



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE
STUDIES**

**THE PRACTICE AND CHALLENGES OF PROJECT MANAGEMENT
AT ADDIS ABABA CITY ROAD AUTHORITY: THE CASE OF BETEL-
AUGUSTA ROAD PROJECT**

BY: EYOB BIRHANU SHIFERAW

**A RESERCH PROJECT SUBMITTED TO ST. MARY'S UNIVERSITY, IN
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DECLARATION

I hereby declare that the work entitled: “The Practice and challenges of project management at AACRA: The case of betel- Augusta road project is the outcome of my own effort and study and that all source of materials used for the study have been duly acknowledged. I have produced it independently except of the guidance and Suggestion of my Research Advisor. This study has not been submitted for any degree in this University or any other university. It is offered for the Partial Fulfillment of Requirements for Award of Masters of Art in Project Management

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CERTIFICATION

This is to certify that Eyob Berhanu Shiferaw has carried out this research project on the topic entitled “The Practice and Challenges of Project Management at AACRA: The Case of Betel-Augusta Road Project” under my supervision. This work is original in nature and it is sufficient for submission for the partial fulfillment for the award of Degree of Masters of Art in Project and Management.

Muluadam Alemu (PHD)

Signature _____

Date _____

Addis Ababa, Ethiopia

ACKNOWLEDGMENT

I dedicate the entire work to God Almighty, who made all things possible by granting me the strength, health, courage and inspiration throughout my education, and to my father, Selamawit Ararso, Frezer Mengistu, all my family and friends, for their advice, support and encouragement towards my success in education. My sincere gratitude also goes to my thesis advisor Muluadam Alemu (PhD) for his academic guidance throughout the completion of this project. Furthermore, I appreciate the assistance offered by the study organization. And I am grateful to all respondents their cooperation and finally I thanks to knife for support me to get any information about the organization and strength me on time of data collection.

ACRONYMS AND ABBREVIATIONS

AACRA – Addis Ababa City Road Authority

SPSS - Statistical Package for Social Science

PMBOK – Project Management Body of Knowledge

SHM – Stakeholder Management

CSFs – Critical Success Factors

PMI – Project Management Institute

WBS -Work Breakdown Structure

HRM – Human Resource Management

RCP's – Road Construction Projects

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ABSTRACT

A project is a temporary effort undertaken to create a unique product, service or result and a unique venture with a beginning and an end, conducted by people to meet established goals within parameters of cost, schedule and scope. Literature shows that applying project management practices offers organizations the means to be efficient, effective, and competitive in a shifting complex, and unpredictable environment. Projects are needed to be completed within the time frame, budgeted cost and required quality. However, unfortunately many projects take longer time to complete, cost more than necessary and some projects are cancelled because of inefficient planning, execution, controlling and related challenges directly and/or indirectly related with it. The general objective of this study is to assess practices and the challenges encountered through project management on AACRA's road construction project. This study has made use of descriptive research design. Mixed research approach has been adopted to carry out the study. Primary data needed for the study was collected from 30 respondents which are selected using census. The collected data was analyzed with the help of SPSS version 20.0. Then the data presented quantitatively using descriptive statistics with the help of table, frequency and percentage. Semi-structured interview was also conducted with the 5 project managers, and analyzed qualitatively by integrating secondary data obtained from AACRA chart, reports, magazines AACRA booklet. The findings of the research is analyzing the practices of project management in road construction projects undertaken by AACRA from the phase starting projects up to closed out which is indicated by Average mean for the project management practice in initiation, planning, executing, monitoring and control and closing phase is about 2.796, 3.0765, 3.0241, 3.0239 and 3.0667 respectively, it is recommended that the project manager should understand project goals and objectives, check the statements that related to the practices of project management in each phases of the project. Such as initiation, planning executing, monitoring and control and closing. In addition to this the project manager and the project team should manage the ten knowledge area to meet the project successfully.

Key words: AACRA, Project Manager, Road construction project, project Management practices, project management challenges. Project management knowledge area.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

A project is a temporary effort undertaken to create a unique product, service or result and a unique venture with a beginning and an end, conducted by people to meet established goals within parameters of cost, schedule and scope (PMI, 2008). Projects play a major role in the economic development of a country. They are the building blocks for generating additional capital and for ensuring a flow of goods and services. The objective of the project management is to realize the planned project objectives (economic development, generation of additional capital, etc.). The success of any project is measured by its completion time, within the budget cost and meets the planned performance based on the initial plan. In contrast to advancement of project management practices particularly in exploration of new guidelines and standards (PMI, 2013), both project and/or non-project oriented organizations including both developed and developing countries are struggling with rehabilitating non-performing projects (Navaretti, et al, 2017). The impact is high in developing economy such as Africa. Literature shows that applying project management practices offers organizations the means to be efficient, effective, and competitive in a shifting complex, and unpredictable environment (PMI 2009; Ika 2017). Attarzadeh and Ow (2008) after identifying comprehensive factors causing project failure related to planning problems, implementation, monitoring and controlling problems; recommends that applying good project management practices would help to avoid these failure factors, and leading to project success. Hence, this study is particularly concerned with the practice and challenges of road projects management with the focus of different projects undertaken by Addis Ababa city road authority

1.2. Background of the organization

Addis Ababa city was founded by Minilik II and Empress Taitu in 1887, the history of the city's road development also began from the inception of the city and Minilik II constructed the first ever two roads in the city as well as in the country that stretched from his palace to England embassy in 1902. In 1994 the first roller was imported by the emperor and was being pulled by many people for its operation. Emperor Minilik was believed to be the first in importing two cars in Addis Ababa and introduced the car technology in the city for the first time in 1907. AACRA, (2020). The country's modern road construction is highly linked with Emperor Haile Selassie's ruling period. During the regime of Haile - Selassie / a number of contractors were organized to carry out road construction. The first one to be established by the government to construct roads was the public works department. It was established to construct roads in Addis Ababa and in its surroundings. After a few years this department was raised to a minister level and Addis Ababa also got the chance to establish its road development organizational structure when it was decided for Addis Ababa to have a mayor and a council in 1942, the city's road construction and maintenance was organized under the municipality AACRA,(2020). To fulfill the road construction activity together with building works the "Road and building works" department was established. The department stayed until the replacement of the Haile - Selassie regime by the Derg regime performing its duties. But no fundamental organizational change of the department was observed in the Derg regime. In 1993 the new government EPRDF has established regional government and gave them power to administer their region with autonomy. During this time Addis Ababa also established as one of the regions. The Addis Ababa administration during this period established the "bureau of works and urban development" and the bureau organized a department under it to carry out the road construction and maintenance works. The newly established road department constructed and maintained the city road until the establishment of Addis Ababa city roads Authority in March 15, 1998 by regulation No. 7/1998 to be administered by a board of directors to contract, maintain and administer the road works in Addis Ababa by the city Administration. The total length of road constructed in the city until the establishment of the authority in March 1998 was 1300 km of which 900 km was gravel road and the remaining 400 km was asphalt surfaced road. The Addis Ababa city road Authority has done remarkable progress in the city road expansion and upgrading in the last 22 years since its establishment. To date the city road length reached 7613 kms of which 4507.54 kms is (gravel surfaced,

cobblestone and other roads) and 3105.46 kms is asphalt surfaced and the road network coverage has reached 20.34% compared with the developed area of the city. AACRA,(2020)

1.3. Statement of the problem

Projects are needed to be completed within the time frame, budgeted cost and required quality. However, many projects take longer time to complete, cost more than necessary and some projects are cancelled because of inefficient planning, execution, controlling and related challenges directly and/or indirectly related with it (Richard A. 2012).road construction in Ethiopia are increasing in size and also increasing project delayed. According to the study conducted on Ethiopian construction industry by Werku Koshe, K. N. Jha, (2016) shows that in Ethiopia only 8.25% projects have been finished to the original targeted completion date. According to this study, the remaining 91.75% delayed off its contractual time. In regard to Addis Ababa city road construction, delay is becoming the major challenges that the authority is facing and challenging the life of the residents.

There are no evidences or previous research study which show Ethiopian road construction project management practice and challenges are effective. Rather several evidence from ongoing project and review of documents cast doubt on effectiveness of project management practice and challenge in Ethiopia road construction there has been an extend delay cost and quality in some of project and there were some an attended goal of project. This problem are believed to be among other factor due to luck of efficient project management.

Previous literature regarding road construction do not cover all aspects of challenge and practice of project management in one study. Most of them focus on single aspects project management issues such us stockholder management, risk management, planning and monitoring and evaluation. But a challenging factor in one area will have a significant ripple effect all other related areas. Addis Ababa city road authority also not conducted assessment on practice and challenge project management. Those comprehensive view of all project management practice and challenge are necessary in order to effective project management being implemented. In line with, the study intended to fill this research gap to identify and evaluate major practice and challenge in Ethiopia road construction on Addis Ababa city road authority in all project management.

1.4. Research questions

1. How did the project manager and project team practices project management in each phases of project undertaken by AACRA?
2. What are the major challenges affect project management in Addis Ababa City Road Authority?
3. How does AACRA deal with the challenges of road project management on basic knowledge areas?

1.5. Objective of the Study

1.5.1. General Objective

- ❖ The general objective of this study is to assess practices and the challenges encountered through project management on AACRA's road construction project.

1.5.2. Specific Objective

Based on the general objective of the study and the research questions above, this study has the following specific objectives.

- ❖ To assess the practice of project management in each project phases in road projects that undertaken by AACRA.
- ❖ To identify the major challenges that affect road projects management practices in AACRA; and
- ❖ To assess how the project team and manager can tolerate the problems that face during Initiating, planning, executing and controlling on road projects.

1.6. Significance of the Study

This research project paper helps to look in to challenges encountered while implementing road projects management in Addis Ababa different sub city's undertaken by Addis Ababa city roads authority.

This study aimed to point out these difficulties and thus improve the road projects management practice in order to benefit from the findings. Project managers and project teams who are involved in the planning, designing, implementation and control of Addis Ababa city road projects undertaking by ACCRA specifically betel – Augusta road project could make use of the obtained information of this study. Finally, it contributes for project

management knowledge in that the research paper follows a different approach in categorizing the challenges with project management knowledge areas that can be used as a baseline for further study.

1.7. Scope of the Study

The study covers only to focus on the practices of road project in each phases and challenges in ten project knowledge areas of Addis Ababa city road authority in the case of Betel – Augusta road project. It doesn't incorporate closing process groups because the project is ongoing and other related issues. The project only focuses on Betel-Augusta road project. The respondents were focused only from the organizations head office, site engineers and project managers. In Betel – Augusta road project who are involved in the active one.

1.8. Organization of the Study

The project work was organized into five chapters. Chapter one which is the introductory part presents background study, project description, statement of the problem, objectives of the study, research questions, scope, limitation and significance of the study. Chapter two comprises of literature review and quotes the various related works done in this area of study, take place about project process groups, project management success and all the important frame works and concepts. Chapter three which is the research methodology part covers research design, target population; sampling techniques, sample size and data collection tools. And chapter four which is data analysis and findings part reveals findings and analysis from both qualitative and quantitative data collected from the instruments are analyzed and described exhaustively. The last chapter, chapter five that is the summery finding, conclusion and recommendation part concludes and recommends.

CHAPTER TWO

LITERATURE REVIEW

The main objective of this chapter is to provide an understanding to the concept of project, Project Management, project management challenges and the context of roads project management practice in Addis Ababa City Road Authority to help us underline the research subject and objectives.

2.1. Definition of Project

According to PMI (2013) a project is defined as a temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates that a project has a definite beginning and end. Temporary does not necessarily mean the duration of the project is short. It refers to the project's engagement and its longevity. Temporary does not typically apply to the product, service, or result created by the project; most projects are undertaken to create a lasting outcome. Every project creates a unique product, service, or result. Although repetitive elements may be present in some project deliverables and activities, this repetition does not change the fundamental, unique characteristics of the project work. Because of the unique nature of projects, there may be uncertainties or differences in the products, services, or results that the project creates. According to (Kerzner, 2013) a project can be considered to be any series of activities and tasks that: have a specific objective, with a focus on the creation of business value, to be completed within certain specifications, have defined start and end dates, have funding limits (if applicable), consume human and non-human resources (i.e., money, people, equipment), are multifunctional (i.e., cut across several functional lines). All projects share one common characteristic the projection of ideas and activities into new endeavors. The ever present element of risk and uncertainty means that the events and tasks leading to completion can never be accurately foretold (Triant & Dennis, 2008).

2.1.1 Operational Definitions of Key Terms

Project: - refers to a temporary, definitive beginning and definitive end, endeavor undertaken to create a unique product or service.

Knowledge Areas: - is an identified area of project management such as time management, cost management, procurement management, stakeholder management and others.

Project Management: - is the application of knowledge, skills, tools, and technology to project activities to meet or exceed stakeholder needs and expectations from a project

Project Management processes: - is the specific methodology the organizations develop for the management of all systems applications in a company to achieve its objective.

Project Management Process Success: - This focuses upon the project process and, in particular, the successful accomplishment of a project on cost, time, and quality objectives.

Project Management Process Success Criteria: -values, on which project success can be measured and evaluated.

Project Charter: A document issued by the project initiator or sponsor that formally authorizes the existence and provides the project manager with the authority to apply organizational resources to project activities.

Initiating: Tasks and activities that conceptualize and/or authorize the project or phase. It can include activities like defining project objectives, scope, purpose and deliverables to be produced.

Planning: activities and related tasks that define and refine objectives within the project and tells everyone involved where you're going and how you're going to get there.

Executing: activities and related tasks that coordinate resources to carry out the plan and its main purpose is to deliver the project expected results (deliverable and other direct outputs).

Monitoring and controlling: it is a monitoring and measuring progress regularly to identify variances within the plan, so corrective actions can be taken if needed.

Closing: finalize all activities/ tasks and above processes to close the project and involves handing over the deliverables to your customer, passing the documentation to the business, cancelling supplier contracts releasing staff and equipment, and informing stakeholders of the closure of the project.

2.1.2 Project Life Cycle and Project Phases

According to Martinic et al (2012), a project life cycle is a collection of sequential and sometimes overlapping project phases. Regardless of size and complexity, all projects can be mapped to generic life cycle structure as illustrated in Fig. 1:

- starting the project,

- Organizing and preparing,
- Carrying out the project work, and
- closing the project

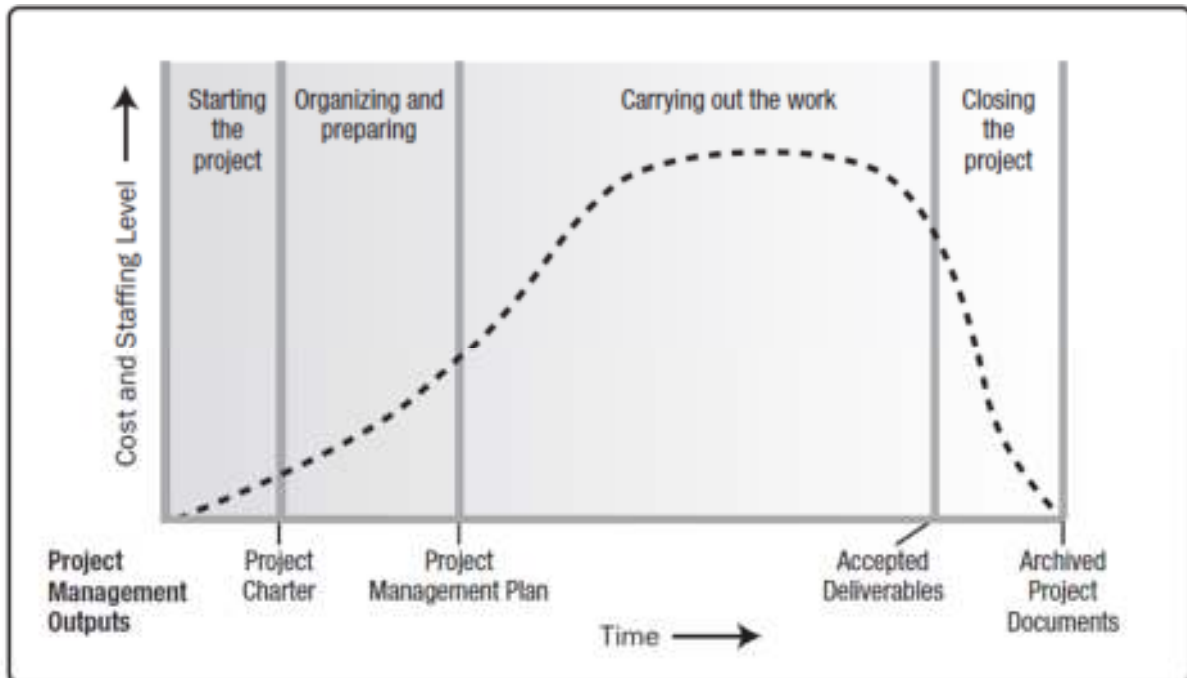


Figure 2.1 Typical Cost and Staffing Levels across a Generic Project Life Cycle Structure

A project phase is a collection of logically related project activities that result with completion of one or more deliverables. A phase may emphasize processes from a particular project management process group, but it is likely that most or all processes will be executed in some form in each phase. The phase structure allows the project to be segmented into logical subsets and provides a formal basis for control. Each phase is formally initiated to specify what is allowed and expected for that phase. The beginning of a phase is also a time to revalidate earlier assumptions, review risks and define in more detail the processes necessary to complete the phase deliverables. The project phase is generally concluded and formally closed with a review of the deliverables to determine completeness and acceptance. (Martinic et al., 2012; PMI, 2013).

The phase structure allows the project to be segmented into logical subsets for ease of management, planning, and control. The number of phases, the need for phases, and the degree of control applied depend on the size, complexity, and potential impact of the project. Regardless of the number of phases comprising a project, all phases have similar characteristics:

- The work has a distinct focus that differs from any other phase. This often involves different organizations, locations, and skill sets.
- Achieving the primary deliverable or objective of the phase requires controls or processes unique to the phase or its activities.
- The closure of a phase ends with some form of transfer or hand-off of the work product produced as the phase deliverable. This phase end represents a natural point to reassess the activities underway and to change or terminate the project if necessary. This point may be referred to as a stage gate, milestone, phase review, phase gate or kill point. In many cases, the closure of a phase is required to be approved in some form before it can be considered closed. There is no single ideal structure that will apply to all projects. Although industry common practices will often lead to the use of a preferred structure, projects in the same industry—or even in the same organization—may have significant variation. Some will have only one phase, as shown in Figure 2-2. Other projects may have two or more phases.

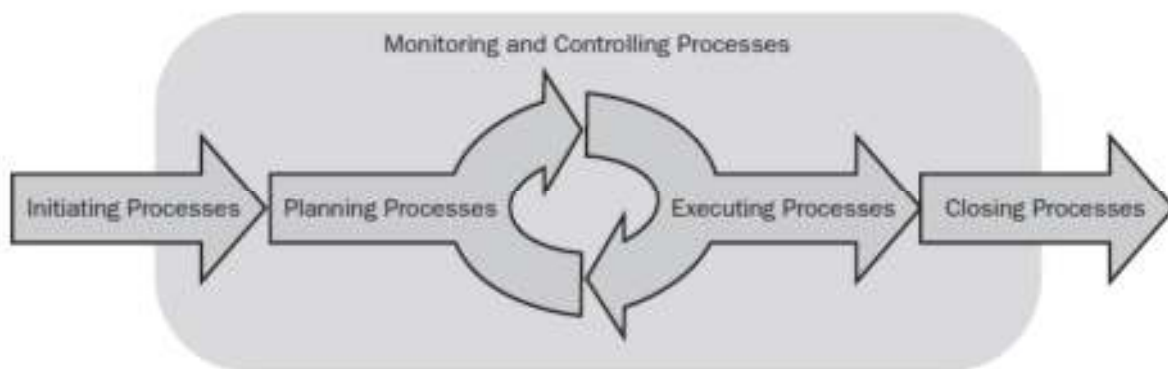


Figure 2.2 Single-Phase Project

2.2. Different Approaches to Project Management

Project Management Methodology

Maintaining a suitable project management methodology is necessary for the success of the organization. While organizations use processes that are repeatable on projects, adopting and maintaining an appropriate project methodology is crucial. Achieving project management excellence, or maturity, is more likely with a repetitive process that can be used on each and every project. This repetitive process is referred to as the project management methodology. If possible, companies should maintain and support a single methodology for project management (Kerzner, 2017). Good methodologies are best practices and can lead to sole-

source contracting based on the ability of the methodology to continuously deliver quality results and the faith that the customer has in the methodology (Kerzner, 2018). Project Management Methodology refers to a technique, tool, method, or approach used effectively to arrive at the desired outcome. In this sense, project management body of knowledge (PMBOK) and projects in controlled environment (PRINCE2) are some of the effective project management Methodologies. According to (Kerzner 2017) the characteristics of a good methodology based upon integrated processes include: A recommended level of detail, Use of templates, Standardized planning, scheduling, and cost control techniques, Standardized reporting format for both in house and customer use, Flexibility for application to all projects, Flexibility for rapid improvements, Easy for the customer to understand and follow, Readily accepted and used throughout the entire company, Use of standardized life-cycle phases (which can overlap) and end of phase reviews, Based upon guidelines rather than policies and procedures. Hence choosing the right project management methodology to execute projects in an organization is a vital step. There are many different and, in some cases, overlapping methodologies and approaches to managing project complexities. Some of the most popular project management methodologies include agile, waterfall, PRINCE2.

2.3. Project Management Success and Failure

In traditional project management, projects are often measured in terms of budget, schedule, scope, or quality. Benefits management as a concept, however, focuses more on the actual value that the projects are able to deliver to the end customer (Kerzner, 2018). PMI; (2017) also states that traditionally, the project management metrics of time, cost, scope, and quality have been the most important factors in defining the success of a project. More recently, practitioners and scholars have determined that project success should also be measured with consideration toward achievement of the project objectives.

Project stakeholders may have different ideas as to what the successful completion of a project will look like and which factors are the most important. It is critical to clearly document the project objectives and to select objectives that are measurable. Three questions that the project manager should answer are: What does success look like for this project? How will success be measured? And what factors may impact success? The answer to these questions should be documented and agreed upon by the project manager (PMI, 2017). Hence it is possible for a project to be successful from a scope, schedule and budget viewpoint, and to be unsuccessful from a business viewpoint (PMI, 2017). Further Triant and Dennis, (2008), identified the following factors necessary for achieving these three objectives: good

project definition and a sound business case; appropriate choice of project strategy; strong support for the project and its manager from higher management; availability of sufficient funds and other resources; firm control of changes to the authorized project; technical competence; a sound quality culture throughout the organization; a suitable organization structure; appropriate regard for the health and safety of everyone connected with the project; good project communications; well-motivated staff; and quick and fair resolution of conflict. This will lead us to the concept of critical success factors(CSFs); (Kerzner, 2018) holds that success factors are defined at the initial stages of the project or program, even before they become actual contracts, and are a direct consequence of the strategic goals allocated to the project or program. CSFs vary with projects and intent here is some that apply over a large variety of projects (Kerzner, 2018): Early customer involvement; High-quality standards; Defined processes and formalized gate reviews; Cross-functional team organizational structure; Control of requirement, prevention of scope creep; Commitment to schedules; disciplined planning to appropriate level of detail and objective and frequent tracking; Commitment of resources; right skill level at necessary time; Communication among internal teams and with customer; Early risk identification, management, and mitigation; no surprises and Unequaled technical execution based on rigorous engineering.

Critical success factors (CSFs) are inputs to project management practice which can lead directly or indirectly to project success (Alias et al., 2014). From a Project Management perspective, critical success factors (CSFs) are characteristics, conditions, or variables that can have a significant impact on the success of the project when properly sustained, maintained, or managed (Alias et al., 2014). Effective and efficient management of critical success factors is the basic requirement of project success (Iram, 2016). Alias et al., (2014) stated that to increase the chances of a project succeeding it is necessary for the organization to have an understanding of what are the critical success factors, to systematically and quantitatively assess these critical factors, anticipating possible effects, and then choose appropriate methods of dealing with them. There are many researchers who conducted different researches in order to find out various critical success factors for the project success (Frefer et al., 2018). Frefer et al. (2018) identified ten critical success factors related to successful implementation from Pinto (1998), six critical success factors for successful projects from Kerzner (1987), and studied ten critical success factors at each of the four stages of the project lifecycle from Pinto and Prescott (1988). Frefer et al. (2018) stated that the development of is related to answers the following questions: “what factors lead to project management success?”, “what factors lead to a successful project?” and “what factors lead to

consistently successful projects?” Collins and Baccarini (2004) differentiated between success criteria and success factors by stating that “criteria are used to measure success whilst factors facilitate the achievement of success. Further Collins and Baccarini (2004) holds Project success criteria consists of two components product success and project management success.

Project Management Success focuses upon the project process and has three criteria: Meeting time, cost and quality objectives, Quality of the project management process, and satisfying project stakeholders’ needs where they relate to the project management process (primarily project owner and project team). Product Success deals with the effects of the project’s final product and has three criteria: Meeting the project owner's strategic organizational objectives (goal), Satisfaction of users’ needs (purpose), and Satisfaction of stakeholders' needs where they relate to the product (primarily customer/user). Project Management Success influences Product Success - Project management success can influence the achievement of product success. Good project management can contribute towards product success but is unlikely to be able to prevent product failure. For example, project management may help to identify the unfeasible nature of the project, and indicate that it should be abandoned or change. Poor project management in terms of cost and/or time overruns may result in the non-attainment of product success such as profitability or market share (Collins & Baccarini, 2004).

2.4. Project Failure

A project is considered as a failure one if a project fails to meet the expectation in line with the stakeholders and the failure incident of project is associated with consideration of cost, quality and time (Saxena, 2016). According to Saxena (2016) the significant part of a project failure is associated with the consideration with not meeting specific targeted benefit for business case. Major reason behind the failure of the project not only associated with only one reason. There are several reasons that contribute to the failure of the project. It is clear that anything opposite to success indicator of project work can be considered as failure (Saxena, 2016). Montequin et al, (2016) explains ‘failure’ as the systematic and widespread noncompliance of the criteria which defines a successful project.

2.5. Project Management Knowledge Area

Project Management skills are organized around the ten knowledge areas described in the Project Management Body of Knowledge, PMBOK, (2013) published by the Project Management Institute.

2.5.1. Project Integration Management Challenges

Project integration management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups (PMI, 2017). Project Integration Management includes seven major processes from the start of the project through completion of the project. Hence most of the challenges identified from various literature fall in this knowledge area. Failure to assign and identify Project Manager early in the project is the first challenging factor identified in this category. Project Integration Management is specific to project managers. Whereas other Knowledge Areas may be managed by specialists (e.g., cost analysis, scheduling specialists, risk management experts), the accountability of Project Integration Management cannot be delegated or transferred (PMI, 2017). Hence A project manager identified and assigned as early as possible, preferably while the project charter is developed and always prior to the project prior to the start of planning is an important element (PMI, 2017). Skill, competency and leadership of the project manager is also important an important factor. According to XABA, (2011), in most organizations, project managers are accountable for the successful delivery of complete projects. Increasingly, this success depends on project managers' possessing and utilizing skills and competencies. Lack of clarity of goals and missions is also another important challenge factor identified. The key benefits of developing Project Charter process are that it provides a direct link between the project and the strategic objectives of the organization (PMI, 2017).

The project management plan defines how the project is executed, monitored, controlled, and closed (PMI, 2017). Lack of proper planning is one of a challenge factor that inhibits the successful completion of projects (Stephen, 2018). Poor planning does not provide any coherent mechanism by which the project would be implemented. Therefore employers and team members at certain points of the projects do not have a clear direction as what to do, when and how (Stephen, 2018). There should be detailed project plan documented this include how the Project Manager maintain information about each project example project time, cost, duration, client name, start and end date, requirements changes, and client's comments and feedback against each project.. An effective means of learning from experience that combines explicit and tacit knowledge to the continuous improvement of project management processes and practices is one of a success factor Davies (2002). According to Cooke (2002) continuous improvement represents the fifth and highest stage of project management maturity in an organization. Knowledge is commonly split into "explicit" (knowledge that can be readily codified using words, pictures, and numbers) and

“tacit” (knowledge that is personal and difficult to express, such as beliefs, insights, experience, and “know-how”). Knowledge management is concerned with managing both tacit and explicit knowledge for two purposes: hence Lack of Process for project knowledge management and capturing lessons learned is an important challenge factor in this study. Budgeting for monitoring and evaluation tasks and overall responsibilities must be listed and analyzed where necessary. Items associated with each task must be determined, including their cost, and there must be a budget for staffing, including full-time staff, external consultants, capacity building/training, and other human resource expenses (Tengan & Aigbavboa, 2016). If the objectives of monitoring and evaluation are not measurable, cannot be used to evaluate project performance and achievements or to communicate project results (Tengan & Aigbavboa, 2016). Hence Limited resources and budgetary allocations for monitoring and evaluation and poor data quality, data gaps and inconsistencies are important challenging factors identified for this study.

2.5.2. Scope Management Challenges

Project scope management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully (PMI, 2017). Managing the project scope is primarily concerned with defining and controlling what is and is not included in the project. Mirza, Pourzolfagha and Shahnazari (2013) a major contribution to unsuccessful projects is the lack of understanding or defining project and product scope at the start of the project. A properly defined and managed scope leads to delivering a quality product, in agreed cost and within specified schedules to the stakeholders. Mirza et al. (2013) noted that a project scope deals with the required work to create the project deliverables. The scope of the project is specific to the work required to complete the project objectives. A product scope, on the other hand, is the attributes and characteristics of the deliverables in the project creation. The product scope is measured against requirements, while the project scope is measured against the project plan. Without an agreed upon and documented vision, there is little hope of achieving success. It is essential for each project to clearly define and document its scope so that the project can move forward in a coordinated manner and requirements can be written (Mirza, et al., 2013). In aviation projects Triant and Dennis, (2008) holds that every project should be defined as accurately and fully as possible before it is allowed to start. The customer’s specification should set out all the requirements in unambiguous terms, so that they can be understood and similarly interpreted by customer and contractor alike. However it has to be admitted that some projects are so

surrounded by uncertainty that they cannot be defined adequately before work starts (Triant & Dennis, 2008). from existing bibliography and the previous work on the matter Montequin et.al, (2016) identified scope management challenges such as Continuous or dramatic changes to the initial requirements, Customer's requirements inaccurate, incomplete or not Defined, Badly defined specifications, Unrealistic customer expectations, Project requirements deficiently documented as constraining factors in project management.

2.5.3. Quality Management Challenges

Project quality management includes the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken (PMI, 2017). It is evident that quality requirement in AACRA projects of RC is very high. Study by (Hong & SUN, 2006) indicated that quality control can be divided into three stages in betel Augusta road projects: namely, construction preparation, construction period and completion acceptance. It is very important to take adequate quality control measures for the stages above mentioned. Quality control at preparation period is the key point for project quality control. Based on the project management practice, the following main control measures can be taken during the preparation period.

1. Review road project management plans
2. Review the qualification of subcontractor.
3. Check the qualification of material and building component suppliers.
4. Strictly control the application and check procedure of material, equipment, semi products and products.
5. Prepare quality standards for as cast concrete and additional standards for steel structure manufacturing and installation.

During construction Quality control measures can be

1. Use all kinds of instruction, such as rectification, working stop, delay payment, change construction team and major responsible person as control measures.
2. Jointly check the quality per month. The project management team, together with members from client, main contractor and construction team to check the quality and evaluate the quality. At completion acceptance stage, the quality control work includes check the scope of contract, rectification, check as-built drawings and technical documents, writing quality review reports about the whole project work and assist the client to organize completion acceptance work and relative authorities confirmation. Amalraj et.al, (2007), holds that

quality assurance and quality control should be managed by the parent company, not by a contractor or other third party. It is also required that the parent company should review and approve job specific construction contractor quality plans prior to the work being started. Montequin et.al, (2016) in their survey identified Quality checks badly performed or not performed at all as constraining factors in project management.

2.5.4. Time Management Challenges

Project time management includes the processes required to manage the timely completion of the project (PMI, 2017) and scheduled time frame is extremely crucial in projects. And the odds of successfully completing a project under unreasonable deadlines are generally not feasible expectations. Ikediashi, et al (2014) in their study stated that Schedule delays, otherwise known as time overruns, is the highest challenge factor and are considered critical to the failure of projects in AACRA Projects. Further holds that Inadequate planning by contractors and project managers, improper site management by contractors, inadequate experience handling projects, and delays in payments to contractors by clients are factors that result in schedule delays Ikediashi, et.at, (2014). In their study (Hong and SUN, 2006) identified control measures for the effective project time management of mass infrastructure. Review the overall construction progress organization submitted by main contractor and critical path and milestones of schedule network. Dynamically check the execution of the project schedule according to review the annual, seasonal and monthly schedule reporting. In addition, use computer aided system to manage the schedule network control and check construction progress records every day analyze every week and summarize and adjust every month. Reasonably arrange the lag relationship between the activities.

2.5.5. Cost Management Challenges

As defined by (PMI, 2017) Project cost management includes three major functions called cost estimating, budgeting and cost control. The task for the cost management function is to produce information for internal users who need accurate, detailed and frequent economic information for making decisions (Kujala et al., 2014). Project management practice depends a lot on forecasting in planning for the projects and the organization and a lot of project failures known in literature are mostly due to wrong estimate or costing problem (Abdulrahman, 2016). Kujala et al. (2014) on their empirical study on challenges of complex projects identified major cost management challenges.

1. Due to uniqueness of each project there is no accurate information for pricing and setting up appropriate contingencies in the sales phase. For example, cost of purchasing unique services is difficult to estimate.
2. Prices of resources can vary during a long project, which causes problems for estimating costs.
3. In complex projects, there are more project management and integration engineering costs, which are more difficult to calculate than product costs.
4. High uncertainty leads to large contingencies. Multiple contingencies are related to the different WBSs, so perceiving the total value of the contingencies is challenging.

2.5.6. Human Resource Management Challenges

Project human resource management includes the processes that organize, manage, and lead the project team (PMI, 2017). The human resource need of project management is the biggest challenge of project management practice in the 21st century (Mir & Pinnington, 2014). It is the human resource that plan and execute the project, and ensuring that project teams are competent enough to successfully manage the project to exceed stakeholders' expectation is crucial. Every project has different human resources needs with different skills. Most time it is difficult to get the right employees on the project and this staffing problem may therefore have several implications on the success of the project (Abdulrahman, 2016). The successful achievement of organizational objectives relies on delivering various projects within a scheduled time frame, budget estimate and expected quality. However, it is argued that the traditional drivers of successful project management are no longer adequate to guarantee project success and eventually reach organizational goals and objectives (Shenhar & Dvir, 2007). Instead, the implementation of effective project management and human related strategies is the most appropriate approach for the current business environment where most projects are associated complexity and uncertainty (ALNASSERI et.al, 2013). According to Alsseri et.al, 2013, project managers who follow traditional ways of managing and executing projects often give little attention or even disregard the allocation of human related factors within their management agendas.

2.5.7. Risks Management Challenges

According to PMI (2017), project risk management includes the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project. When mentioning AACRA's projects majority of activities are related to road

construction projects. According to Baghdadi and Mohammed (2015) these challenges can be directly contributing to the increased risks of projects and risks are typical reasons for delays or cost overruns that can occur in a project. Picking up on that important point, risk management should be seen as a management tool designed to improve planning, budgeting, performance management and other core business processes. Risk management also helps management to make more informed business decisions about achieving strategic or operational goals and sometimes may even highlight the need to change the strategy altogether due to an unacceptable level of risk.

2.5.8. Communication Management Challenges

Project communications management includes the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and the ultimate disposition of project information (PMI, 2017). Communication is the most important element to project success and yet it remains a challenge throughout the engagement (Prasad & Reddi, 2017). According to Trocki and Bukłaha, (2016) the Primary objective of Communication Management is to provide the relevant stakeholders with the right information at the right time using properly selected measures. In other words, the transfer of information with details matched to customer's expectations while minimizing the communication barriers that could distort the communication process and hinder mutual understanding of a message. Investigating the failures in the projects shows that the lack of professional communication support at any stage of the project life cycle can lead to problems in the project and to project failure (eds. Trocki and Bukłaha, 2016. In the case of initiating a project most often points to the problems related to the lack of identification of stakeholders, communication needs and their sources, and inadequate communication with key stakeholders. During the planning phase of the project difficulties arise due to the lack of planned communication in the project, selective communication of plan to stakeholders and lack of commitment of key stakeholders. In the implementation phase there is often a lack of information about the status of the project or changes, insufficient exchange of information and number of meetings with stakeholders, the lack of a detailed review of the project, inadequate stakeholder management, the lack of communication when making decisions, And during completion no formal communication of the project, no process of communicating project experiences and best practices. However, elements of communication and communication management can be found in a much larger number of indicated success factors in the project, including: support from management, or

customer/user engagement requires proper communication. Proper planning, or effective monitoring and control also include communication planning process. Leadership requiring effective communication skills and effective teamwork requires the ability to communicate.

2.5.9. Stakeholder Management Challenges

Project stakeholder management includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution (PMI, 2017). The variance of stakeholders involved, all of whom are very involved during the project lifecycle: As a result, the achievement of a consensus among these stakeholders is quite challenging. Survey from literature revealed that lack of stakeholder engagement, lack of user involvement and lack of executive support are in the forefront causes of project failure. One of the most critical factors for the successful completion of projects is top management support Xaba (2011). The level of support provided by the functional manager is usually determined by the level of support from top management (Xaba, 2011). Top management is perceived to have a stake in the successful completion of the project. As a result of their perceived stake in the task, they have certain expectations, and consequently, engage in certain types of behavior, sometimes constructive and sometimes destructive (Bourne & Walker, 2006). Pinto, Slevin (1987), identified top or divisional management support for the project that has been conveyed to all concerned parties as important critical success factor.

2.5.10. Procurement Management Challenges

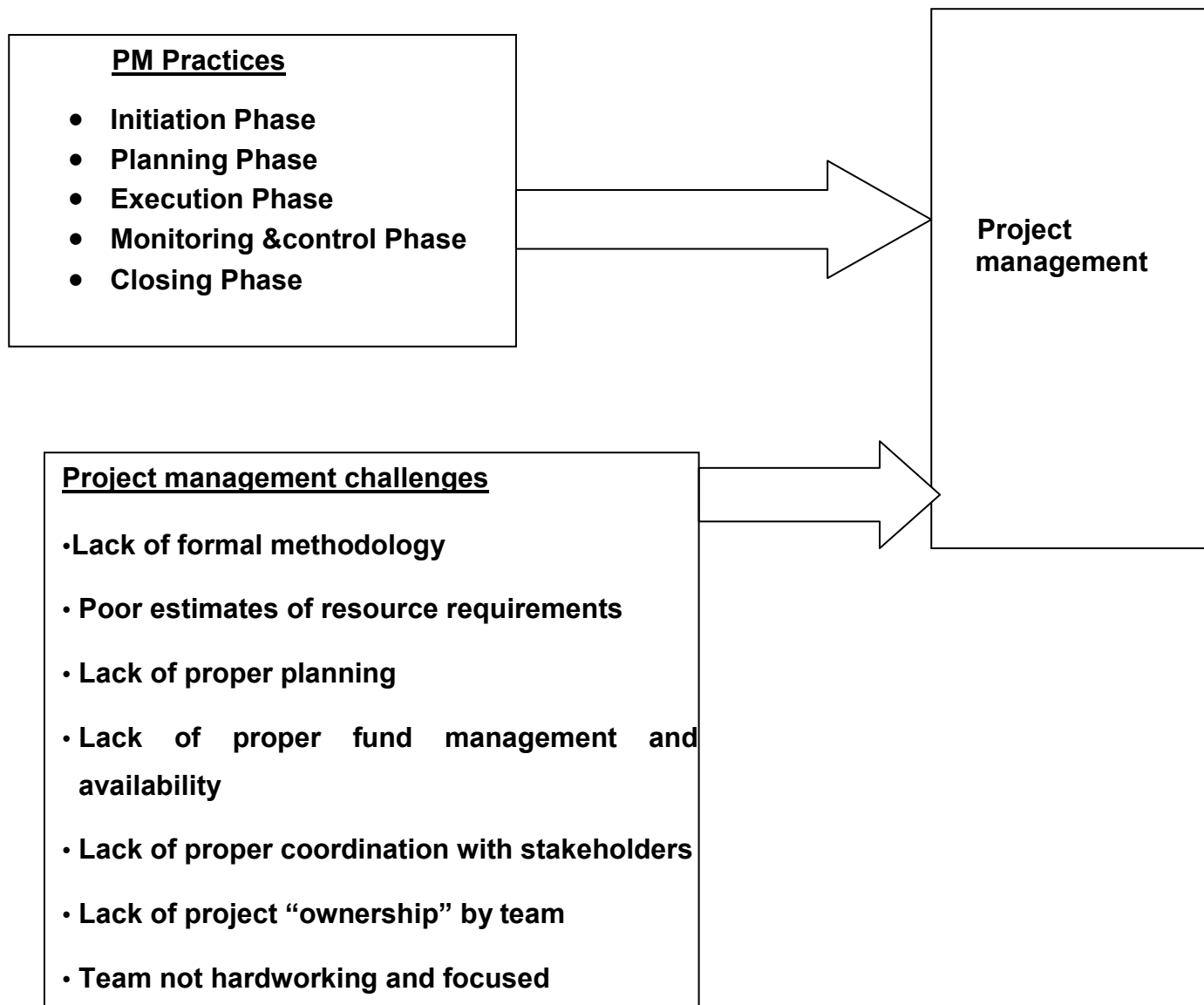
Project procurement management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team (PMI, 2017). According to Manu et.al (2018) where procurement capacity deficiencies are paramount in several countries in the sub-Saharan African region, challenges related to transparency, integrity and accountability are amongst the top most challenges adversely affecting the effectiveness of public infrastructure procurement. Procurement related project management factors are also evident in delivery of infrastructure projects. Babatunde et.al (2012) identified critical success factors related to procurement management through survey questionnaires; these are competitive procurement process, thorough and realistic assessment of the cost and benefits, and transparency in the procurement process. Truong et.al, (2008) in their study of

benchmarking approach indicated that large contractors applied an effective procurement system including well-prepared material procurement planning, clear-documented solicitation, transparent choosing among potential suppliers, and well managing the relationship with suppliers. Truong et.al, (2008) also holds that more specific and more detailed contract documents as a key element in avoiding disputes in the future. According to Manu et al. (2018) where procurement capacity deficiencies are paramount in several countries in the sub-Saharan African region, challenges related to transparency, integrity and accountability are amongst the topmost challenges adversely affecting the effectiveness of public infrastructure procurement.

2.6 Summary of Conceptual framework

Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing. Various literatures reviewed revealed that variables considered as a success factor for project management practice are similar to the variables identified as reason for failure when stated negatively. Though projects are not declared as failed these variables can be considered as a source of challenge in project management. Hence proactively tackling these challenges helps to avert any possible situations that can become barriers to effective implementation of project management practice.

Figure 2.3. Conceptual framework of the study



Source: Developed by the author based literature review

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter aims to provide an overview of the methodological approaches and research design selected to assess the different challenges and project management practices in road projects followed by Addis Ababa City road Authority.

3.2. Research Design and Approach

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions (Cooper & Schindler, 2014). Descriptive research design was adopted to undertake this study. Descriptive research design is typically concerned with describing the characteristics of a phenomenon. It can be used for the purpose of estimates of the proportions of a population that have these characteristics (Cooper & Schindler, 2014). As a result the research believes that this design enables to identify and define the opinion and attitude held by participants of the study on challenges and practices of project management at AACRA in the case of Betel - Augusta Road project - The study was conducted as per the below step

1. Reviewing the nature and characteristics of road project management practices and identifying the challenges on road project management.
2. Classifying the identified challenges into appropriate categories based on knowledge areas in project management to help conceptualize.
3. Validating the challenges and practices identified from Literature review through structured questionnaire and semi-structured interviews to know the perceived opinion of project management team in AACRA.
4. Collecting and analyzing structured questioners and semi-structured interviews and drawing research conclusions and recommendations useful for successful undertaking of road projects.

Research approach was selected based on research purpose, the nature of research, the problem area, and research question and there are three basic research approach including quantitative qualitative and mixed approach (Creswell, 2003).

Qualitative research is an approach for exploring and understanding the meaning of individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher makes interpretations of the meaning of the data. The final written report has a flexible structure (Creswell, 2003).

Quantitative research is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures (Creswell, 2003). Mixed methods research is an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone (Creswell, 2003).

A **mixed approach** is useful to capture the best of both quantitative and qualitative approaches. Thus, in order to achieve the objective of this study and answer the research questions, mixed research approach was used. The concept of mixing different methods probably originated in 1959, when Campbell and Fiske used multiple methods to study validity of psychological traits. They encouraged others to employ their "multi-method" to examine multiple approaches to data collection in a study. This prompted others to use mixed method recognizing that all methods have limitations; researchers felt that biases inherent in any single method could neutralize or cancel the biases of other methods. Additional reason for using mixed approach types of data is the methods can serve a larger, transformative purpose to change and advocate for marginalized groups, such as women, ethnic or racial minorities, members of gay and lesbian communities, people with disabilities (Creswell, 2003).

3.3. Sources and Types of Data

In order to draw the true picture the challenges and practices of road construction project in the study has employed two sources of data: primary and secondary source of data. Primary source data gathered through questionnaires and interview. The secondary data used in this research are gathered through a literature review regarding the practices and challenges in road construction project. Literature reviews was carried out to enhance the understanding of theory regarding the research problem. Secondary data was collected from books, articles, internet, journals, documents and other's research papers.

3.4. Instruments for the Data Collection

The study employs a survey method as it enables the researcher to collect the opinion on the practices and challenges of project management at AACRA the case of road project construction. According to Creswell (2008), a survey research provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. In addition, in order to identify the factors in detail, among the projects the road project practices and challenges have been selected and the projects have been reviewed in detail as data collection for the study. As indicated on Slake (1995) cited in Creswell (2008), case studies are strategies of inquiry in which the researcher explores in depth a program, event, activity, and process. Accordingly researchers try to collect detailed information using a project document review and interview procedures with the counter team from clients as a periodical review undertaken by this team. The survey includes different personal information about the respondents (personal experience, his/her stay as worker in the road project, responsibility, and others.

3.5. Population of the Study

Target population were specified group of people or object for which questions can be asked or observed made to develop required data structures and information. Therefore, for this study, the target population of the study were employees of AACRA particularly involved in planning, implementation and control of Betel-Augusta road projects undertaken by AACRA. The projects is ongoing road project now a days the progress is 33% and the research did considered other project challenges and practices as an information to support this study from the project.

Purposive sampling technique was used to select study participants in order to get the right respondents who are capable of giving the relevant and accurate information based on the practical experience they have regarding the issues under study. Purposive or judgmental sampling enables to use judgment to select cases that will best enable to answer the research question(s) and to meet objectives.

3.6. Sample Techniques and Sample size

3.6.1. Sampling Techniques

There are different road projects undergoing live in Addis Ababa and the data obtained from the authority reveal that about most of the total road project are running out of their schedule. A target population of the sampling contains different team (Human resource team, procurement, Finance team, and other knowledge area of project management) with varying information on the research topic with their nature of job, it would be better to select groups who practical experience on the subject matter. Therefore, in order to minimize representation that might occur, the researcher obliged to use purposive sampling technique, which may best represent roads in the region. In this regard, some literatures also reinforce the reason and advantages of purposive sampling, in such a way that “purposive sampling is a useful sampling method which allows a researcher to get information from a sample of the population that one thinks knows most about the subject matter Walliman (2006). Saunders, et.al (2009) also state if the sample to be selected is very small and a focus group is a target, a purposive sampling technique enables to select the one who knows most about the subject matter. According to Saunders, Purposive or judgmental sampling enables to use your judgment to select cases that will best enable you to answer your research question(s) and to meet your objectives.

3.6.2. Sample Size

Sampling is an illustration of inductive rationale by which conclusion is derived on the basics of a small number of examples. Inductive thinking based on sampling is more like part of our daily activity. Sample is a sub-group of a population, which is the totality of some category of component, human or otherwise. Sampling is used as a basis for statistical estimation from items, about the features of that population (Saunders, et al 2009). A total of 30 respondents were deliberated as adequate and sensible for this study. The sample was restricted to Betel-Augusta road construction project that undertaken by AACRA and the respondents were Addis Ababa city road authority project managers, contractors, consultants, subcontractors,

engineers, who involve in road projects construction system and some respondents from and excluding a supportive staff for all the target population. However effective selection of the target respondents with high competence and experience proved to shield this gap. Since the size of target population under study were small and manageable this research decided to involve all thirty (30) employees (experts, middle and higher level managers) on the study. Interview session was also held with five (5) management level members in order to get further information regarding the challenges and practices of project management in road projects undertaken by ACCRA in addition to the information gathered through questionnaire.

3.7 Method of Data Analysis

Data collected from the survey was analyzed using descriptive statistical techniques. For this purpose the computer software Statistical Package for Social Science (SPSS V.20) was used as the best options available. The research has tried to evaluate the significance of each barrier to the implementation of road project management practices. Descriptive statistics including mean, frequencies, standard deviation and percentages were used for quantitative data analysis. Tables, charts and figures were used to present the analyzed data.

3.8. Validity and Reliability

The validity and reliability of the research were taken into consideration. Questionnaire and interview questions were developed based on the conceptual framework of the study designed to address the intended assessment questions and objectives. Further a reliability test of Cronbach's Alpha was made for the Likert scale type questions on SPSS 20. Cronbach's alpha is a measure used to assess the reliability, or internal consistency, of a set of scale or test items. According to Sekeran, 2003 reliability measures stability and consistency across time and the various items in the instrument. It indicates the extent to which the instrument is free from error or bias. The closer the Cronbach's alpha to 1 is the higher the reliability of the instrument. Thus a scale is said to have a good reliability. As shown in the table below the Cronbach's alpha for each item is presented. Cronbach's alpha value is 0.935, 0.979, 0.977, 0.981, and 0.966 and for the project Initiation, project planning, project Execution, project Monitoring & Evaluation and project controlling and the overall major challenges in each project management phases respectively.

Table 3.1. Reliability statistics

Items	Cronbach's Alpha	Number of items	Overall Cronbach's Alpha
Initiation(PIPP)	0.935	8	0.9676
Planning (PPPP)	0.979	10	
Execution PEPP)	0.977	7	
Monitoring & Control (PMCPP)	0.981	8	
Closing(PCPP)	0.966	5	

Source: Own survey (2020).

3.9.Ethical Considerations

The researcher has followed ethically acceptable processes throughout the research process. The participants were informed about the purpose of the study before the information was collected from them thus conformed to the principle of voluntary and informed consent. In this regard, the names of the respondents were disclosed and Information did not available to anyone who did not directly involved in the study. The researcher further considered that all the sources that used in this research report had properly recognized and acknowledged as in-text citation and reference list

CHAPTER FOUR

DISCUSSION AND RESULTS

In this chapter, the collected data is presented, analyzed and interpreted. The data was collected through questionnaire, interview and document analysis regarding the practices and challenges of projects management at Addis Ababa City Road Authority: the case of Betel - Augusta road construction project. A total of 30 questionnaires were distributed to all the project team members and managers and 30 were returned which accounts 100% percent response rate.

4.1. Respondents' Demographic Characteristics

The study sought information on aspects of respondents' background, particularly, gender distribution, age distribution, educational level and experience of the population filling the questionnaire. Demographic characteristic is not part of part of assessment, but simply included to show respondent's information participated in the research. According to result drawn (table 4.1 below), gender distribution shows 16.67% - female and 83.33% -male, age distribution (53.3 % - age 21-35, 33.3% - age 36 to 50 and 13.3% - age above 50), educational level (56.6 % BA/BSc holders, and remaining 43.4 % MA/MSc holders), and regarding work experience, the result shows more percentage of respondents have work experience (33.33% 1 -5, 30% 6 - 10 , 13.33% ,11- 15 and 23.33% above 15). Regarding work experience, the result shows that project workers are well experienced. Respondents work Position also shows 16.67% of the respondents were on specialist, 30.0% of the respondents were on Project manager position, 36.67% of the respondents are Supervisor and the remaining 16.67% are on administrator position. And finally in respect to year of work experience 23.3% of the respondents participated from 1–5 road construction projects, 53.3 % of the respondents participated between 6 –10 and 13.3% of the respondents are also participated in 11–20 and the rest 13.33% respondents participated more than 20 RCP's. The data indicated that AACRA has practically experienced managers, experts, engineers and other professionals in city road construction projects. The finding reveals that AACRA has well educated employees.

Table 4. 1: Respondents' Demographic Characteristics

Description		Frequency	Percent
Gender	Female	5	16.67
	Male	25	83.33
	Total	30	100
Age distribution	21 - 35	16	53.3
	36 - 50	10	33.33
	Above 50	4	13.3
	Total	30	100
Educational Level	MA/MSc	13	43.4
	BA/BSc	17	56.6
	Total	30	100
Work Experience	1 -5 years	10	33.33
	6 -10 years	9	30
	11 -15 years	4	13.33
	More than 15 years	7	23.33
	Total	30	100
Position	Specialist	5	16.67
	Project manager	9	30.0
	Supervisor	11	36.667
	Administrator	5	16.67
	Total	30	100
No. of project	0-5	7	23.3
	6-10	16	53.3
	11-20	4	13.33
	More than 20	3	10.00
	Total	30	100

Source: Own survey (2020).

4.2. The practice of Project Management in Road Projects

The participants of the research were asked to give their opinion on the project management practices and, challenges encountered in road construction project undertaken by AACRA. The respondents were given options on a rate of 5-point Likert's scale with 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= strongly Agree.

The collected study data was analyzed using descriptive statics such as Frequency, mean and Percentage and standard deviation as shown below in the table.

Where: Frequency (f) = Number of respondents who agreed on the corresponding rating.

Mean = Average rating given by respondents.

Percentage (%) = Percentage of respondents to be agreed from total respondents

Standard deviation= tell how measurements for a group are spread out from the mean

Table 4.2.1. The practice of project initiation in road projects filled by respondents

	Project initiation phase practices (PI)	Frequency		Percent	Mean	S.D
	The objective of the project was Captured in one precise and complete sentence.	SD	11	36.7	2.0333	1.15917
		DA	13	43.3		
		N	2	6.7		
		A	2	6.7		
		'SA	2	6.7		
		Total	30	100.0		
	High-level project schedule milestones were properly identified.	SD	10	33.3	2.2000	1.27035
		D	12	40.0		
		N	3	10.0		
		A	2	6.7		
		SA	3	10.0		
		Total	30	100.0		
	Scope of work was identified at high level to avoid misunderstanding between the	SD	8	26.7	2.8667	1.38298
		D	4	13.3		
		N	4	13.3		
		A	12	40.0		

Valid	stakeholders.	SA	2	6.7		
		Total	30	100.0		
	High-level project resources like budget and people were identified	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
		N	4	13.3		
		A	12	40.0		
		SA	8	26.7		
		Total	30	100.0		
	First draft of the stakeholder management tool was developed	SD	12	40.0	2.1000	1.21343
		D	9	30.0		
		N	5	16.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
	Complete project charter was prepared	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
		N	4	13.3		
		A	12	40.0		
		SA	8	26.7		
		Total	30	100.0		
Project kick-off meeting was conducted at appropriate time	SD	7	23.3	2.1667	1.08543	
	D	17	56.7			
	N	2	6.7			
	A	2	6.7			
	SA	2	6.7			
	Total	30	100.0			
High-level planning was prepared that serve as a road map for detail plan at the	SD	2	6.7			
	D	4	13.3			
	N	4	13.3			

	planning phase	A	12	40.0	3.6667	1.21296
		SA	8	26.7		
		Total	30	100.0		

Source: own survey, 2020

The mean value for the statement ‘the objective of the project was Captured in one precise and complete sentence’ is 2.03 and the standard deviation is 1.15. These are calculated from the number of respondents who disagreed with the statement, which is 43.3 % and agreed with the statement and 6.7% respectively. From the mean value, it is concluded that the project team there is no well practices on the statement ‘the objective of the project was captured in one precise and complete sentence ‘in RCP.

According to the data collected 40 % of the respondents agreed, 6.7 % of the respondents S.A, 26.7% of the respondents S.D, 13.3 the respondents disagree and the remaining is neutral in project initiation phase on the statement ‘Scope of work was identified at high level to avoid misunderstanding between the stakeholders’ of the project. Then mean value and the standard deviation were generated by SPSS, 2.87 and 1.38 respectively. This mean value shows the project team had not a practice on the statement that Scope of work was identified at high level to avoid misunderstanding between the stakeholders ‘of the project.

The mean value for the statement, High-level project resources like budget and people were identified, are 3.67 and the standard deviation 1.21. This was calculated using SPSS; having 40 % of respondents agree, 13.3 % staying neutral and 13.3 % of the respondent disagreed with the given statement. The mean value is greater than Likert’s mean value of 3. Therefore it is concluded that most of the respondents believe there exists in High-level project resources like budget and people were identified.

The mean value for the statement ‘First draft of the stakeholder management tool was developed’ is 2.10 and the standard deviation is 1.21. These are calculated from the number of respondents who strongly disagreed with the statement, which is 40%, D.A with the statement is 30%, agreed with the statement is 6.7%, S.A also on this statement is 6.7 % and the remaining 16.7% is neutral. From the mean value, it is concluded that the project team there is no well practices on the statement ‘First draft of the stakeholder management tool was developed ‘in RCP.

According to the data collected 40 % of the respondents agreed, 26.7% of the respondents S.A, 6.7% of the respondents S.D, 13.3% the respondents agree and the remaining 13.3% is neutral in project initiation phase on the statement ‘Complete project charter was prepared’ in

RCP's that undertaken by AACRA. Then mean value and the standard deviation were generated by SPSS, 3.67 and 1.21 respectively. This mean value shows which is greater than the value of the Likert scale mean which is 3. There for The project team well practice on the statement that complete project charter was prepared' in RCP's undertaken by the organization.

The aggregated mean for the project management practice in initiating phase is 2.796. This value compared with the Likert scale mean value is less than 3. Therefore, the practice of projects in initiation phase comparatively is not involved on RCP that undertaken by AACRA.

Table 4.2.2. The practice of project planning in road projects filled by respondents

	Project Planning phase practices (PP)	Frequency		Percent	Mean	S.D
Valid	Scope statement of the project was prepared in detail.	SD	3	10.0	3.4667	1.22428
		DA	4	13.3		
		N	4	13.3		
		A	14	46.7		
		SA	5	16.7		
		Total	30	100.0		
	Project teams were recruited and assembled in a way that enables them to perform all activities as required in cohesive manner.	SD	7	23.3	2.1667	1.08543
		D	17	56.7		
		N	2	6.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
	Work breakdown structure (WBS) was developed and helps to properly estimate the required material, human and financial resources.	SD	2	6.7	3.6333	1.21721
		D	4	13.3		
		N	5	16.7		
		A	11	36.7		
		SA	8	26.7		
		Total	30	100.0		
	SD	2	6.7			

Network diagram that shows activity dependency and sequence was developed	D	4	13.3	3.6333	1.21721
	N	5	16.7		
	A	11	36.7		
	SA	8	26.7		
	Total	30	100.0		
Proper activity cost and time estimation was made	SD	7	23.3	2.2000	1.09545
	D	16	53.3		
	N	3	10.0		
	A	2	6.7		
	SA	2	6.7		
	Total	30	100.0		
Overall budget and schedule of the project was determined	SD	8	26.7	2.8667	1.3829
	D	4	13.3		
	N	4	13.3		
	A	12	40.0		
	SA	2	6.7		
	Total	30	100.0		
Procurement plans of the project were established	SD	3	10.0	3.4667	1.22428
	D	4	13.3		
	N	4	13.3		
	A	14	46.7		
	SA	5	16.7		
	Total	30	100.0		
Possible risks were identified and quantified	SD	7	23.3	3.6000	1.22051
	D	17	56.7		
	N	2	6.7		
	A	2	6.7		
	SA	2	6.7		
	Total	30	100.0		
change control plan, communications plan, management plans were developed	SD	9	30.0		
	D	15	50.0		
	N	2	6.7		

		A	2	6.7	2.1000	1.12495	
		SA	2	6.7			
		Total	30	100.0			
	Overall project plan was approved by concerned body		SD	7	23.3	3.6333	1.21721
			D	17	56.7		
			N	2	6.7		
			A	2	6.7		
			SA	2	6.7		
			Total	30	100.0		
	Total N = 30		Aggregate Mean			3.0765	1.2206

Source: own survey, 2020

The mean value for the statement in which the organization Scope statement of the project was prepared in detail of the project is calculated 3.4667 and the standard deviation is 1.22. For this statement 46.7 % agreed, 16.7% strongly agreed, 13.3% selected neutral and 13.3% disagreed the remaining 10% is strongly disagreed. This indicates most of the respondents agreed that the organization Scope statement of the project was prepared in detail on the project. Therefore, it is concluded that the organization has a practice of preparing scope statement in detail during project planning phase.

For the statement ‘the project Work breakdown structure (WBS) was developed and helps to properly estimate the required material, human and financial resources’ 36.7% of respondents agreed, 26.7% of respondents choose strongly agree, 16.7 % neutral while 13.3% disagreed and 6.7% strongly disagree with the statement. The mean value of this is 3.63 and the standard deviation value is 1.21. The result shows that most percentages of the respondents is agreed .This entails that, the practice of developing the project Work breakdown structure (WBS) is involved in project planning phase of RCP’s that undertaken by AACRA.

According to the data collected 6.7 % of the respondents agreed, 6.7 % of the respondents S.A, 26.7% of the respondents S.D, 53.3 %the respondents disagreed and the remaining 10% is neutral in project initiation phase on the statement ‘ Proper activity cost and time estimation was made ’ of the project. Then mean value and the standard deviation were generated by SPSS, 2.20 and 1.095 respectively. This mean value shows the project team has not a practice on ‘Proper activity cost and time estimation during planning the project.

The mean value for the statement ‘Overall budget and schedule of the project was determined’ is 2.87 and the standard deviation is 1.38. These are calculated from the number of respondents who strongly disagreed with the statement, which is 26.7%, D.A with the statement is 13.3%, agreed with the statement is 40%, S.A also on this statement is 6.7 % and the remaining 13.3% is neutral. From the mean value, it is concluded that the project during the planning stage there is no well practices in ‘determination of Overall budget and schedule in RCP’s.

For the statement ‘Possible risks were identified and quantified’ 6.7% of respondents agreed, 6.7 % of respondents choose strongly agree, 6.76.7 % neutral where as 56.7 % disagreed and 23.3 % strongly disagree with the statement. The mean value of this is 3.60 and the standard deviation value is 1.22. The result shows that most percentages of the respondents is agreed .This entails that, the practice of identified and quantified Possible risks involved in project planning phase of RCP’s that undertaken by AACRA.

On the other statement of change control plan, communications plan, management plans were developed’ 6.7% of respondents agreed, 6.7 % of respondents choose strongly agree, 6.76 % neutral where as 50 % disagreed and 30 % strongly disagree with the statement. The mean value of this is 2.10 and the standard deviation value is 1.13. The result shows that most percentages of the respondents is disagreed .This entails that, the practice of identified and quantified possible risks did not involve during project planning of RCP’s that undertaken by AACRA.

The aggregated mean for the project management practice during the project planning were 3.0765. This value compared with the Likert scale mean value is slightly greater than 3. Therefore, the practice of projects during planning the RCP that undertaken by AACRA comparatively involved.

Table 4.2.3. The practice of project Execution in road projects filled by respondents

	Project Execution phase practices (PE)	Frequency		Percent	Mean	S.D
	Team meetings are effective and held with	SD	7	23.3		
		DA	17	56.7		

Valid	a stated agenda	N	2	6.7	2.1667	1.0854
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
	The project schedule is updated regularly, incorporating unplanned work as needed	SD	7	23.3	2.1667	1.08543
		D	17	56.7		
		N	2	6.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
	Project execution metrics have been established properly	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
		N	4	13.3		
		A	12	40.0		
		SA	8	26.7		
		Total	30	100.0		
	Project risks are reviewed regularly with new risks identified and updated as needed	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
		N	5	16.7		
		A	11	36.7		
		SA	8	26.7		
		Total	30	100.0		
	Project status updates are provided to key stakeholders regularly	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
N		4	13.3			
A		12	40.0			
SA		8	26.7			
Total		30	100.0			
Problems impeding the team's ability to execute the project plan are efficiently escalated	SD	2	6.7	3.6667	1.21296	
	D	4	13.3			
	N	4	13.3			
	A	12	40.0			

		SA	8	26.7		
		Total	30	100.0		
Quality assurance and scope verifications were properly made		SD	7	23.3	2.1667	1.08543
		D	17	56.7		
		N	2	6.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
Total N = 30		Aggregate Mean			3.0241	1.1583

Source: own survey, 2020

The mean value for the statement ‘Team meetings are effective and held with a stated agenda’ is 2.16 and the standard deviation is 1.085. These are calculated from the number of respondents who disagreed with the statement, which is 56.7 % and agreed with the statement and 6.7% respectively. From the mean value, it is concluded that the project team there is no well-practiced on the statement ‘Team meetings are effective and held with a stated agenda’ in RCP.

According to the data collected 40 % of the respondents agreed, 26.7 % of the respondents S.A, 6.7 % of the respondents S.D, 13.3 the respondents disagree and the remaining is neutral in project Execution phase on the statement ‘Project execution metrics have been established properly’ on project. Then mean value and the standard deviation were generated by SPSS, 3.67 and 1.21 respectively. This mean value shows the project team involved a practice on the statement that Project execution metrics have been established properly in the phase of project Execution.

The mean value for the statement, Quality assurance and scope verifications were properly made’ are 2.17 and the standard deviation 1.08. This was calculated using SPSS; having 6.7 % of respondents agree, 6.7% staying neutral and 56.7% of the respondent disagreed with the given statement, the mean value is less than Likert’s mean value of 3. Therefore it is concluded that most of the respondents believe did not involve in, properly made Quality assurance and scope verifications during project execution period of RCP’s.

Finally the aggregated mean for the project management practice in the period of project executing 3.0241. This value compared with the Likert scale mean value is greater than 3. Therefore, the practice of projects during executing the RCP's that undertaken by AACRA were comparatively involved.

Table.4.2.4.The practice of project Monitoring and Control in road projects filled by respondents

	Project Monitoring and Control phase practices(PMC)	Frequency		Percent	Mean	S.D
Valid	Performance report was made for every activity as per the schedule	SD	7	23.3	2.1667	1.08543
		DA	17	56.7		
		N	2	6.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
	Overall change control was made to provide appropriate response for any change	SD	7	23.3	2.1667	1.08543
		D	17	56.7		
		N	2	6.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
	Project scope control was made against the planned one for every scope statement	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
		N	4	13.3		
		A	12	40.0		
		SA	8	26.7		
		Total	30	100.0		
	Project quality control was made against	SD	7	23.3		
		D	17	56.7		

the plan as per the client request in the plan	N	2	6.7	2.1667	1.08543
	A	2	6.7		
	SA	2	6.7		
	Total	30	100.0		
Risk response control was made to confirm whether the risk response actions are going as planned	SD	2	6.7	3.6667	1.21296
	D	4	13.3		
	N	4	13.3		
	A	12	40.0		
	SA	8	26.7		
	Total	30	100.0		
Schedule and cost controls were made against the planned one to check if cost over runs and schedule delays are properly managed	SD	2	6.7	3.6667	1.21296
	D	4	13.3		
	N	4	13.3		
	A	12	40.0		
	SA	8	26.7		
	Total	30	100.0		
There was a Management by exception to the project plan	SD	2	6.7	3.6667	1.21296
	D	4	13.3		
	N	4	13.3		
	A	12	40.0		
	SA	8	26.7		
	Total	30	100.0		
Total N = 30, Aggregate Mean=				3.0239	1.1583

Source: own survey, 2020

The mean value for the statement the project team Performance report was made for every activity as per the schedule for a given projects is 2.17 and the standard deviation is 1.08. These are calculated from the number of respondents who strongly agreed with the statement, which is 6.7 % and disagreed with the statement and 56.7 % respectively. From the mean value, it is concluded that the performance reports for every activity is not involved in the project during Monitoring and Control of the given project.

According to the data in Table 4.3.3, 40.0 % of the respondents agreed in the statement of Project scope control was made against the planned one for every scope statement of the

project. But the remaining 13.3 % disagreed and 6.7 % strongly disagree with that. Then mean value and the standard deviation were generated by SPSS, 3.67 and 1.21 respectively. This mean value shows there is a practice of involving in the statement ‘Project scope control was made against the planned one for every scope statement’ during monitoring and control of the project. Most of the above statement under the practice of project monitoring and control of the project were exists in RCP’s that undertaken by AACRA. Therefore the aggregated mean value for the project management practice in the case of project monitoring and control is about 3.0239. This value compared with the Likert scale mean value is greater than 3. Therefore, the practice of projects during monitoring and control RCP’s that undertaken by AACRA were involved.

Table 4.2.5. The practice of project control in road projects filled by respondents

	Closing phase practices(PC)	Frequency		Percent	Mean	S.D
Valid	Procurement audits and contract(s) close out was formally undertaken for all procurements made	SD	2	6.7	3.6667	1.21296
		DA	3	13.3		
		N	5	13.3		
		A	12	40.0		
		`SA	8	26.7		
		Total	30	100.0		
	Product verification and acceptance test was made for every product delivered	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
		N	4	13.3		
		A	12	40.0		
		SA	8	26.7		
		Total	30	100.0		
	Lessons learned from the project were identified and properly documented for future use	SD	2	6.7	3.6667	1.21296
		D	4	13.3		
		N	4	13.3		
		A	12	40.0		
		SA	8	26.7		
		Total	30	100.0		

	All project records were updated as per the changes made on any record	SD	7	23.3	2.1667	1.08543
		D	17	56.7		
		N	2	6.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
	Project teams were officially released to their operational work at the appropriate time	SD	7	23.3	2.1667	1.08543
		D	17	56.7		
		N	2	6.7		
		A	2	6.7		
		SA	2	6.7		
		Total	30	100.0		
Total N = 30		Aggregate Mean		3.0667	1.1619	

Source: own survey, 2020

The mean value for the statement Procurement audits and contract(s) close out was formally undertaken for all procurements made on projects is 3.67 and the standard deviation is 1.23. These are calculated from the number of respondents who agreed with the statement, which is 40 % and disagreed with the statement and 13.3% respectively. From the mean value, it is concluded that the project team well practices Procurement audits and contract(s) close out was formally undertaken for all procurements made on projects.

According to the data in Table 4.3.5, 56.7% of the respondents agreed the project members actively take part in closing phase to have all project records were updated as per the changes made on any record of the project. But the remaining 6.7% disagreed with that. Then mean value and the standard deviation were generated by SPSS, 2.17 and 1.08 respectively. This mean value shows there is no a practice of involving project members in the statement that project records were updated as per the changes made on any record of the project.

The mean value for the statement, Lessons learned from the project were identified and properly documented for future use, are 3.67 and the standard deviation 1.21. This was calculated using SPSS; having 40 % of respondents agree, 13.3 % staying neutral and 13.3 % of the respondent disagreed with the given statement. The mean value is greater than Likert's

mean value of 3. Therefore it is concluded that most of the respondents believe there exists in Lessons learned from the project were identified and properly documented for future use.

The aggregated mean for the project management practice in closing phase is **3.067**. This value compared with the Likert scale mean value is slightly greater than 3. Therefore, the practice of projects in closing phase is exists on RCP that undertaken by AACRA.

4.3. The challenges of project management in road projects filled by respondents.

Table 4.3.1: Project Integration Management Challenges

	N	Mean	Std. Deviation
Failure to assign and identify Project Manager early in the project	30	2.1667	1.08543
Lack of efficient change management	30	2.2000	1.27035
Lack of Clear vision and goals of the project	30	3.5333	1.04166
Not breaking down development into phases or clear millstones	30	2.2000	1.21485
Not prioritizing operational activities or objectives.	30	2.1000	1.21343
gaps in defining key performance indicators, the retrieval, collection, preparation and interpretation of data for monitoring and evaluation	30	2.0000	1.01710
Limited resources and budgetary allocations for monitoring and evaluation	30	2.3000	.98786
Lack of Process for project knowledge management and capturing lessons learned	30	3.7667	1.19434
<i>Aggregate Mean and St. Deviation</i>		2.53337	1.12812

Source: own survey, 2020

Table 4.3.1: shows that the total mean score of Project Integration Management Challenges is

(2.53337) with a Std. Deviation of (1.12812) which indicates that Integration Management Challenges are considered as moderate but Lack of Clear vision and goals of the project and Lack of Process for project knowledge management and capturing lessons learned in the management of project integration according to the respondent opinion is a challenging factor of the project integration management.

Table 4.3.2: Project Scope Management challenge

	N	Mean	Std. Deviation
Changing requirements late in the project and continuing change requests	30	3.46667	1.224276
Incomplete, wrong or not defined Requirements and specification	30	2.1667	1.08543
Design discrepancies	30	3.6333	1.21721
Project requirements inadequately documented	30	3.6333	1.21721
<i>Aggregate Mean and St. Deviation</i>		3.23249	1.18603

Source: own survey, 2020

Table 4.3.2: shows that the average mean score of Project Scope Management challenge Factors is (3.23249) with a Std. Deviation of (1.18603) which indicates that Project Scope Management challenging factors are considered as significant. As can be seen in the table among the factors in scope management challenges “Design discrepancies and the Project requirements inadequately documented” is rated as a major challenge.

Table 4.3.3: Project Schedule Management challenges

	N	Mean	Std. Deviation

Project schedule delays Too tight project schedule and unrealistic deadlines	30	2.2000	1.09545
Inaccurate time estimations	30	2.1667	1.08543
<i>Aggregate Mean and St. Deviation</i>		2.18335	1.09044

Source: own survey, 2020

Table 4.2.3: shows that the Average mean score of Project Schedule Management challenges is (2.18335) with a Std. Deviation of (1.09044) which indicates that Project Schedule Management challenge factors are considered as significant.

Table 4.3.4: Project Cost Management challenges

	N	Mean	Std. Deviation
Inaccurate cost estimation.	30	3.6000	1.22051
Cash flow difficulties	30	2.1000	1.12495
Lack of Cost Control	30	2.1667	1.08543
Inadequate funding/capital or poor use of funding/capital	30	2.1667	1.08543
<i>Aggregate Mean and St. Deviation</i>		2.50835	1.12908

Source: own survey, 2020

Table 4.3.4: shows that the Average mean score of Project Cost Management challenges is (2.50835) with a Std. Deviation of (1.12908) which indicates that Project Cost Management challenge factors are considered as not significant challenging factor where as “Inaccurate

cost estimation” is considered as significant challenge this indicate project cost control practices are not effective.

Table 4.3.5: Project Quality Management challenges

	N	Mean	Std. Deviation
Use of poor initial testing techniques.	30	2.1667	1.08543
Lack of strict quality control measures	30	3.5667	1.13512
Quality checks not performed at satisfactory level	30	3.6667	1.44636
<i>Aggregate Mean and St. Deviation</i>		3.13347	1.2223

Source: own survey, 2020

Table 4.3.5: shows that the Average mean score of Project Quality Management challenges is (3.13347) with a Std. Deviation of (1.2223) which indicates that Project Quality Management challenge factors are considered as significant challenges but use of poor initial testing techniques are not challenging factor in the management of project quality.

Table 4.3.6: Project Human Resource Management Challenges

	N	Mean	Std. Deviation
Wrong selection of project team	30	3.6000	1.16264
Lack of skilled personnel with adequate capacity	30	3.6667	1.21296
Inadequate project structure	30	2.1000	1.06188
Lacking clear roles and responsibilities among team members.	30	1.9667	1.15917

<i>Aggregate Mean and St. Deviation</i>	2.8335	1.14916
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Source: own survey, 2020

Table 4.3.6: shows that the average mean score of Project Human Resource Management Challenges is (2.8335) with a Std. Deviation of (1.14916) which indicates that Project Human Resource Management challenge factors are considered as moderate but in the statement of ‘Inadequate project structure and Lacking clear roles and responsibilities among team members. Indicated that both are not significant challenges on management of human resources.

Table 4.3.7: Project Stakeholder Management Challenges

	N	Mean	Std. Deviation
Late identification of stakeholders the project	30	3.6667	1.21296
Low commitment of Stakeholders towards planned projects	30	2.3667	.92786
Lack involvement of end users	30	3.5667	1.22287
Not obtaining stakeholder approval	30	3.5000	1.22474
<i>Aggregate Mean and St. Deviation</i>		3.2751	1.07041

Source: own survey, 2020

Table 4.3.7: shows that the Average mean score of Project Stakeholder Management Challenges is (3.2751) with a Std. Deviation of (1.07041) which indicates that Project Stakeholder Management challenge factors are considered as highly significant. Except Low commitment of Stakeholders towards planned projects.

Table 4.3.8: Project Communication Management challenges

	N	Mean	Std. Deviation

Lack of professional communication support	29	3.6207	1.23675
Lack of effective communication between stakeholders	30	3.6667	1.21296
<i>Aggregate Mean and St. Deviation</i>		3.6437	1.2248

Source: own survey, 2020

Table 4.3.8: shows that the Average mean score of Project Communication Management challenges is (3.6437) with a Std. Deviation of (1.2248) which indicates that Project Communication Management challenge factors are considered as moderate with higher consensus.

Table 4.3.9: Project Risk Management Challenge

	N	Mean	Std. Deviation
Poor risk management	30	3.6333	1.24522
Design discrepancies	30	3.7667	1.19434
Unexpected events with no effective response possible	30	2.2333	1.04000
<i>Aggregate Mean and St. Deviation</i>		3.211	1.1598

Source: own survey, 2020

Table. 4.3.9: shows that the Average mean score Project Risk Management Challenge Factors is (3.211) with a Std. Deviation of (1.1598) which indicates that Project Risk Management challenging factors are considered as highly significant with higher consensus but 'Unexpected events with no effective response possible'.is not challenging factor in project risk management.

Table 4.3.10: Project Procurement Management challenges

	N	Mean	Std. Deviation
Lack of well-prepared procurement planning	30	2.1000	1.12495
Lack of competitive procurement process	30	3.6667	1.32179
Lack of transparency and integrity in the procurement process	30	3.6667	1.21296
Lack of well-prepared contracts with much detail and clear-documentation	30	2.0667	1.14269
<i>Aggregate Mean and St. Deviation</i>		2.8750	1.2005

Source: own survey, 2020

Table 4.3.10: shows that the Average mean score of Project Procurement Management challenges is **(2.8750)** with a Std. Deviation of **(1.2005)** which indicates that Project Procurement Management challenge factors are considered as not a significant challenge during implementation of the project. But as can be seen from the table “Lack of well-prepared procurement planning” is not a significant challenge among the factors in procurement management challenges.

4.4. Summary of Findings

Findings of a research is analyzed practices of project management in road construction projects undertaken by AACRA from beginning of a projects up to close out. The average mean for the project management practice in initiation, planning, executing, monitoring & control and closing phase is about 2.796, 3.0765, 3.0241, 3.0239 and 3.0667 respectively. This value indicated that the project management practice during started the project or the initiation phase had a lack of the objective of project Captured in one precise and complete sentence, identified High-level project schedule milestones properly and Project kick-off meeting was conducted at appropriate time. In addition to this the project up to closed out, the

study identified there is a lack of determining the Overall budget and schedule of the project, project schedule is updated regularly, incorporating unplanned work as needed, effective Team meetings and held with a stated agenda, Performance report made for every activity as per the schedule, Quality assurance and scope verifications properly made, control the Overall change to provide appropriate response for any change, Project quality control was made against the plan as per the client request in the plan and Project teams officially released to their operational work at the appropriate time.

According to the data analyzed, out of ten knowledge area of project management stated in the literature as per the participants are Agreed, Disagreed and Neutral, the challenging factors that influenced in road construction project (RCP's) considered as the most significant areas are scope management challenge, quality management challenge, stakeholder management challenge, communication management challenge and risk management challenges in average mean value of 3.23249, 3.2751, 3.6437 and 3.211 respectively.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This chapter deals with concluding the overall discussions made in the previous chapters mainly on project management practices of AACRA in each project phases, and project management challenges in ten knowledge area, In addition to this the research provided appropriate recommendations based on the findings.

5.1. Conclusion

In line with the objective of the study the data collected was analyzed and interpreted. Hence the study aimed to assess practices and the challenges encountered through project management on AACRA's road construction projects. In which both primary and secondary data were collected in the research. Accordingly, the data interpretation and summary of the study the researcher has concluded.

Therefor the results of the study according to respondent on the practices of project management in the case of AACRA's project in Betel-Augusta road construction projects in initiation phase the project had a luck of the objective of project Captured in one precise and complete sentence, identified High-level project schedule milestones properly and Project kick-off meeting was conducted at appropriate time and in the remaining phase such as; planning, executing, monitoring and control. According to the findings comparatively a good practices of road project management is existed. On the other hand factors that challenges the road construction project in this study out of ten knowledge area of project management is significantly identified five areas those are; scope management challenge, quality management challenge, stakeholder's management challenge, communication management challenge and risk management challenges. From the identified factors the most significant or major challenging factors are; Changing requirements late in the project and continuing change requests, Design discrepancies, Project requirements inadequately documented, Lack of strict quality control measures, Quality checks not performed at satisfactory level, Late identification of stakeholders the project, Lack involvement of end users, Not obtaining stakeholder approval, Lack of professional communication support, Lack of effective communication between stakeholders, Poor risk management and Design discrepancies and Lack of Project Management Skills and training in project management in conclusion the

factors that influenced mainly the project quality, cost, and schedule. Hence the organization should give high priority and treat these factors to finish the project successfully.

5.2. Recommendation

On the basis of the conclusion drawn, constructive recommendations forwarded.

- The findings of this research indicate that practice of project scope management, especially project scope control and project requirements collection were less practiced in AACRA for RCP's projects. As identified in PMI (2013: P-106) collect requirements and control scope are among process that has linkage with preceding process and following processes. To improve practice of scope control and requirements collection involves consideration of other related processes; therefore the project team and managers of AACRA should consider project scope management processes and application of corresponding tools and techniques, to increase practice project scope management which in turn has contribution in delivering successful and healthy road projects.
- ACCRA requires attention in preparing effective project management plan, full collection of each requirements, detailed description of project and product, and experience in formal acceptance of projects deliverables as well as project and product scope monitoring should practice properly.
- It is very important to take adequate quality control measures for the stages and quality control at preparation period. This is the key point for project quality control. Therefore the project manager and the organization project team should Review road project management plans, Review the qualification of subcontractor, check the qualification of material and building component suppliers and Strictly control the application and check procedure of material, equipment, semi products and products.
- All relevant stakeholders should identified from project inception so that the maximum possible benefit can be achieved from these stakeholders and work with them to accomplish project goals even if their interests are different.
- It needs to be ensured whether all stakeholders have better understanding about projects general goal and objective to remove conflicts and misunderstanding among all stakeholders.

- Communication is the most important element to project success and yet it remains a challenge throughout the engagement so the project manager actively manage the Communication to provide the relevant stakeholders with the right information at the right time using properly selected measures.
- AACRA should be seen risk management as a management tool designed to improve planning, budgeting, performance management and other project processes.
- Risk management also helps management to make more informed business decisions about achieving strategic or operational goals and sometimes may even highlight the need to change the strategy altogether due to an unacceptable level of risk. Therefore the project team and managers in every level activity of the project should managing risks.

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APPENDIX

Appendix I

SECTION I: Survey Questionnaire

ST. MARY’S UNIVERSITY SCHOOL OF GRADUATE STUDIES

Masters of Project Management

Dear respondent: My name is Eyob Berhanu, pursuing a Master of Arts Degree in project Management at **ST. MARY’S** University. The research is entitled as “**THE PRACTICE AND CHALLENGES OF ROAD PROJECT MANAGEMENT: THE CASE OF ADDIS ABABA CITY ROAD AUTHORITY**” for the partial fulfillment of academic requirement.

This questionnaire is designed to collect primary data for this study only and your genuine responses to the questionnaires are highly demanded on which the success is depending on. I kindly request you to spend a few minutes of your valuable time to answer the questions as per the instruction below:

- ✚ You do not need to write your name
- ✚ All of the questions are responded by yourselves
- ✚ You are required to encircle only one out of the given alternative numbers which is your best choice to say.
- ✚ For some of the questions that need your explanations, please try to honestly describe as per the questions on the space provided.

If you need any explanations or description concerning the study and the questions provided, don’t hesitate to reach me through the mobile phone number: +251 912174159 or email: eyobberhanu19@yahoo.com. Please note that the information you are providing will be treated with utmost confidentiality.

Thank you in advance for your participation in the study!

Part I

PERSONAL DETAILS OF THE RESPONDENT

1. Sex: _____

2 Age: _____

3. Your current Job title in your company: _____

4. Your work experience in your company: _____

5. Educational background:- _____ by _____

6. How many projects have you participated in as project team member or as a project Manager? _____

Part II:

General Direction: In a scale of 1 to 5, please indicate the extent to which you agree with each of the following statements in relation to how well the project management practices were applied and face challenges to Access project. Mark with a tick [√] against the most applicable response. Where; 1= strongly disagree and 5= strongly agree.

The project management practice in road projects undertaken by AACRA

No.	Project initiation phase practices	5	4	3	2	1
1	The objective of the project was Captured in one precise and complete sentence.					
2	High-level project schedule milestones were properly identified.					
3	Scope of work was identified at high level to avoid misunderstanding between the stakeholders.					
4	High-level project resources like budget and people were identified					
5	First draft of the stakeholder management tool was developed					

6	Complete project charter was prepared					
7	Project kick-off meeting was conducted at appropriate time					
8	High-level planning was prepared that serve as a road map for detail plan at the planning phase					
	Project Planning phase practices					
9	Scope statement of the project was prepared in detail.					
10	Project teams were recruited and assembled in a way that enables them to perform all activities as required in cohesive manner					
11	Work breakdown structure (WBS) was developed and helps to properly estimate the required material, human and financial resources.					
12	Network diagram that shows activity dependency and sequence was developed					
13	Proper activity cost and time estimation was made					
14	Overall budget and schedule of the project was determined					
15	Procurement plans of the project were established					
16	Possible risks were identified and quantified					
18	change control plan, communications plan, management plans were developed					
19	Overall project plan was approved by concerned body					
	Project Execution phase practices					
20	Team meetings are effective and held with a stated agenda					
21	The project schedule is updated regularly, incorporating unplanned work as needed					
22	Project execution metrics have been established properly					
23	Project risks are reviewed regularly with new risks identified and updated as needed.					
24	Project status updates are provided to key stakeholders regularly					
25	Problems impeding the team's ability to execute the project plan are efficiently escalated					

26	Quality assurance and scope verifications were properly made					
	Project Monitoring and Control phase practices					
27	Performance report was made for every activity as per the schedule					
28	Overall change control was made to provide appropriate response for any change					
29	Project scope control was made against the planned one for every scope statement					
30	Project quality control was made against the plan as per the client request in the plan					
31	Risk response control was made to confirm whether the risk response actions are going as planned					
32	Schedule and cost controls were made against the planned one to check if cost over runs and schedule delays are properly managed					
33	There was a Management by exception to the project plan					
	Closing phase practices					
34	Procurement audits and contract(s) close out was formally undertaken for all procurements made					
35	Product verification and acceptance test was made for every product delivered					
36	Lessons learned from the project were identified and properly documented for future use					
37	All project records were updated as per the changes made on any record					
38	Project teams were officially released to their operational work at the appropriate time					

The challenges in road projects management undertaken by AACRA

No.	Statement	5	4	3	2	1
	Integration management challenges					

1	Failure to assign and identify Project Manager early in the project					
2	Lack of efficient change management					
3	Lack of Clear vision and goals of the project					
4	Not breaking down development into phases or clear milestones					
5	Not prioritizing operational activities or objectives.					
6	gaps in defining key performance indicators, the retrieval, collection, preparation and interpretation of data for monitoring and evaluation					
7	Limited resources and budgetary allocations for monitoring and evaluation					
8	Lack of Process for project knowledge management and capturing lessons learned					
	Scope management challenges					
9	Changing requirements late in the project and continuing change requests					
10	Incomplete, wrong or not defined Requirements and					
11	Specifications					
12	Design discrepancies					
13	Project requirements inadequately documented					
	Project Schedule Management challenges					
14	Project schedule delays					
15	Too tight project schedule and unrealistic deadlines					
16	Inaccurate time estimations					
	Project Cost Management challenges					
17	Inaccurate cost estimation.					
18	Cash flow difficulties					
19	Lack of Cost Control					
20	Inadequate funding/capital or poor use of funding/capital					
	Project Quality Management Challenges					
21	Use of poor initial testing techniques.					
22	Lack of strict quality control measures					

23	Quality checks not performed at satisfactory level					
	Project Human Resource Management Challenges					
24	Wrong selection of project team					
25	Lack of skilled personnel with adequate capacity					
26	Inadequate project structure					
27	Lacking clear roles and responsibilities among team members.					
28	Being unable to resolve conflicts.					
	Project Stakeholder management challenges					
29	Late identification of stakeholders the project					
30	Low commitment of Stakeholders towards planned projects					
31	Lack involvement of end users of Airport infrastructures					
32	Lack of continuous support from executive					
33	Not obtaining stakeholder approval					
	Project Communication Management Challenges					
34	Lack of professional communication support					
35	Lack of effective communication between stakeholders					
	Project Risk Management Challenges					
36	Poor risk management					
37	Failure to manage expectations					
38	Unexpected events with no effective response possible					
	Project Procurement Management Challenges					
39	Lack of well-prepared procurement planning					
40	Lack of competitive procurement process					
41	Lack of transparency and integrity in the procurement process					
42	Lack of well-prepared contracts with much detail and clear-documentation					

Appendix II:

SECTION II:

1. What are road projects that you have been involved which is under taken by AACRA?

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2. What was your role?

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3. What are the major challenge/s related to project management practice in road projects that you have been involved?

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4. What is the impact/s of the mentioned challenges in the project you have been involved with?

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5. How does the organization deal with those challenges?

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