ASSESSMENT OF FACTORS AFFECTING PROJECT IMPLEMENTATION: THE CASE OF AACRA FERENSAY BIRET DILDIY-SATELAYT TABIYA ROAD CONSTRUCTION

BY

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DECLARATION

The underedisigned declared that this paper entitled assessment of factors affecting project implementation practice the case of ACCRA ferensay biret dildiy-satelite tabiya “is my original work. I have carried out this research paper work independently with the guidance and support of my research paper advisor. This study has not been submitted any degree/diploma in my institution and that all sources of materials used for the study have been duly acknowledged.

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Name signature date

ST. MARY’S UNIVERSITY, ADDIS ABABA JUNE 2017

ENDORSEMENT

This thesis has been submitted to st.mary's university student of graduate studies for examination with my approval as a university advisor.

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University Advisor signature

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CHAPER ONE

INTRODUCTION

1.1 Background OF the Study

Project implementation is the Process whereby "project inputs are converted to project outputs". May be looked at as putting in action the activities of the project, putting into practice what was proposed in the project document (i.e. transforming the project proposal into the actual project.) or Management of the project or executing the project intentions.(Culp,G.Smith,A1992).

According to Pinto, Jeffrey K. (1998), to successfully implement a project is usually difficult and complex .the project manager has to devote more time on human, financial and technical variables as key to the realization of project implementation. From available literatures it is apparent that the following determinants are capable of affecting project implementation in the states in review of not handled with care. This in-exhaustive list includes: escalation of project cost due to inflation, contractors not performing below standard and expectation, change in the original design, poor planning or shoddy work by architects, specification of costly and imported materials, insufficient budget(Fleming, Quentin & Hoppelman, Joel. 1996)

There are lots of Factors that lead to success of projects among those Political Commitment, Simplicity of Design, Careful preparation, Good management and Involvement of beneficiaries/community. The success of the contractor and the project manager will usually be judged according to how well they achieve the three primary objectives of cost, performance and time (Ashaver, D.1989).

Studies on project management developed several success factors for successful project implementation among those are Clearly defined goals including the general mission of the project as well as commitment to those goals on the part of the project team members, competent project manager, top management support, competent project team members, sufficient resource allocation, adequate communication channels, control mechanisms, feedback capabilities, and responsiveness to clients. The above lists represent some of the factors that previous researchers suggest as factors for successful project implementation.

In Ethiopia's Sustainable Development and Poverty Reduction Program one of the factors that can help for achieving this program is road sector development program aimed mainly at upgrading and rehabilitating the existing road network. For achieving this goal project management can play a great role by identifying factors which are outside the control of the project management which could determine the success or failure of a project implementation.

Efficient road construction projects can provide a solid platform for reviving the economy and for building a more balance and independent economy during stable political conditions. (Flaherty, 2002).The consequences bad performance on road construction may be in terms of loss in productivity, additional expenditures by way of rework and repair, re-inspection and retest in the short term. In the long term, poor efficient can hurt reputation of the ministry, and if the governing body continues in the same way it might have great loss for the country. Helping the Addis Ababa city roads authority to identify the critical attributes responsible for achieving the desired efficient level (success factors) and also to find the attributes adversely affecting the project implementation efficient (failure factors) has been the motivating factor behind this study. It is realized that maximization of the success factors and minimization of failure factors will ensure the road construction realizes its efficient goals. Realizing these aspects, this study undertaken to suggest ways to improve efficient as well as to take care of certain critical factors that may lead to loss of efficient road construction in ACCRA.

1.2 Definitions of Terms

- **Project:** It is a set of finite activities that are usually prepared only once and have well designed objectives, using a combination of human and non-human resources within limits of time;

- **Project implementation:** is the Process whereby project inputs are converted to project outputs.

- **Road Construction:** the act of constructing roads to be used by the community

1.3 Statement of the Problem

Studies undertaken in the construction sector shows that road construction faces numerous challenges(Fans and Chang-Kang.C, 2005).some are new to industry, and some are old.many of this challenges are a direct result of construction operations while others a result of indirect, peripheral activities. A surprising number of the challenges are not construction issues but must be addressed and managed by the construction manager to ensure project success.it is critical that the construction manager understands the demanding realities that he or she faces in the planning and control of construction operations.

Previous researches shows that construction projects represent a unique set of activities that must be taken place to produce a unique product or deliverable (Cleland, D.I. and Cerner H,1985) .however, A construction project is commonly acknowledged as successful when it is completed on time, within budget, and in accordance with specifications and to the stakeholder's satisfaction. However outside the control of the management there are many factors which could determine the success or failure of a project.

Road construction projects can stimulate the economy during stable political conditions in building a more balanced and independent economy for once country. While bad performance can hurt once country economy by way of rework and re test in the short term and in the long term it may have effect on the country trade and investment development because roads can promote the way of communication and help manufacturing industries to get the needed raw materials roads also have benefit for buyers and investors. In Ethiopia especially in Addis Ababa There are lots of road construction projects that didn't get accomplished according to the plan or that didn't meet the design specification of the ministry as well as those road construction projects consume more than the initial budget which is written in the financial plan of the project.

Previous researches have shown that construction projects represent a unique set of activities that must take place to produce a unique product (Kerzner, H. 1998). However, the success of a project is judged by meeting the criteria of cost, time, safety, resource allocation, and quality as determined in the initial planning process. In spite of an obvious gap between project success and completion, a direct connection between them still exists. Numbers of studies raise a question of a bottleneck in researches in this area related to a success judgment. Discussing success factors it would be logical to address a definition of project success which in turns is caused by several

factors. Roads can help in minimizing poverty and building a more independent economy and if there are problems on construction of road projects that could have a negative effect on poverty reduction and once country economic development Therefore this study seeks to assess the factors influencing project implementation of road construction in aacra see what factors can have effect while implementing the road construction project.

1.4 Research Question

- How does project managers competency influence road construction projects implementation?
- What does the influence of funds on road construction projects Implementation look like?
- How does project equipment influence road projects Implementation?
- What should be the magnitude and level of integration look like in terms of linkages with external stakeholders?
- How does project controlling have effect on project implementation?

1.5 Objective of the Study

The overall objective of the study is to Asses factors affecting project implementation practices in the Addis Ababa city roads authority with a focus on selected project of ferensay biret dildiy-satelayt tabiya road construction project

1.5.1 Specific Objectives of the Study

- To assess how the competency level of the project manager have effect on project implementation
- To assess the influence of project funds on road construction projects Implementation
- To assess the experience of the project in terms of managing the available construction equipment;
- To examine the effect of integration with pertinent stakeholders, and
- To assess the effect of project controlling on project implementation

1.6 Significance of the Study

The study of this paper have great advantage for the study organization because the study can determine those factors that can affect on the project implementation so this help them to see and take urgent action to fulfill the goals of the road construction projects of AACRA. The study encourages further researchers on the area to research as it's not exhaustive. The study also can benefit scholars who would wish to undertake further studies aimed at assessing and identifying factors that can have great influence on road construction projects implementation.

1.7 Scope of the Study

The study was conducted at the AACRA by focusing on ferensay biret dildiy-satelayt tabiya construction project that is done around ferensay legasiyon. The study targeted a population of 500 respondents from the AACRA in order to assess factors affecting project implementation practices. 80 permanent staffs of the project are target population in the data collection process. The study was scatter at ferensay biret dildiy-satelayt tabiya road construction project by targeting across the employees of various staffs which include forman, engineers, project manager operator, surveyor and drivers.

1.8 Limitation of the Study

The study encountered the following problems: when conducting the study the researcher does not have experience bt the student researcher tries to fill this gap by referring different books and by conducting with the advisor.and also the researcher faces lack of reference books but the student researcher tries to fill the gap by communicating with different exerienced people.

1.9 Organization of the Study

The study organized in five chapters; the first chapter is an introductory part of the study which introduces the overall study. This part consists of background of the study, statement of the problem, research question, objective, significance, scope and limitation of the study.

The second chapter focuses on review of related literatures in which previous studies are conducted. In this chapter theoretical literatures and empirical literatures which is written on factors that can affect road construction projects implementation are included.the third chapter consists of study design,population and sampling technique, sampling design, sources of data, data collection instruments,procedures of data collection, data analysis method and ethical consideration.

The third chapter, research methodology, emphasizes on the design of the study and the methodologies that will be used. In this chapter research design, sample size and sampling techniques, sources of data and data collection tools and data analysis method,reliability analysis,model specification are discussed.the fourth chapter focused on analysis of the collected data from respondents using spss software to analyze quantitative data.the fifth chapter presents a summary of the study findings and comes up with conclusions based on the outcome of the data collected and analyzed with different methods and based on the finding of the study recommendation are made.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1Introduction

This chapter covers review of theories and related literature by other authors in the field under study and specifically the study variables. The chapter also present conceptual framework to support the empirical review.

2.2 Concept of project implementation

There is growing recognition that different types of projects require different approaches to their management, requiring management procedures tailored to the needs of the project (Crawford GTZ IS, 2006) and project managers selected with appropriate competencies (Laufer, A., Denker, G.R., and Shenhar, A.J, 1993). Increasing globalization of projects and project management adds to this diverse mix, creating intercultural challenges for project managers (Haynes, M.E. 1989). Professional associations are beginning to recognize this diversification of project management. The project management literature agrees that there are two components of project success (Lientz, Bennet & Rea, Kathryn. 1995). Achieving project success is becoming more important in the highly competitive construction industry. Large and complex construction projects are becoming more difficult to complete successfully in developing countries (Spinner, M.P. 1997).

The quest for achieving greater productivity in road construction projects, and their quality need has been the desire of road project clients in financing projects involving huge contract sums, yet this vision keeps failing due to the perceived "conflicts of interest" existing among project parties. In addition, many projects have failed due to the inability to maintain standard procedures and the required operational effectiveness regarding the attainment of targeted project goals. The World Bank (2003) mentioned that some of these procedures are loose and are often supplemented by circulars that are unclear and often contradictory and this greatly influence project outcome. Clearly, the study has shown that seven out of ten projects surveyed suffered delays in their execution (Kenneth Gwilliam, 2011). Several researchers have addressed similar

studies on cost overruns, unbudgeted financial burdens, disputes, arbitration, adversarial relationships, cash flow problems and time overruns (Leyland,J and VanEsch, 2006) .

2.3 Factors Affecting Project Implementation

2.3.1 Project Manager's Competency

Thus, competence covers personal characteristics (traits as understood by the traits school and emotional intelligence),knowledge and skills (including intelligence and problem-solving ability, as well as management skill).However, it goes on to show that different competence profiles are appropriate in different circumstances, covering the contingency school. Finally, personal characteristics also encompass charisma and vision, and it is possible to build up different competency profiles to match different forms of leadership such as transactional and transformational leadership.

Types of Competence

Frame, J. D. (1995) show that many of the authors identify up to four types of competence that determine leadership performance (Kets de Vries & Florent-Treacy, 2002;Marshall, 1991; Zaccaro et al., 2001):

• Cognitive

• Behavioral

• Emotiona

• Motivational

based on their own observations and their analysis of the literature, Dulewicz and Higgs (2003) suggestthat three types of competence explain most managerial performance:

• Intellectual (IQ)

• Managerial skill (MQ)

• Emotional (EQ).

From the above list, they have broken cognitive into intellectual (intelligence and problem-solving abilities) and managerial (knowledge and skills of management functions). They have combined emotional, behavioral and motivational (Barnard's cathectic functions) into one. intellectual competence (IQ) accounts for 27% of leadership performance, managerial competence (MQ) accounts for 16%, and emotional competence (EQ) accounts for 36%.Emotional competence is therefore the most significant, but the other two are important, as Barnard and Confucius suggested.

Competence is the ability of an individual to do a job properly. A competency is a set of defined behaviors that provide a structured guide enabling the identification, evaluation and development of the behaviors in individual employees (Graham, Robert J. & Englund, Randall, L. 1997). Competencies are also what people need to be successful in their jobs. Job competencies are not the same as job task. Competencies include all the related knowledge, skills, abilities, and attributes that form a person's job. This set of context-specific qualities is correlated with superior job performance and can be used as a standard against which to measure job performance as well as to develop, recruit, and hire employees.

By having competencies defined in the organization, it allows employees to know what they need to be productive. When properly defined, competencies, allows organizations to evaluate the extent to which behaviors employees are demonstrating and where they may be lacking (Lewis, James P. 1998).

Based on the review of Shtub, Avraham, Bard, Jonathan, & Globerson, Shlomo (1994) , the role or responsibilities that should be on every project manager are shown below:

Providing Feasibility Studies, Project Summary, and Project Strategy

Before start any construction project, the project manager should make a survey on the state of the site. The project manager must also be proficient in a study on the state of development of the site to be made or a construction by determining what type of equipment or machinery that needs to be prepared to start a construction. The project manager also must think about accessibility of heavy vehicles into construction site. After making feasibility studies on the construction site, the project manager should also provide a project summary report form in order to carry out the next process with ease and according to a predetermined plan. When

completed the project summary, project manager should also provide project strategy from early stages until the completion of the project.

Planning Activities, Tasks, Schedules and Budgets

The important of the planning provided by a project manager is to avoid any problems during the process of construction project. In planning activities, the project manager can forecast any incremental of budget if completed projects exceed the expected time. Project managers needs to provide planned work schedule, so that every part of the work must be completed according to the plan. Besides that, the project manager also has the responsibility to manage the budget that has been provided from the client or developer to complete the construction project(Smith, K.A. 2000)

Managing the Human Resource

In managing human resources, the project manager should also focus on workers ethics in the process of completing construction. Employee ethics should be emphasized because in order to keep the project running smoothly and to avoid any problems arising. If the employee does not follow a predetermined ethics in work ethic, managers need to take action as soon as possible by giving the sentence. This is because, to warn other employees to always be ethical in work(Snead, G.L. & Wycoff, J. 1997).

Manage the Project Quality and Safety and Health

The quality of the project is one of the achievements that should be achieved by the project manager in order to show the competence or has the nature of excellent leadership in managing a project. The quality of the project is also important for a contracted company to ensure that the project has been well managed by the project manager and satisfied the client. Worker's safety and health is very important in order to reduce accidents and fatalities. This situation is controlled by strict regulation (Spinner, M.P. 1989).

Monitoring the Project Progress

The next role or responsibilities as a project manager is to manage the monitoring of projects, and monitor progress report. In monitoring the progress of the project, the project manager should ensure project progress that has been made is on schedule. (Lewis, James, 1998**).**

Commissioning of Mechanical and Engineering Packages

Administer project closed-out by carrying out commissioning of Mechanical and Engineering packages, organising handing over activities and performing contract closed-out, post-contract evaluation and post mortem review(Lewis, James P. 1998).

Leadership Characteristics Skills

Communication

This communication is also the basic skills for aproject leader, this is because communication is the ability of a project

manager or leader to listen, persuade, and to understand what others mean by their behavior. Communication skills for leaders in managing projects are needed in achieving the goals of a project. As a skilled leader in communicating this way may make it easier to interact between project leader or project manager with the workers, in the case of any problems occurring on construction projects that can be completed quickly and easily (Lewis, James P. 1998).

Problem Solving and Decision Making

For a leader it is necessary to know how to solve a problem, how to distinguish the source of the problem, identify practical solutions, and the last action is to implement it. Between the elements in problem solving is included in the problems to be solved and decisions need to be made to solve the problems that have occurred (Lewis, James P. 1998).

Team Building

As a project manager also must engage in team building skills as necessary for the success of a project. For every decision made by a project manager or a leader should be known by their subordinates, because people definitely need to know what exactly is required of a leader, or a

sharing of knowledge and learning, and in the selection process for an original team leader (Lewis, James P. 1998).

Conflict Resolution

In a construction project undertaken, usually the conflict is a major problem that must be faced by the project manager or project leader. As a project manager to resolve conflicts is a very difficult task in maintaining the situation of the project ran smoothly. In this chapter, this conflict can be defined as the difference between two or more trusts, the conflict of ideas in solving a problem, or interest in project management (Lewis, James P. 1998).

Planning and Goal Setting

Planning in achieving an objective is important, because as a project manager must be clever and wise in preparing any planning process has been designed so that every construction project can proceed smoothly. As a leader in managing a project also need to draw roads and plannin g with the goal that all the objectives of the project construction process can be successfully achieved (Spinner, M.P. 1989).

Sense of responsibility

In the event of any problems involving workers, as a leader or project manager should feel responsible for the project manager should take care of every employee. Besides that, if there is any conflict on-site construction project manager needs to manage the problem because it has become my responsibility as a manager in controlling the problem. The project manager is also responsible for leading projects in various aspects to the overall success of a project, including cost, schedule, quality and safety requirements (Spinner, M.P. 1989).

Time Management

Based on the study (Spinner, M.P, 1989), time is an important aspect of the construction process. If as a manager who leads a project did not manage time properly can lead to delays in the completion of a project. The delays in the completion of a project can result in additional costs to the provision in a construction project. In addition, as a manager who leads the project should be

smart enough to determine and control strategies in time to prepare a progress by stages which have been designed in the Critical Path Method.

2.3.2 Project Funds

Amongst the basic conditions for smooth project activity operations without stoppages and unnecessary disruptions is regular and sufficient funding of the project. Regular and on schedule progress of work activities on site require sufficient cash flow in order to facilitate procurement of materials, plants and equipments on time as well as remuneration of labour force.

Project funds "Funding" is the act of providing financial resources, usually in the form of money, or other values such as effort or time, to finance a need, program, and project, usually by an organization or government. Generally, this word is used when a firm uses its internal reserves to satisfy its necessity for cash, while the term ‘financing‘ is used when the firms acquires capital from external sources (Spinner, M.P. 1989) . Available funds may also refer to funds that can be withdrawn from a margin account at a brokerage firm, where margin loans are still outstanding.

2.3.3 Project Equipment

Equipment are the tools, machines, or other things that you need for a particular job or activity Tangible property (other than land or buildings) that is used in the operations of a business.

Examples of equipment include devices, machines, tools, and vehicles (Ahuja, H.N., Dozzi, S.P., & Abourizk, S.M. 1994). Krazner (2005) defined construction equipment as to heavy duty vehicles, specially designed for executing construction tasks, most frequently ones involving earthwork operations. They are also known as heavy machines, heavy trucks, construction equipment, engineering equipment, heavy vehicles, or heavy hydraulics. They usually comprise five equipment systems: implement, traction, structure, power train, control and information Heavy equipment functions through the mechanical advantage of a simple machine, the ratio between input force applied and force exerted is multiplied. Some equipment uses hydraulic drives as a primary source of motion.

The management of construction equipment is a difficult task. There are two choices with the construction company either buy the equipments or take on rent. Equipment costs may range

from 5% to 10% of the overall construction cost of a building to 40% or more of the total cost for apublic-works project. Given the high cost of equipment, the buyer rent decision has asignificant impact on company profitability.In heavy construction works, optimizing equipment selection based on economicaloperation analyses has a primary role in the success of major construction projects. For construction projects, especially the heavy civil work projects, equipment is comprehended as one major resource that project managers rely upon to perform the required work. Equipment may be owned by the company or rented for a period of time. Equipment fleet may represent the largest investment in the long term for construction companies. This step is considered critical in order to evaluate the rental option and to support decision-makers. The economic analysis of construction equipment is mainly focused on determining the owning and operating costs as well as the economic life for each type of equipment. In order to properly complete the equipment economical analysis, all costs associated with the selected equipment must be considered.

Frame, J. D. (1995) described that equipment selection is a critical factor in the execution of many construction projects. This is to be much more critical in heavy construction projects where the equipment fleet plays a vital role in performing the work. In this type of projects,the equipment fleet may represent the largest portion of the bid price.he also described that the economic analysis of construction equipment is mainly focused on determining the owning and operating costs as well as the economic life for each type of equipment. In order to properly complete the equipment economical analysis, all costs associated with the selected equipment must be considered.it is also better to described a method that assigned downtime costs to a particular yearof equipment life on the basis of an estimated percentage of downtime multiplied by theplanned hours of operation for the machine and the hourly cost of a replacement or rental machine.

2.3.4 Integration with Stakeholders

Stakeholder management is one of the most essential parts of project management. disagreements and change in project characteristics is time, design and budget at the time of construction may arise due to influence and poor participation of stakeholders in the project.so to avoid such a like problems strong engagement between external stakeholders and project

doing parties is necessary and high emphasis should be give to time, budget and design of projects(murad, nov 2015)the main stakeholders of ACCRA are Community, Contractors, Small enterprises, Suppliers of raw materials(Frame, J. D. 1995)

The value of early stakeholder involvement

The possibilities of influencing project success are seen to be best during the early project stages because decisions made early reduce unnecessary changes during later development and even the total life cycle costs. According to several studies early stakeholder involvement yields at least the following benefits

- Leads to a lower likelihood of developing poor designs
- Early involvement In the design stage leads to a higher likelihood of a more effective design, improved construction operations and less crap
- Early knowledge about the project allows room for creative solutions and the intensive exchange of ideas(Frame, J. D. 1995)

2.3.5 Project Control Mechanism

One of the major issues in the project control literature is the difficulty of defining control.This comes about because the project management research has a multiplicity of meaningsfor 'control'. Control is defined as a role, as a process, and as an outcome (Frame, J. D. 1995).Control is also discussed as a practice, a system and a problem (Isaac and Navon,2014).The difficulty of agreeing on a commonly accepted definition may be because of the enerous number of skill-sets needed to measure, monitor, analyze, report and re-schedule projects.five top project manager skills, but control is not on their list. Frame, J. D. (1995), on the other hand, writes that control is a fundamental managerial skill necessary for all project management roles. Thus, all construction managers need experience and knowledge of the purpose, function and processes of control within projects. This knowledge is embedded in project control tools and methodologies (Frame, J. D. 1995). Therefore, in this report the term 'construction project control professionals' identifies managerial practitioners who all have

experience with a range of types of construction projects and project control mechanisms (Frame, J. D. 1995).

In addition, the dynamic nature of a construction project (Ahuja, H.N., Dozzi, S.P., & Abourizk, S.M. 1994) is best understood from a systems perspective because improvement in productivity requires measures of more than one form of activity. The complex interaction between activities of construction projects involves factors such as work readiness, work flow reliability, materials logistics, etc. A systems view of productivity implies project management processes aligned to systems-based construction management methodology (Ahuja, H.N., Dozzi, S.P., & Abourizk, S.M. 1994). Arguably the best known is Lean Construction. The fundamental concept of Lean Construction is production efficiency, defined as minimizing waste. Thus, in this report the concept of control is defined as the application of a systemic project control system. The processes of project control, for the purposes of this report, are connected to the concept of production efficiency (for simplicity sake defined as reduction of waste). And improved project productivity is considered to be the expected outcome of a well implemented project control system (Ahuja, H.N., Dozzi, S.P., & Abourizk, S.M. 1994)

The *APMBoK* takes a broad view of what is meant by the word "control" (APM, 2000). Planning, measuring, monitoring, and taking corrective action are all usually included in the control cycle. Typically, projects utilize a control system, which monitors the difference or gap between the planning variables and the actual results.

Project control systems indicate the direction of change in preliminary planning variables compared with actual performance.

Types of Project Control Mechanism

Basic Types of Project Control Mechanism in Project Management are as follows:

In a project, it is very easy to lose sight of the actual objectives. Large projects acquire a life of their own and, if left to themselves, can spin out of control. There have to be mechanisms to control the project and to ensure that the project is proceeding as planned. Mostly, the control over a project focuses on the following three elements of the project:

i. Performance

ii. Cost

iii. Time

The objective of having controls is to find out that there is a problem and then to alter course by taking corrective measures. Project control is not simply waiting for things to go wrong and then fixing it. It is chiefly to have systems to identify problems before they manifest themselves. There are three basic types of control mechanisms- cybernetic, go/no-go, and post-performance(Ahuja, H.N., Dozzi, S.P., & Abourizk, S.M. 1994).

1. Cybernetic Control:

This is the most common kind of control mechanism. A project has inputs and outputs. The outputs can be in the form of milestones that have to be met. Cybernetic controls focus on the outputs. If these milestones or outputs do not measure up to the set standards, then the situation is investigated to see if there is a sufficient cause to change patterns of activity.

The focus of this kind of control is to reduce deviations from a standard. The more the deviation, more is the attention the situation warrants.

2. Go/No-go Control:

Go/no-go control takes the form of testing to make sure that certain preconditions are met before a task is undertaken. This type of control can be used for a specific part of the project too.Go/no-go controls are linked to the actual plans and are not independently set on a calendar.

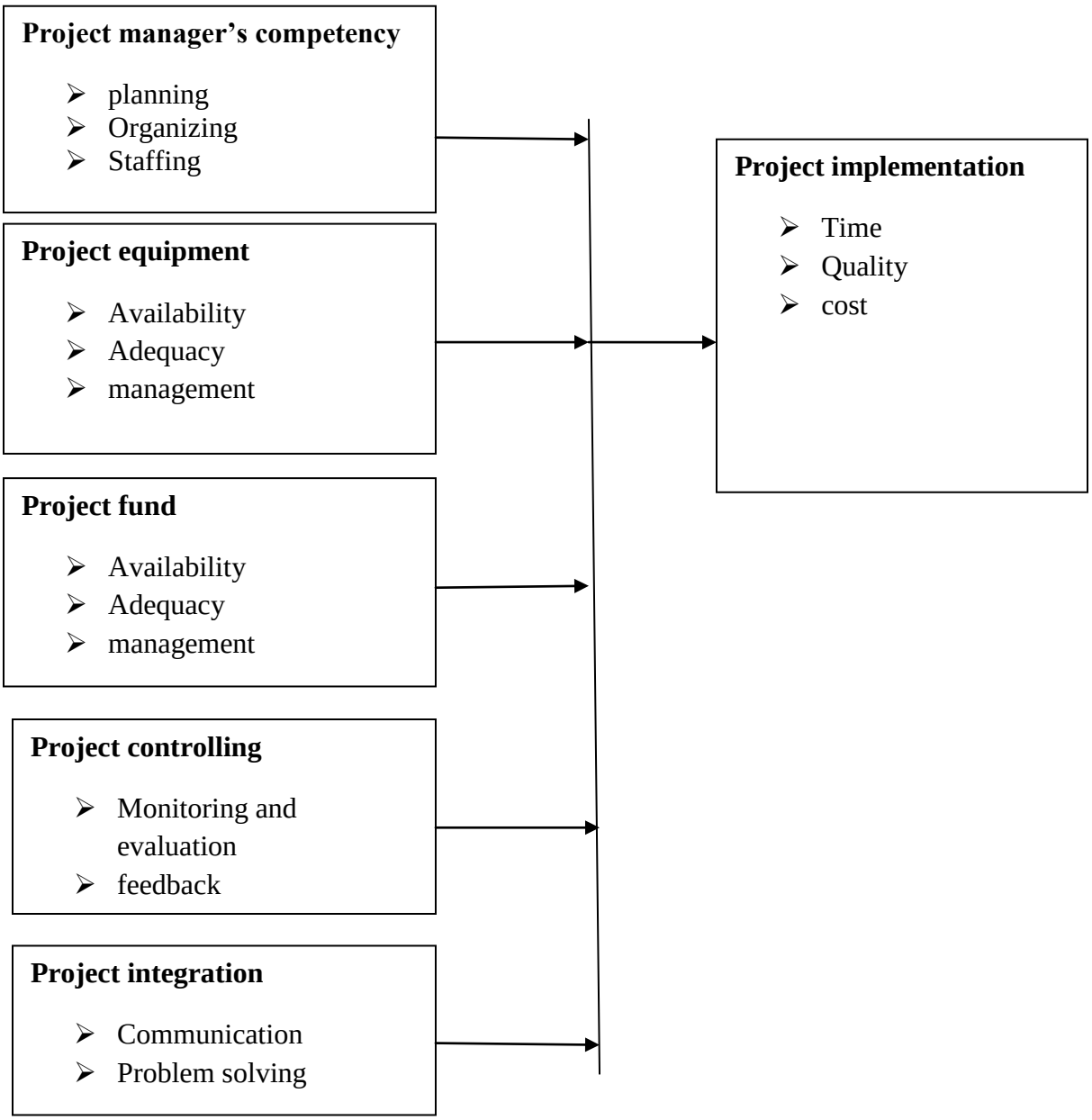
3. Post-performance Control:

Post-performance controls are applied after the completion of the project or the task, The focus here is not on altering what has already happened but in making sure that good and bad practices are recorded for being of help in future projects(Ahuja, H.N., Dozzi, S.P., & Abourizk, S.M. 1994).

2.4 Conceptual Framework

The main objective of this research is to asses factors that have influence on project implementation practice of AACRA with particular focus on ferensay biret dildiy-satelayt tabiya.the dependent variable is project implementation while the independent variables are project managers competency,project equipment, project fund, project integration and project controlling.

Figure 2.1 conceptual framework



Source: David, Dr.Kepha &Dr.aAssumpah,2015

CHAPTER THREE

3. Research Design and Methodology

3.1 Introduction

This chapter describes the various methodologies that was used in the study. This includes the study design, the targets population and sampling technique,sampling design, sources of data, data collection instrument, procedures of data collection, methods of data processing and data analysis ,reliability analysis and ethical considerations.

3.2 Study Design

According to Sekaran and Roger (2011), research design is a master plan that specifies the methods and procedures for collecting and analyzing the needed information. the study adopted causal research design in assessing the factors affecting project implementation and in identifying the factors that have effect on the success and failure of project implementation. Causal research, also known as explanatory research is conducted in order to identify the extent and nature of cause-and-effect relationships. Causal research can be conducted in order to assess impacts of specific changes on existing norms, various processes etc. Causal studies focus on an analysis of a situation or a specific problem to explain the patterns of relationships between variables.

Causal studies may play an instrumental role in terms of identifying reasons behind a wide range of processes, as well as, assessing the impacts of changes on existing norms, processes. Causal studies usually offer the advantages of replication if necessity arises. These types of studies are associated with greater levels of internal validity due to systematic selection of subjects. The explanatory survey design method will be appropriate and useful in exploring how those factors affecting roads construction projects implementation a case of ferensay biret dildiy-satelayt tabiya project.

3.3 Population and Sampling Technique

Target population is defined as a universe of the study as all members of a real or hypothetical set of people or events to which an investigation wishes to generalize results. Therefore target and study population of this study consisted of employees in the ferensay biret dildiy-satelayt tabiya project in AACRA.AACRA is currently building roads throughout Addis Ababa city by itself as weel as the organization give contracts for contractors in building roads. To select sample project the researcher used non probability sampling technique. The researcher selected 1 project which is 8km lengthy road project that takes comparatively long project duration and which participate high number of employees among other projects based on convenience sampling. The target population of this study is believed to have experience and knowledge in the area of study in road construction projects implementation in the project.Because of the nature of the road construction the researcher select the project which are easily accessible and proximate to collect data selected for the purpose of the study.

3.3.1 Sampling Design

To draw sample size from the population the researcher used the following sample determination method developed by carvalho (1984), a sample of 80 staffs are selected from the target population of 500 which is between 281-500 intervals. The following table shows the breakdown of population range the small, medium, and large sample that can be drawn for the study.

3.1 sampling design

Population size	Sample size		
	Small	Medium	Large
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1200	32	80	125
1201-3200	50	125	200
3201-10000	80	200	315
10001-35000	125	315	500
35001-150000	200	500	800

Source: carvalho, 1984.

From target study population 80 employees has the chance to be included in the sample based on simple random sampling and to select those employees the researcher used list of employees of the construction project which is kept in the human resource management office.

3.4 Source of Data

To reach on a sound finding the researcher gathered primary and secondary data from those target populations using questionnaire and from document review.in order to gather primary data self-administered questionnaire used and in order to collect secondary data document review of the AACRA will be made.

3.5 Data Collection Instruments

To undertake the study both primary and secondary data are collected. Secondary data will be collected from different journals, books, periodicals, and from internet sources. Primary data will be collected from self-administered questionnaire. The questionnaire was originally prepared by **Dr.aAssumpah, 2015** and by making some modification on it is used for this study. The information gathered through questionnaire used to determine the possible answers to the research questions and will provide relevant information needed to achieve the research objectives which are collected from target population of the study.

3.6 Procedures of Data Collection

The questionnaire in this research is close ended. Part one is the respondent demographic characteristics. Respondent's information includes gender, age and educational level. part two includes questions about project managers competency, project fund, project equipment, project integration, project controlling mechanisms.

3.7Data Analysis Method

The study used statistical package for social sciences (spss20) to analyze qualitative data. This program used to analyze the descriptive statistics by measuring the central tendency and to measure the distribution of the data. So all the data's that was collected through questionnaire interpreted by this program in order to get meaningful information of the data.

3.8 Reliability Test

Reliability refers to the consistence, stability, or dependability of the data. Whenever an investigator measures a variable, he or she wants to be sure that the measurement provides dependable and consistent results (Cooper & Schindler, 2003). A reliable measurement is one that if repeated a second time gives the same results as it did the first time. If the results are different, then the measurement is unreliable (Mugenda & Mugenda, 2003). To measure the reliability of the data collection instruments an internal consistency technique using Cronbach's alpha will be applied. Cronbach's alpha is a coefficient of reliability that gives an unbiased estimate of data generalizability. An alpha coefficient of 0.75 or higher indicated that the gathered data is reliable as it has a relatively high internal consistency and can be generalized to reflect opinions of all respondents in the target population. Reliability analysis of the questionnaire is made through spss 20 demographic variables of the questionnaire are excluded for the purpose of this analysis 7 variables are included the crombach alpha of the questionnaire is .808 that means 80.8% of respondents have similar way of understanding for the questionnaire that is filled by them.

Table 3.2 Reliability Statistics

Cranach's Alpha	**N of Items**
.808	7

Source: own survey, 2017

3.9 Model and variable specification

For the analysis of the DV and IV of the study multiple regression model used in the regression analysis of variables the model stated as follows:

$Y=\alpha+\beta 1x1+\beta 2x2+\beta 3x3+\beta 4x4+\beta 5x5\ldots\ldots+\beta nXn+£i$

Where

Y=dependent variable (project implementation)

α=the constant term

X1, X2, X3, X4, X5=independent variables (project managers competency, project fund, project equipment, project integration and project controlling).

β1, β2, β3, β4, β5= the slope coefficient of continuous variable
£i= random error/residual term

3.9.1 Variable relationship

- It is assumed that project implementation and project managers competency has direct relationship.
- It is assumed that project implementation and project fund has direct relationship.
- It is assumed that project implementation and project equipment has direct relationship.
- It is assumed that project implementation and project integration has direct relationship.
- It is assumed that project implementation and project controlling has direct relationship.

3.10 Ethical Consideration

As this study will participate individuals in assessing factors affecting road construction projects certain issues will be addressed. the consideration of this issues is necessary for the purpose of ensuring privacy as well as the security of the participants. These issues will be identified in advance and so as to prevent problems that will arise during the research process. Among the significant issues that must be considered includes confidentiality and data protection.

CHAPTER FOUR

Data Analysis and Interpretations

4.1 Introduction

The chapter represents the empirical findings and results of the application of the variables using techniques mentioned in chapter three. Specifically, the data analysis was in line with specific objectives where patterns were investigated, interpreted and implications drawn on them.

4.2 Response Rate

From the data collected, out of the 80 questionnaires administered, 56 were filled and returned, which represents 70% response rate. This response rate is considered satisfactory to make conclusions for the study. Mugenda and Mugenda (2003) observed that a 50% response rate is adequate, 60% good and above, while 70% rated very good. This collaborates with Bailey (2000) assertion that a response rate of 50% is adequate, while a response rate greater than 70% is very good. This implies that based on this assertion, the response rate in this case of 70% is therefore very good.

4.3 Demographic variables of respondents

This section sought to determine the demographic variables of the respondents in the **AACRA**. The findings are shown as in table.

Table 4.1 demographic variables

Variable	classification	frequency	percentage
Gender	Female	14	25
	Male	42	75
Age	18-25	11	19.6
	26-40	44	78.6
	41-55	1	1.8
Level of Education	Diploma	6	10.7
	Bachelor	42	75
	Masters	8	14.3

Source: own survey, 2017

From respondents gender data collected to show the gender disparity of the respondents. The study sought to determine the gender distribution of the respondents in order to establish if there is gender disproportion at road construction industry. From the findings it's indicated that 75% were male and 25% were female.

From the findings, it was noted that most respondents were between the ages of 26-40years old, this age bracket was noted to have the highest percentage of 78.6% respondents. From the findings, it can be inferred that the respondents were old enough to provide reliable insights relevant to the study.

The study sought to seek the level of education of the respondents. From the responses in the questionnaires it was noted that majority of the respondents (75%) were bachelor degree level. The study, from this finding could generally infer that most respondents were well educated and knowledgeable and would therefore provide relevant information on the area of researcher study.

4.4 Project Managers Competency

Table 4.2 Project Managers Competency

Factors	n	Mean	Std. Deviation
To what extent does Organizing influences road construction projects completion?	56	3.8571	.72434
To what extent do you think Staffing influences the road construction project completion?	56	3.9286	.68376
To what extent protecting Worker's safety and health has important in order to reduce accidents and fatalities?	56	4.2857	.62419
To what extent does Communication among staffs and stakeholders influences the road construction projects?	56	3.8214	.93628
to what extent The time required to resolve conflicts between Accra with stakeholders has influence during implementation of road construction projects?	56	3.3750	1.05421
Valid N (listwise)	56		
Aggregate mean	56	3.85356	0.8045

Source: own survey, 2017

The finding of the study indicated that project manager's competency have great influence for the successful implementation and achievement of project goals. This was shown by respondents response of protecting employees safety and health during work attained a mean of 4.2857, the Staffing influences the road construction project completion attained a mean of 3.9286, Organizing influence on road construction projects attained a mean of 3.8571, the necessity of Communication among staffs and stakeholders influence on the road construction project attained a mean of 4.05 and time required to resolve conflicts between Accra with stakeholders attained a mean of 3.3750. Based on the responsescollected from questionaire project managers competency has great influence road construction projects Completion in AACRA.

4.5 Project Fund

Table 4.3 project fund

Factors	N	Mean	Std. Deviation
To what extent does Availability of funds influence road construction projects Completion in road construction projects?	56	4.4643	.50324
To what extent to which Adequate funds influence road construction projects Completion in road construction projects?	56	4.2679	.55567
To what extent does Management of funds influence the road construction projects Completion in road construction projects?	56	4.4643	.50324
Valid N (listwise)	56		
Aggregate mean	56	4.3988	0.52071

Source: own survey, 2017

From the study majority of the respondents agreed that project funds has gret influence for successful implementation and achievement of project objectives.this was shown by respondents response of Availability of funds and Management of funds during implementation of road construction projects attained a mean of 4.4643 respectively and Adequate funds for constructing roads scored a mean of 4.2679. The outcome of the study agrees with Ameh (2011) in which he observed that inadequate funds for the project lead to time over run thereby negatively impacting on construction project implementation. Adequate funding guarantees reasonable cash flow. There should, therefore, be effective funding of project by project owners toavoid unnecessary time overrun with its attendant effect on cost. The study results also agree with Tawil (2013) who observes that financial resources are the most prominent critical factors ineffective project implementation. He states that insufficient capital and progress payment negatively affects progress of work in a construction site.

4.6 Project equipment

4.4 project equipment

Factors	N	Mean	Std. Deviation
To what extent is Quality of work influenced by project equipments of road construction projects implementation and Completion in road construction projects?	56	4.2143	.65267
To what extent that Shorter operating cycle is influenced by project equipments in road construction projects implementation and Completion in road construction aprojects?	56	4.4286	.53452
To what extent does availability of machinery influences road construction projects implementation and Completion in road construction projects?	56	4.2500	.47673
To what extent is Level of project advancement is influenced by project equipment's in road construction projects?	56	4.2679	.55567
To what extent construction equipment's which are used currently are advanced enough to complete the construction of road as planned in your project	56	3.0357	.89370
Valid N (listwise)	56		
Aggregate mean	56	4.0393	0.62265

Source: own survey, 2017

From the study majority of the respondents agreed that project equipments and machineries has great influence for successful implementation and achievement of project objectives.this was shown by respondents response on Shorter operating cycle is influenced by project equipments in road construction attained a mean of 4.4286, Level of project advancement is influenced by

project equipment's in road construction projects attained a mean of 4.2679, Quality of work influenced by project equipments of road construction projects implementation attained a mean of 4.2143, construction equipment's which are used currently are advanced enough to complete the construction of road as planned in a target project attained a mean of 3.39 and Level of project advancement is influenced by project equipment's in road construction projects scored a mean of 3.0357 the responses was strong enough in showing the necessity of machineries in road construction projects and influence it has on road construction projects.

4.7 Project integration

Table 4.5 project integration

Factors	n	Mean	Std. Deviation
How satisfactory is the relationship between ACCRA and major stakeholders?	56	3.4821	.53906
To what extent does the influence of external stakeholders have effect on the successful implementation of road construction projects?	56	4.1964	.58526
How well are disagreements with stakeholders solved in project implementation?	56	3.5893	.68162
Valid N (listwise)	56		
Aggregate mean	56	3.7559	0.60198

Source: own survey, 2017

From the study majority of the respondents agreed that integration with stakeholders has great influence for successful implementation and achievement of project objectives.this was shown by respondents response on influence of stakeholders on project implementation attained a mean of 4.1964, when disagreements arise between ACCRA and stakeholders how well the problem solved scored a mean of 3.5893 and the relationship between ACCRA and stakeholders scored a mean of 3.4821.the outcome of the study agree with (murad, nov 2015) Stakeholder management is one of the most essential parts of project management. disagreements and change in project

characteristics is time, design and budget at the time of construction may arise due to influence and poor participation of stakeholders in the project.so to avoid such a like problems strong engagement between external stakeholders and project doing parties is necessary and high emphasis should be give to time, budget and design of projects.

4.8 project controlling

Table 4.6 project controlling

Factors	N	Mean	Std. Deviation
To what extent does Effective monitoring influence the road construction projects implementation?	56	4.1071	.67900
To what extent does Effective evaluation influence the road construction projects implementation?	56	4.1071	.67900
How effective is controlling of budget, time and quality of design?	56	4.1964	.72412
Valid N (listwise)	56		
Aggregate mean	56	4.1368	0.69404

Source: own survey, 2017

From the study majority of the respondents agreed that project controlling has great influence for successful implementation and achievement of project objectives. This was shown by respondents response on the effectiveness of budget, time and quality of road construction project of accra scored a mean of 4.1964 and. ffective monitoring influence on road construction projects and how effective evaluation has influence in road construction projects implementation attained a mean of 4.1071.

4.9 Correlation analysis

The Spearman's product-moment correlation coefficient (or Spearman's correlation coefficient for short) is a measure of the strength of a linear association between two variables and is denoted by r. Spearman's correlation was used to measure the degree of association between variables under consideration i.e. independent variables and the dependent variable. A correlation coefficient expresses quantitatively the magnitude and direction of the relationship between two variables. Spearman's correlation coefficients range from -1 to +1. Negative values indicates negative correlation and positive values indicates positive correlation where Spearman's coefficient. The following table provides a framework for describing the strength of the measure of association:

Measure of Association	Descriptive Adjective
> 0.00 to 0.20 ; < -0.00 to –0.20	Very weak or very low
> 0.20 to 0.40; < -0.20 to –0.40	Weak or low
> 0.40 to 0.60; < -0.40 to –0.60	Moderate
> 0.60 to 0.80; < -0.60 to –0.80	Strong or high
> 0.80 to 1.0; < -0.80 to –1.0	Very high or very strong

This table is from MacEachron, *Basic Statistics in the Human Services: an Applied Approach*, page 132.The findings are shown as in table 4.7 below

Table 4.7 correlation analysis

		Project Implementation	project managers competency	project fund	project equipment	project integration	project controlling
project implementation	Pearson Correlation	1	.759**	.797**	.787**	.823**	.696**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (2-tailed).							

Source: own survey, 2017

The study in table 4.7 above show that all the predictor variables on projet implementation of Project Managers Competency, Project Funds and Project Equipment, Project Integration and project controlling were shown to have a positive association between them at a significant level.

4.10 Regression analysis

Multiple regression models show the relationship between a dependent variable and a collection of independent variables. According to IBM SPSS Manual "Linear regression is used to model the value of a dependent scale variable based on its linear relationship or "straight line" relationship to one or more predictors". Assumptions of linear regression Normality of the distribution, Linear relationship ,Homoscedasticity (equal variance) and Because the study used five independent variables in multiple regression, there are two additional assumptions that must be assess: Independent of residuals ,Multicollinearity. All of these assumptions are presented below in the tables:

Table 4.8 Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Project Managers Competency	56	.059	.319	-.823	.628
Project Fund	56	.449	.319	-.668	.628
Project Equipment	56	.229	.319	-.175	.628
Project Integration	56	-.003	.319	-.641	.628
Project Controlling	56	-.265	.319	-.757	.628
Valid N (listwise)	56				

Source: own survey, 2017

Multiple regression requires that the IVs in the analysis be normally distributed. The skewness statistics for all independent variables are within the acceptable range for normality (-1.0 to +1.0). All variables meet the assumption of normality.

ANOVA

Table 4.9 ANOVA table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.498	5	2.300	28.730	.000[b]
	Residual	4.002	50	.080		
	Total	15.500	55			
a. Dependent Variable: Project Implementation						
b. Predictors: (Constant), Project controlling, Project fund, Project integration, Project Managers competency, Project equipment						

Source: own survey, 2017

When doing regression analysis we determine whether or not there is a relationship between the IV and the DV by examining the ANOVA table. This can be thought of as the overall fit of the regression model. If the F statistic is significant, we can assume the IV, taken together, have a relationship with the DV. in this case, the probability of the F statistic for the regression analysis is 0.000, less than the level of significance of 0.05.

Table 4.10 model summery

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.861[a]	.742	.716	.28292	1.633
a. Predictors: (Constant), Project managers competency, Project Fund, Project Equipment, Project Integration, Project Controlling					
b. Dependent Variable: Project Implementation					

Source: own survey, 2017

The Durbin-Watson statistic is used to test for independent of residuals. The value of the Durbin-Watson statistic ranges from 0 to 4. In this case, Durbin-Watson is 1.633; we can assume independence of residuals.the R

Table 4.11 coefficiens/effect of factors project implementation on implementation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.334	.459		.729	.000
	Project Managers competency	.145	.169	.200	.856	.003
	Project Fund	.859	.261	.730	3.295	.002
	Project equipment	.764	.391	.820	1.951	.002
	Project integration	.854	.248	.871	3.439	.001
	Project controlling	.071	.159	.091	.445	.001
a. Dependent Variable: Project Implementation						

Source: own survey, 2017

The results presented in the above table shows that taking all other independent variables at zero, a unit increase in Project managers competency leads to a . 145 increase in road construction project successful implementation; a unit increase in Project Fund leads to .859 increase in road construction project successful implementation; a unit increase in Project Equipment leads to .764 increase in road construction project successful implementation, a unit increase in Project integration leads to .854 increase in road construction project successful implementation and a unit increase in project controlling leads to .071 increase in road construction project successful implementation. From the findings it can be concluded that Project Equipment, Project Managers Competency, Project Funds, Project Equipment, project integration and Project Controlling influences Construction Project Completion.

CHAPTER FIVE

Summary of the Findings, Conclusions and Recommendations

5.1 Introduction

The following chapter presents a summary of the study findings and comes up with conclusions based on the outcome of the data collected and analyzed with different methods.

5.2 Summary of findings

Respondents of the study comprised of all employees which is participated on the studied project. The outcome shows that on the issue of gender, the industry is male dominated implying gender imbalance. The respondents had attained high education at the level from diploma and degree and above. The response rate of 70 % was considered very adequate for the study. The study investigated that project manager's competency project fund, project equipment, project integration and project controlling has a significant influence for the successful road construction project implementation.

5.3 Conclusions of the study

The construction industry is a major component, a key contributor and major player in the economic development of any given economy. It provides numerous employment opportunities to the skilled, semi skilled and unskilled segments of society's labor force, offers market for construction materials hence uplifting living standards to many people and provides the infrastructural platform for further economic development. Due to numerous advantages derived from the industry to the economy, it is critical and imperative to facilitate its effectiveness in performance and delivery.from the finding of the study the following conclusions are made:

- Project managers competency has great influence on successful implementation and completion of AACRA, ferensay biretdildiy-satelite tabiya project

- Project fund availability, adequacy and management have great influence on successful implementation and completion of the projects in AACRA, ferensay biretdildiy-satelite tabiya project
- project equipment has high influence on successful completion of road construction projects in AACRA, ferensay biretdildiy-satelite tabiya project.
- project integration which includes Relationship with stakeholders, problem solving when disagreements arise has high influence on road construction projects Completion in AACRA, ferensay biretdildiy-satelite tabiya project.
- project controlling has a significant advantage for the successful completion of road construction projects in AACRA, ferensay biretdildiy-satelite tabiya project.

5.4 Recommendation

- AACRA should give high attention on empowering project managers in order to ensure that they have the skill and knowledge in the functions of planning, organizing, staffing and monitoring and controlling of projects
- AACRA should continuously manage on how projects utilize funds which is planned to be used in running projects.
- AACRA should increase their concern on management of equipments because the costs of equipment's are expensive to afford.
- AACRA should give high emphasis for the community and other major stakeholders because their influence will have impact on project parameters of time, cos and quality of design.
- AACRA should give high emphasis for monitoring and controlling of road construction projects.