequently, recognized the subsequent most important summary:

- The findings of descriptive statistical analysis indicated that among the variables used to analyze the factors affecting road project completion is fund those are sourcing of project funds influence completion of construction projects, budgeting for road project elements affects completion of road project, funding schedule influence completion of road projects**,** adequate funding allocation enhances completion of road and sponsors play a key role on funding for completion of road score of 3.98.
- The other factor affecting road project completion of project is project management approach and leaders ability are good leadership of the project team improve proper project completion, poor knowledge of project management affect road project completion, failure at the intangible planning and design stages may lead to significant problems in succeeding 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 road construction is evaluated average mean score of 3.75.
- Surrounded by factors stakeholder involvement those are involvement of the major stakeholders improves completion of the road projects, there is a relationship between involvement of the major stakeholders and completion of the road projects, some stakeholders interfere with the road project due to vested interest affect road project completion and poor coordination of the stakeholders can cause delay in project completion at average mean of 3.78.
- The last factor are contract duration influence on completion of road project are project scope affect project completion, poor contract management, changes in site condition, shortage of

material and improper planning affect road project completion, the problems of contractors shortage in infrastructure, main supply of resources and clients and consultants affect road project completion**,** and the problem of vague work schedule influence road project completion at average mean of 3.67.

- The correlation analysis result is used to understand the degree of relationship between the fund, project management and leader's skill, stake holder involvement and contract duration has significant and positive relationship with road project completion. The variables in this study correlation coefficient among them are strong relationship. The direction of their relationship is positive sign that dictates a positive change in fund, project management and leader's skill, stake holder involvement and contract duration result in a positive change in the road project completion. Commencing this study a strong correlation is observed among each other.
- Regression analysis results indicate fund with the r value of .155; it was followed by project management and leadership skill at r value .287, stake holder involvement with the r value of .12 and contract duration with the r value of .406. From this investigation it can be noted that, fund, project management and leader's skill, stake holder involvement and contract duration has significant and positive relationship with completion of the road.

5.2. Conclusion

Throughout the examination the investigator used both descriptive, inferential statistics and based on the findings made the research end by outlining the following classic conclusion. From the results of the study, the conclusion is that adequate fund allocation improves timely project completion however in the study area fund allocation has not been given the necessary attention it necessitate from the only government which does not have consistence. Effective fund utilization and use of sufficient budget can improve project completion. The results of the study show that project manager and leaders skill is an essential element in timely road project delivery the people charged with that responsibility have not shown the required level of performance that could guide project deliverance to best put into practice and these consequences imply that performance of road construction projects is low. From the finding of the study the researchers conclude among factors affecting road project completion is fund in the study area 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 addition to this project management and leadership skill is the other factors affecting completion of construction project, from finding of the study conclusion is that identified management and leadership related factors to cause delays in completion of road assert that incomplete drawings, late issuance of instructions and inadequate supervision critically impacted on delays in road projects. The researchers found that the critical role of the project manager's leadership ability had a direct correlation to project outcomes. Supervision during construction is critical to ensure quality products and timely delivery of project and effectiveness of road management will affect the speed of construction.

The supplementary factor is stakeholder involvement in road projects implementation be supposed to be sensitized on the reality that projects will most likely suffer delay in contract duration and definitely increase in road project costs. Involvement of stakeholders 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 road projects

Based on the correlation analysis the relationship between fund, project management and leader's skill, stakeholder involvement and contract duration and completion of road were strong and positive relationship and the results of regression analysis observed that fund, project management and leaders skill, stakeholder involvement and contract and completion of road has a significant positive effect on the completion of road.

5.3. Recommendations

Based on the major findings of the study, the followings recommendations are put forward. Accomplishment of all recommendation is essential to reduce the existing difficulty. However, some of the recommendation requires severe promise to implement in the borough. This section stipulates the recommendations to be implemented for practice and policy so as to ensure smooth, timely and successful completion of construction projects.

- Government policy and strategy be supposed to be provided with a platform that ensures that they provide adequate, truthful and useful information that could inform policy formulation to ensure smooth implementation of roadprojects.

- Project managers should hold stakeholder engagement sessions in the lifetime of the project to ensure that every interested party plays their role in ensuring the road contract does not take longer than intended because of the actions or inactions of any one of the project players. Competent and experienced project managers should be hired to ensure that the right project leadership team is hired to lead a process of road project implementation. This must also guarantee proper program of works which should be followed by good supervision/inspection to ensure it is followed to the letter and all the amendments done at the right time and in an appropriate way to ensure successful road project delivery.
- Contractors should also be give something the once-over before contract award to ensure that they have a history of paying their staff and industry good standing to deliver well on their contract agreements. If they show a sign of cash flow problems they are not to be picked to implement a road project. They are supposed to also moderate the client from some risks through insurance and performance security deposits.
- All the project players should be trained on all factors that influence successful implementation of road projects. They should especially be educated on the key metrics of a successful project. Budget, scope and timelines should be deliberately managed so that a quality road project can be realized.

References

Ahmed, S.M (2008) Construction Delays in Florida: An Empirical Study, Final Report Submitted to State Florida, Department of Community Affairs, Florida

Aibinu, A.A and Jagboro, G.O (2012). The effects of construction delays on project delivery in Nigerian construction industry, *International Journal of Project Management Vol 20*

Al-Kharashi, A. and Skirtmore, M. (2009) Causes of delays in Saudi Arabian Public Sector Construction Projects.*Construction Management and Economics, 27, 3- 23.*

Al-Momani, A. (2010). Construction Delay: A Quantitative Analysis, International Journal of Project Management, 18:51–59

Arditi, D. and Mochtar, K. (2010) Trends in Productivity Improvement in the US Construction Industry.*Construction Management and Economics, 18, 15-27.*

Assaf, S.A. and Al-hejji, S. (2006) Causes of Delay in Large Construction Projects.*International Journal of Project* Management, 24(7), 349-357.

Assaf, S.A., Al-Khalil, M. and Al-Hazml, M. (2005) „Causes of Delay in Large Building Construction Projects", *Journal of Management in Engineering, Vol. 11, No. 2.*

Abbas, M.I. (2006) Causes and Effects of Delays in Aceh Construction Industry, Master's Thesis, University Teknology,

Amer. (2002). "Modeling the Factors Affecting Quality in Building Construction Projects during the Construction Phase in Gaza Strip." M.A. thesis, University of Islamic, Gaza,

Adenuga, O. Afolarin (2013). "Factors affecting quality in the delivery of public housing projects in Lagos State, Nigeria". *International journal of engineering and technology,*

Ahzahar, N. A. Karim, S.H. Hassan, J. Eman. "A Study of Contribution Factors to Building Failures and Defects in Construction Industry".*Procedia engineering* **20**, pp. 249-255,

Abdel-Razek, R. H. (1998) Quality improvement in Egypt: methodology and implementation

Arditi, D. &Gunaydin, H. M. (1998) Factors that affect process quality in the life cycle of building projects, ASCE Journal of Construction Engineering and Management, 124(3),.

Agaba, E. (2009) Poor Planning Delaying Government Projects (Business News Pullout), The New Vision, Thursday 16 2 2009, Vol. 24, pp 6

Alinaitwe, H. M. (2008). Improvement of labor performance and productivity in Uganda's Building Industry. PhD Thesis, Lund University, Sweden

Altaf (1999). Important causes of delay in public utility projects in Saudi Arabia, International

Journal of Project Management Vol 17, Issue 2, pp 647-655

Amin, M. E. (2005). Social Science Research: Conception, Methodology and Analysis, Makerere University Printers, Kampala, pp 256-257

Ashworth, A. (2000). Cost Studies of Buildings, 2nd Edition, Longman Group Limited

Atta, A. E. 1999. Total quality management in orthodontic practice. American Journal of Orthodontics and Dentofacial Orthopedics, 116, 659-660.

Avots, I. (1983). Cost-Relevance Analysis for Overrun Control.*International Journal of Project Management,* Vol.1 No.3, 142-148.

Azhar, N., Rizwan U. Farooqui& Ahmed, S.M. (2008). Cost overrun factors in construction industry of Pakistan. Advancing and Integrating Construction Education, Research & Practice, 499-508.

Barnes, M. (1987) Construction Project Management, Seminar on „Construction Project Management", 21–22 October, London, UK.

Brown Andrew and Adams John, (2000), Measuring the effect of project management on construction outputs: a new approach, International Journal of Project Management

Bubshait, A. A. & Al-Atiq, T. H. (1999) ISO 9000 quality standards in construction, ASCE Journal of Management in Engineering, 15(6), pp. 41– Construction Engineering and Management, 124(5).

Chan, A.P and Tam, C.M., (2000). "Factors affecting quality of building projects in Hong Kong", International Journal of Quality and Reliability Management, Vol.17 Nos. 4/5, PP.423-441,

Chua, D. K. H. et al. (1999) Critical success factors for different project objectives, ASCE Journal of Construction Engineering and Management, 125(3), pp. 142–150.

Collins, Jr., F. C. (1996) Quality: The Ball in your Court (New Delhi, India: Tata McGraw-Hill).

Cavalieri Sergio, Terzi Sergio and Macchi Marco, (2007), A Benchmarking Service for the Evaluation and comparison of scheduling techniques, Computers in Industry

Cheung Sai On, Suen Henry C.H. and Cheung Kevin K.W., (2004), PPMS: a Web based construction Project Performance Monitoring System, Automation in Construction.

Cheung Sai On, Suen Henry C.H. and Cheung Kevin K.W., (2004), PPMS: a Web based Construction Project Performance Monitoring System, Automation in Construction

Cooke, B. and Williams P. (2003) Construction Planning, Programming and Control, 2nd edition. Palgrave, New York.

Cao Y..2010 Quality Control of Construction Projects." Degree Programme in Industrial Management. Thesis, Savonia University of Applied Sciences, Business and Engineering, Varkaus,.

Drucker, P. F. (1969) Concept of the Corporation (Boston, MA: Beacon Press). Chung (1999),. Understanding Quality Assurance in Construction: A Practical Guideline to ISO 9000, E & FN Spon, London.

Department of the Environment (2000)., Transport and the Regions (DETR), KPI Report forth Minister for Construction by the KPIWorking Group, January

Datta, B. (2002). Management of infrastructure projects in urban local bodies: case study of Kanpur Development Authority, India Infrastructure Report, 207–211.

Elchaig, T., Boussabinaine A., and Ballal T. (2005) "Critical *determinants of construction tendering costs: Quantity surveyors' standpoint*", International Journal of Project Management.

El-Razek, M.E.A. Bassoioni, H.A &Mobarak, A.M. (2008). Causes of Delay in building Construction Projects in Egypt, Journal of Construction Engineering and Management, Vol 134.

Enshassi, S. Mohamed, S. Abushaban (2009). "Factors Affecting the Performance of Construction Projects in the Gaza Strip".Journal of Civil Engineering and Management.

Fisk, E.R. (1997) *Construction Project Administration,* 5th Edition. Prentice Hall, New Jersey Flyvbjerg, B., Skamris Holm, M. K. and Buhl, S. L. (2004). What causes cost overrun

H. Abdul-Rahman, S.M. H. Al-Tmeemy, Z. Harun, M. Ye, Kho. (2012). "The major causes of quality failures in the Malaysian building construction industry". Malaysia,

Heravitorbati, (2011) "Examination of process to develop a framework for better implementation of quality practices in building projects". The 2nd *International Conference on Construction and Project Managemen (ICCPM)*, Singapore, September..

Karim K. and Marosszeky M., (1999), Process monitoring for process re- engineering using key performance indicators, International conference on construction process reengineering,

CPR 99, Sedney UNSW 12-13 July, Building Research centre.

Kariuki, G. I., (2010). „Factors affecting project delivery; A case study of Kenya Airport Parking Services Limited Kenya. Unpublished thesis report.

Kerzner, H. 2006**).** Project Management A system Approach to Planning Scheduling and Controlling

Kim Du Y., Han Seung H, Kim Hyoungkwan and Park Heedae, (2008), Structuring The

prediction model of project performance for international construction Projects

Kerzner (2009). Project Management: A Systems Approach to Planning, Scheduling, and Controlling. Tenth edition, New York: John Wiley & Sons, Inc.,.

Kothari, R (2004). *Research Methodology-Methods and Techniques.2nd Edition.*New Age International Publishers, New York, USA.

Ledbetter, W. B. (1994) Quality performance on successful project, ASCE Journal of Construction Engineering and Management, 120(1), pp. 34–46.

Love, P. E. D. & Smith, J. (2003) Benchmarking, bench action, and bench learning: rework mitigation in projects, ASCE Journal of Management in Engineering, 19(4), pp. 147–159.

Mohammad S, (2010) Management in the Jordanian Construction Industry. Amman : Jordan Journal of Civil Engineering

Mugenda, A. G. (2008). *Social Science Research Theory and Principles*. Nairobi: Applied Research &Training Services.

NavonRonie, (2005), Automated project performance control of construction projects, Automation in Construction.

Janipha, F. Ismail. "Conceptualization of quality issues in Malaysian construction environment". *Procedia-Social and Behavioral Sciences 101*, pp. 53-61, 2013.Overall, J. E. &Klett, C. (1972) Applied Multivariate Analysis (New York: McGraw Hill).

Pheng, L. S. (2004) Implementing total quality management in construction firms, ASCE Journal of Management in Engineering, 20(1), pp. 8–15.

Pheng Low Sui and ChuanQuek Tai, (2006), Environmental factors and work performance of project managers in the construction industry, International Journal of Project Management.

Pheng Low Sui and ChuanQuek Tai, (2006), Environmental factors and work performance of project managers in the construction industry, International Journal of Project Management.

Hoonakker, P. Carayon, T. Loushine (2010).. "Barriers and benefits of quality management in the construction industry: an empirical study". *Total quality management* 21(9), pp. 953-969. SPSS 9.0.0.SPSS Inc., Headquarters, 233 S. Wacker Drive, Rumane (2011). Quality

Management in Construction Projects. CRC A.S. Ali, K.H. Wen. "Building defects: Possible solution for poor construction workmanship". *Journal of Building Performance*, 2(1), p. 59-69, Safi, S.K., (2001)."Statistical Package for the Social Sciences", Afak Publishing

Brennan, Daniel S. (2002), Tools to manage the risks of construction delays, *Shopping Center Legal Update.*

Chan, W. K., Suhaiza, Z. And Yudi, F., (2008).Critical factors influencing the project success amongst manufacturing companies in Malaysia, University Sains Malaysia, 11800 Penang, Malaysia.

Chism, N., Armstrong, G. (2010, September). Project delivery strategy: getting it right. KPMG International, pp.1-24.

Gwaya, A. O., Sylvester M. M. & Walter O. O., (2014). Development of a Benchmarking Model for Construction Projects in Kenya. International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-4 Issue-5

Majid IA (2006). Causes and Effects of Delays in Aceh Construction Industry, Master thesis, Univ. Teknol. Malaysia.

Mugenda, O. M., &Mugenda, A.G. (2003). Research methods: Qualitative and Quantitative Approaches. Nairobi: Acts Press.Mugenda, O. M., &Mugenda, A. G. (1999).Research methods: Quantitative and Qualitative Approaches. Nairobi: Acts Press.

Osazuwad, G.O. (1998) An Evaluation of the factors that cause delays on Construction Project in Nigeria, African Journal of Development Studies, Vol. 1, Ed.1&2: pp 105-114.

Serpell, A., Alarcon, L.F (1998). Construction process improvement methodology for Construction projects, International Journal of Project Management, Vol. 16 No.4, pp.215-21.

Talukhaba A, A, (2009), An Investigation into Factors Causing Project Delays in Kenya. Case Study of High-Rise Buildings in Nairobi, unpublished PHD Thesis, University of Nairobi

Z. T. Zewdu and G. T. Aregaw, "Causes of Contractor Cost Overrun in Construction Projects :

Brennan, Daniel S. (2002), Tools to manage the risks of construction delays, *Shopping Center Legal Update.*

Chan, W. K., Suhaiza, Z. And Yudi, F., (2008).Critical factors influencing the project success amongst manufacturing companies in Malaysia, University Sains Malaysia, 11800 Penang, Malaysia.

Chism, N., Armstrong, G. (2010, September). Project delivery strategy: getting it right. KPMG International, pp.1-24.

Gwaya, A. O., Sylvester M. M. & Walter O. O., (2014). Development of a Benchmarking Model

for Construction Projects in Kenya. International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-4 Issue-5

Majid IA (2006). Causes and Effects of Delays in Aceh Construction Industry, Master thesis, Univ. Teknol. Malaysia.

Mugenda, O. M., &Mugenda, A.G. (2003). Research methods: Qualitative and Quantitative Approaches. Nairobi: Acts Press.Mugenda, O. M., &Mugenda, A. G. (1999).Research methods: Quantitative and Qualitative Approaches. Nairobi: Acts Press.

Osazuwad, G.O. (1998) An Evaluation of the factors that cause delays on Construction Project in Nigeria, African Journal of Development Studies, Vol. 1, Ed.1&2: pp 105-114.

Serpell, A., Alarcon, L.F (1998). Construction process improvement methodology for construction projects, International Journal of Project Management, Vol. 16 No.4, pp.215-21.

Talukhaba A, A, (2009), An Investigation into Factors Causing Project Delays in Kenya. Case Study of High-Rise Buildings in Nairobi, unpublished PHD Thesis, University of Nairobi

APPENDIX ONE

QUESTIONNAIRE

St. Mary's University

Faculty of Business and Economics

Department project management

Dear respondent,

I am a graduate student in the department of project management, St. Mary's University. Currently, I am undertaking a research entitled **'**Determinates of Timely Completion of Road Projects the Case of Addis Ababa City Road Authority Lot One Projects. You are one of the respondents selected to participate on this study. Please assist me in giving correct and complete information to present a representative finding on the current status of the **'**Determinates of Timely Completion of Road Projects the Case of Addis Ababa City Road Authority Lot One Projects. Your participation is entirely voluntary and the questionnaire is completely anonymous. Finally, I confirm you that the information that you share me will be kept confidential and only used for the academic purpose. No individual's responses will be identified as such and the identity of persons responding will not be published or released to anyone. All information will be used for academic purposes only.

Thank you in advance for your cooperation and dedicating your time!

Instructions

- No need of writing your name
- For Likert scale type statements and multiple choice questions indicate your answers with a check mark (√) in the appropriate block.

QUESTIONNAIRE

PERSONAL BACKGROUD

1. Gender:
   Male ☐
   Female ☐
2. Age:
   1) 18 - 25
   2) 26 – 30
   3) 31 – 40
   4) 41 – 50
   5) 51 and above

3. Marital Status:
   a) Married
   b) Single
   c) Widowed
   d) Divorced

4. Educational level:
   a) Illiterate
   b) Elementary complete
   c) Grade 10 complete
   d) Grade 12complete
   e) Certificate
   f) Diploma
   g) Degree
   h) Master and above

5. How long have you been working in the organization?
   a) Below 5 year
   b) 5-10 years
   c) 11-15 years
   d) 16-20 years
   e) 21-25 years
   f) 26- 30years
   g) Above 30 years

APPENDIX

No	**Project Management Skills**	1	2	3	4	5
1.	Is good leadership of the project team improve proper project completion.					
2.	Poor knowledge of project management affect project completion					
3.	Failure at the intangible planning and design stages may lead to significant problems in succeeding stages of the project.					
4.	Supervision during construction is critical to ensure quality products and timely delivery of project.					
5.	Effectiveness of construction management will affect the speed of construction.					

No	**Influence of Funding**	1	2	3	4	5
1.	Sourcing of project funds affect completion of construction projects					
2.	Budgeting for construction project elements affects completion of construction project.					
3.	Funding schedule affects completion of construction projects					
4.	Adequate funding allocation enhances completion of construction					
5.	Sponsors play a key role on funding for completion of construction					
6.	Misappropriations of project funds lead to incompletion of projects.					

No	**Contract duration**	1	2	3	4	5
1.	Contract duration affect project completion					
2.	Project Scope affect project completion					
3.	Poor contract management, changes in site condition, shortage of material and improper planning affect project completion					
4.	The problems of contractors shortage in infrastructure, main supply of resources and clients and consultants affect project completion					
5.	The problem of vague work schedule influence project completion					

No	**Stakeholder Involvement**	1	2	3	4	5
1.	Involvement of the major stakeholders enhances completion of the construction projects.					
2.	There is a relationship between involvement of the major stakeholders and completion of the construction projects.					
3.	Some stakeholders interfere with the road project due to vested interest affect project completion.					
4.	Poor coordination of the stakeholders can cause delay in project completion					
5.	Stakeholders involvement influence the completion of construction projects					

No	**Project Timely completion**	1	2	3	4	5
1.	Road project is completed with time schedule set according to contract agreement.					
2.	AACRA lote one projects are completed by quality standard set according to specification.					
3.	Stake holders were actively participated in the project from starting to completion.					
4.	Road project is completed to solve critical community problems.					
5.	Road project is completed by budget allocated.					

መጠይቅ

በአዲስ አበባ ከተማ መንገድ ባለስልጣን የሎት አንድ ፕሮጀክት ፕሮጀክቶች በግዜ እንዳይጠናቀቁ የሚያደርጋቸውን ጉዳዮች ላይ ጥናት በመስራት ላይ ስልሆነ በእርሶ በኩል በሰንጠረዥ የተጠየቁ ጥያቄዎችን እንድትሞሉልን በትህትና እጠይቃለው፡፡

ኬርያት መሀመድአወል

ማስታወቂያ

1. በጣም አልስማማም
2. አልስማማም
3. ገለልተኛ
4. እስማማለው
5. በጣም እስማማለሁ

ተ.ቁ	የፕሮጀክት አስተዳደር ችሎታዎች	1	2	3	4	5
1.	ጥሩ የፕሮጀክት ቡድን አመራር ፕሮጀክትን በትክክል ለማጠናቀቅ ይጠቅማል፡፡					
2.	የፕሮጀክት አስተዳደር እውቀት አናሳ መሆን በፕሮጀክት መጠናቀቅ ላይ ተጽኖ ያሳድራል፡፡					
3.	በማይዳሰሱ የዕቅድ እና የንድፍ ደረጃዎች አለመሳካት የፕሮጀክቱ ስኬታማነት ደረጃዎች ላይ ከፍተኛ ችግርን ሊያስከትል ይችላል					
4.	በግንባታ ወቅት ቁጥጥር ማድረግ ጥራት ያለው ስራ እና የምርት አቅርቦትን በወቅቱ ለማድረስ አስፈላጊ ነው፡፡					
5.	ውጤታማ የሆነ የግንባታ አስተዳደር የግንባታውን ፍጥነት (ቅልጥፍና) ይጎዳዋል፡፡					
ተ.ቁ	የገንዘብ ድጋፍ ተጽእኖ	1	2	3	4	5
1.	ለፕሮጀክት የተመደበ ገንዘብን ማግኘት የግንባታ ፕሮጀክቶችን በማጠናቀቅ ላይ ተጽእኖ ያደርጋል፡፡					
2.	በተለያዩ የግንባታ ስራዎች በጀት መመደብ የግንባታ ፕሮጀክቱ መጠናቀቅ ላይ ተጽእኖ የኖርዋል፡፡					
3.	የገንዘብ ድጋፍ መርሃ ግብር የግንባታ ፕሮጀክቶች መጠናቀቅ ላይ ተጽእኖ ያሳድራል					
4.	በቂ የገንዘብ ድልድል የግንባታውን መጠናቀቅን ያመቻቻል(ያሻሽላል)፡፡					
5.	ስፖንሰሮች ለግንባታው ማጠናቀቂያ የገንዘብ ድጋፍ ቁልፍ ሚና ይጫወታሉ					
6.	የፕሮጀክት ገንዘቦችን ያለአግባብ መበዝበዝ የፕሮጀክቶችን አለመጠናቀቅ (ሙሉ					

	ያለመሆን) ያስከትላል.					
ተ.ቁ	**የውል ቆይታ**	1	2	3	4	5
1.	የኮንትራቱ ቆይታ በፕሮጀክት ማጠናቀቅ ላይ ተጽዕኖ ያሳድራል።					
2.	የፕሮጀክት ዓላማ በፕሮጀክት ማጠናቀቅ ላይ ተጽዕኖ ያሳድራል።					
3.	ደካማ የኮንትራት አስተዳደር፣ የቦታው ሁኔታ ለውጦች፣ የግብዓት እጥረት እና ትክክለኛ ያልሆነ እቅድ ማውጣት በፕሮጀክት መጠናቀቅ ላይ ተጽዕኖ ያሳድራል።					
4.	ለኮንትራክተሩ የመሰረተ ልማት፣ የጥሬ እቃ አቅርቦት፣የአማካሪዎች እጥረት በፕሮጀክት መጠናቀቅ ላይ ተጽእኖ ያሳድራል።					
5.	በደንብ ግልጽ ያልሆነ የሥራ መርሃ ግብር በፕሮጀክቱ ማጠናቀቅ ላይ ተጽዕኖ ያሳድራል					
ተ.ቁ	**የባለድርሻ አካላት ተሳትፎ**	1	2	3	4	5
1.	የዋና ዋና ባለድርሻ አካላት ተሳትፎ የግንባታ ፕሮጀክቶቹን ለማጠናቀቅ ይረዳል።					
2.	በዋና ዋና ባለድርሻ አካላት ተሳትፎ እና በግንባታ ፕሮጀክቶቹ መጠናቀቅ መካከል ግንኙነት አለ።					
3.	አንዳንድ ባለድርሻ አካላት በፕሮጀክት መጠናቀቅ ላይ ተጽዕኖ በሚያሳድሩ ጥቅማጥቅሞች ምክንያት በመንገድ ፕሮጀክቱ ውስጥ ጣልቃ ይገባሉ።					
4.	የባለድርሻ አካላት ደካማ ቅንጅት በፕሮጀክት ማጠናቀቂያ ላይ መዘግየትን ያስከትላል					
5.	የባለድርሻ አካላት ተሳትፎ የግንባታ ፕሮጀክቶችን መጠናቀቅ ላይ ተጽእኖ ያሳድራል					
ተ.ቁ	**ፕሮጀክቱ በጊዜው ማጠናቀቅ**	1	2	3	4	5
1.	የመንገድ ኘሮጀክቱ በኮንትራት ውል መሰረት በተቀመጠለት የጊዜ ሰሌዳ ተጠናቋል።					
2.	የአዲስ አበባ መንገዶች ባለስልጣን ሎት አንድ ፕሮጄክቶች የተጠናቀቁት በጥራት ደረጃ በተቀመጠው መስፈርት መሰረት ነው።					

3.	በፕሮጀክቱ ከመጀመሪያ እስከ ማጠናቀቂያው ድረስ ባለድርሻ አካላት በንቃት ተሳትፈዋል					
4.	ወሳኝ የማህበረሰብ ችግሮችን በመፍታት የመንገድ ግንባታ ፕሮጀክቱ ተጠናቋል፡፡					
5.	የመንገድ ፕሮጀክት በተመደበው በጀት ይጠናቀቃል					