



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE

ASSESSMENT OF PROJECT MANAGEMENT PRACTICES IN THE CASE OF
GOVERNMENT INITIATED MEGA PROJECTS IN ADDIS ABABA
(ADWA ZERO KILOMETER MUSEUM PROJECT)

BY
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ENDORSEMENT

This is to certify that the project work titled "Assessment of project management practices: a case of government initiated mega projects in Addis Ababa (Adwa Zero Kilometer Museum Project)" prepared by Yordanos Tesfaye and submitted in partial fulfillment of the requirements for the degree of Masters of Arts in project management complies with the accepted standards of the University's regulations with respect to originality and quality.

Approved by the Examining Committee:

----- Advisor	----- Signature	----- Date
----- Internal Examiner	----- Signature	----- Date
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Statement of Declaration

I, Yordanos Tesfaye, declare that the project work titled "Assessment of project management practices: a case of government initiated mega projects in Addis Ababa (Adwa Zero Kilometer Museum Project)" is the result of my own efforts, and that all sources of materials used in the study have been properly acknowledged. With the exception of the research advisor's advice and suggestions, I have developed this research entirely on my own. This research has not been submitted for any degree at this or any other institution. It is provided as part of a Master of Art in Project Management degree program.

By: Yordanos Tesfaye

Signature-----

Date-----

Statement of Certification

This is to confirm that Yordanos Tesfaye worked under my supervision on the project "Assessment of project management practices: a case of government driven mega projects in Addis Ababa (Adwa Zero Kilometer Museum Project)." This work is original, and it is sufficient for submission as partial fulfillment for a Masters of Art in Project Management degree.

Advisor

Signature

Date

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Acronyms and Abbreviations

AAMPCO	Addis Ababa Mega Projects Construction Office
ANSI	American National Standardization Institute
ECDSWC	Ethiopian Construction and Supervision Works Corporation
GDP	Gross Domestic Product
HR	Human Resource
IMPA	International Project Management Association
MCP	Mega Construction Projects
PM	Project Management
PMBOK	Project Management Book of Knowledge
PMI	Project Management Institute
PQM	Project Quality Management
PRM	Project Risk Management
PRINCE	Projects in controlled Environments
SPSS	Statistical Package for Social Sciences

ABSTRACT

The use of effective project management practices is crucial to the success of any project. Project management is seen to be a more successful and resourceful strategy for reaching a goal than the other methods, procedures, and strategies currently accessible. The research was carried out to determine the project management maturity level of the Adwa Zero Kilometer Museum Project using the ten project management knowledge areas defined by PMBOK and identify its weakness and strengths. The research followed a mixed approach and employed a descriptive research methodology. Primary data was collected using survey questionnaire that were devised based on the literature for the assessment and distributed to selected members of the project. As to secondary data; related books, articles, journals and publication from the project office were reviewed Percentages and mean values were used to analyze the data collected. As a result, the study's findings revealed that project management practice is on average (Level 3) maturity level indicating that the basic project management processes and documentation exist in the project, but they are not considered as an organizational standard that fits the scale of a mega project. The findings of the study showed that, some project management knowledge areas i.e. Project, risk, communication and integration management were at a low maturity level in the project while, project human resource, scope, cost and procurement management were practiced at a relatively good maturity level. The project lacks project management professionals and training opportunities are limited. The study recommended that the project management team put in additional effort to improve the Project management practice by strengthening the focus on the knowledge areas with a low maturity level. The project needs to be equipped with project management professionals and consistent trainings in project management knowledge areas and their application must be provided to project team members. Continuous improvement based on lesson learned needs to be encouraged. In addition, improving management oversight, integrating project management processes, ensuring the establishment of effective risk management standards and participating key stakeholders during planning and necessary phases, collecting and compiling project data for future reference and for distributing lesson learned and an all-inclusive monitoring and evaluation system are necessary have been recommended.

Key words: *Project management knowledge areas, Project management maturity, Project management maturity level,*

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Project management is described as the practice of applying knowledge, skills, tools, and methodologies to project activities in order to fulfill project objectives. The art and science of planning, creating, and managing work through all phases of a project's life cycle is referred to as project management. This process is accomplished with the application and integration of the project management processes of initiation, planning, executing, monitoring and controlling and closing (PMI, 2004).

Project management has progressively increased its importance in the growth of any nation. According to Kerzner (2009), most organizations are now recognizing that project management and productivity are linked, and that enterprises should be managed as a series of projects. In order for a project to succeed, it must follow certain procedures. Without a planned and scientific approach to management practice, organizations would be aimless in the process of organizational development as well as project management. As a result, the value of project management to businesses cannot be overstated.

Organizations can use project management strategies enabling them to execute projects more successfully and efficiently. Successful project management is done by applying and integrating project management strategies that are appropriate for the project at hand. Project management approaches may be efficiently adopted from worldwide standards and recommendations such as project management institute (PMI), ISO, ANSI, and IPMA, according to Fraz (2016).

Mega projects are defined as temporary endeavors (i.e. projects) characterized by large investment commitment, vast complexity and long lasting impact on economy, environment and society (Procaccini, Lea-Cox, & Scheffer, 2015). According to Flyvbjerg (2006), while all projects encounter complications and obstacles in terms of execution and success, megaproject development is a riskier process due to its lengthy planning process and complex interconnections. Megaprojects are large-scale, complex endeavors that often cost a billion dollars or more, take several years to conceive and build, include several public and private partners, are transformative, and have a big impact on a huge number of people. Megaprojects need advanced technical and design skills, qualified manpower resources, and large-scale investments.

Developing countries rely on Mega Construction Projects (MCPs) to meet economic, social, and environmental goals, but they face challenges such as a lack of necessary skills and competences, finance, and project management execution. Such managerial issues, according to Flyvbjerg (2006), will have an impact on the overall value and success of projects in developing countries. Nonetheless, the quantity and value of mega construction projects are constantly increasing.

Furthermore, project management approaches change in response to challenges provided by specific projects, as well as internal and external environments. As a result, there is no one-size-fits-all project management style or methodology for dealing with context, and it varies based on the difficulties that megaprojects provide.

1.2. Background of the Project

Adwa Zero Kilometer Museum

The Adwa Zero Kilometer Museum, a project which commemorates the victory of Adwa, is under construction at the center of Piyassa adjacent to Menelik square. The museum is a 4.6 billion birr project that compasses meeting halls and recreational fitness centers. The main goal of the project is to celebrate and remember the victory of Adwa, in which Ethiopians prevailed over Italian invaders in 1889. The Adwa Museum is said to be of great benefit to Ethiopia and Addis Ababa. According to Deputy General Manager, Engineer Meresa, the project will create thousands of jobs opportunities once the project is completed. The project covers an area of 3.3 hectares and is being built on an area that has been fenced off for 20 years.

The center is designed to have a standard and classical museum which elaborates the victory of Adwa, how all nationalities of the country got together to defend the invaders during that era. The center will also accommodate a city hall with a capacity of four hundred people, a standard cinema theatre, a public library, a sports gym, a café and restaurant, a children's playground and a parking lot that can accommodate 1,000 vehicles. The Adwa Museum, a four-story building with 11 blocks, commemorates the liberation of African and black people.

The Addis Ababa City Construction Bureau floated a restrictive tender inviting seven firms to submit their bids following the green light from the Addis Ababa finance bureau. The project construction was awarded to a Chinese company, China Jiangsu International Economic and Technical Cooperation with a due date to complete the construction within two years' time.

1.3. Background of the Organization

a) Mega Projects Construction Office (Client)

Upon the launch of the flagship initiation titled 'Beautifying Sheger Project' on 27 February 2019 which aims at renewing the Addis Ababa City, the Addis Ababa City Mayor's office established the organization, Addis Ababa Mega Projects Construction Office (AAMPCO) specific to the implementation and management of construction of mega projects that take place in the city. The main objective of this office is to develop & implement of Mega projects.

It's a regulating body that oversees the Addis Ababa City Government's megaprojects in order to address project performance issues, manage resources efficiently and effectively, and provide standardized and high-quality projects that benefit the city's citizens economically and socially. It is established with the aim of building 20 major projects by 2017E.C. The A.A. city cabinet has issued Proclamation No. 64/2019 in line with Article 95 of the Addis Ababa City Government Executive Organs re-establishment and to specify the power and duties of the the following activities.

- Deliver projects on schedule, on budget, and to a high quality.
- Lead projects with well coordination and organization.
- Establish the presence of technology transfer in the project construction process.
- Facilitate the development of new job opportunities through the initiatives.
- Facilitate circumstances for the target activity to use the resources gained from charity or via donations.

The Mega Projects Construction Office has since taken the lead in instigating the Sheger projects including the overall project management and its day to-day issues. AAMPCO will execute the overall project and facilitate planning, implementation, monitoring and evaluation as well as manage the everyday activities related to the project.

It is currently building six existing projects in Addis Ababa city namely

- Meskel square Smart Parking,
- Great Palace Smart Parking,
- Addis Ababa City Public Library,
- Adwa Zero Kilometer Museum and
- Transport Bureau Head office

b) Ethiopian Construction Design and Supervision Works Corporation (ECDSWC) (Consultant)

Ethiopian Construction Design and Supervision Works Corporation is a multi-disciplinary engineering firm formed by the merger of three companies: WWDSE (waterworks design and supervision enterprise), CDSC (Construction Design Share Company), and TCDSC (Transport Construction Design Share Company). ECDSWC is a multi-disciplined engineering firm specializing in study, design, construction supervision, and project management. ECDSWC is a fully integrated consultancy business with expertise in water and energy, construction and urban planning, transportation, geo technics, and underground works, as well as a fully supported and structured advanced laboratory and research, surveying, GIS, and civil informatics services

Concerns about project management will have a direct influence on the country's economy because the ECDSWC is in charge of significant megaprojects of strategic importance. The majority of the projects that ECDSWC works on are strategic and mega public projects that are initiated by other government bodies.

c) China Jiangsu International Economic and Technical Cooperation (contractor)

China Jiangsu International Economic And Technical Cooperation Group, LTD is established on Dec.1980 and authorized by the State Council, almost 35 years history until now. The main business is Project Contracting, Labor Service, Importing & Exporting trade business, Real Estate development.

The chief business of the company covers overseas and domestic undertaking contracted projects, import and export trading, international labor services cooperation and development of real estate. The company has launched business with about 80 countries and regions and established branches and representative offices in about 30 countries and regions all around the world. It was assessed as one of the 500 biggest service enterprises in China by the relevant department of the state council and was awarded as the national excellent enterprise of overseas contracted projects and labor services cooperation from 2000 to 2002 by China International Contractors Association of ministry of commerce.

1.4. Statement of the Problem

It's essential to use effective project management practices to the utmost degree possible, For a project's operation and effective completion, According to King (2015), the use of solid project management practices allows construction projects to achieve their goals in terms of fulfilling the intended purpose, quality, efficiency, and cost while also safeguarding the environment. A project, to effectively meet its

intended goals, needs to have a certain practices. A practice is defined as "a manner of doing things" (Wideman, 1999). As previously stated, the biggest reason for project failure in developing nations is a lack of project management competence.

According to Procaccini et al. (2012), Project management competence is limited in developing countries. and employ ineffective project management approaches. Adopting strong project management practices might help them perform better throughout megaproject design and implementation.

In developing countries project management is practiced in a discouraging environment. Factors such as poor support of infrastructures, low level of technology, incapable-implementing institutions, scares resources, unreliable communication, poor and protracted documentation, high turnover of leadership and workers, considerable political instability, low level or absence of accountability and transparency, and long and tedious formal decision-making procedure are typical conditions.

Project management practices maturity in Ethiopia is at low level and it is more complex when it comes to mega projects. Majority of construction projects in Ethiopia face schedule delay and cost overrun. This problem not only relates to the working environment of the organizations but also mainly relates to the internal integration and management of critical PM knowledge areas.

As a result, the need to assess the project management practices of one of the highly budgeted mega projects in the city (Adwa Zero Kilometer Museum Project) it has been found to be critical and timely in order to bridge the research gap. Accordingly, this research tries to assess the project management practice of Adwa Zero Kilometer Museum Project under the then Knowledge areas defined by the PMBOK and show the maturity level of each knowledge area.

1.5. Research Questions

1.5.1. Basic Research Questions

- What is the current maturity level of the project management practice in Adwa Zero Kilometer Museum project?

1.5.2. Specific Research Questions

- Are the project management knowledge areas being practiced in Adwa Zero Kilometer Museum project?
- Which project management practices need to be implemented and/or improved in the Adwa Zero Kilometer Museum project?

1.6. Objectives of the Study

1.6.1. General objective of the study

The main objective of the study is to assess the project management practices and their maturity level in case of Adwa Zero Kilometer Museum project.

1.6.2. Specific objectives of the study

The research attempts to address the following objectives in particular:

- To identify the maturity level of the current project management practices in Adwa Zero Kilometer Museum project.
- To assess whether project management knowledge areas are being practiced in Adwa Zero Kilometer Museum project.
- To identify the gap in which the project management practices need to be improved in Adwa Zero Kilometer Museum project.

1.7. Significance of the study

This research will be helpful by giving insight and demonstrating the contribution of effective project management processes, practices and knowledge areas. The study will serve as a foundation for future research on project management practices in megaprojects and government organizations, as well as consultants and construction businesses, as well as public projects in this country. The study will serve as a foundation for future research on project management practices in megaprojects and government organizations, as well as consultants and construction businesses, as well as public projects in this country.

Moreover, the research will aid in comprehending the importance of practicing project management processes/knowledge domains and applying it to future growth in connection to project completion success. Additionally, this study will be used as a future reference for scholars in the field.

1.8. Scope of the study

This study assesses project management practices is limited to Adwa Zero Kilometer Museum project with respect to the then Knowledge areas defined by the PMBOK. The research will focus on the nature of project management practices in the project management process, tools and methodologies, top management commitment, and problems or impediments encountered during project management implementation on the Adwa Zero Kilometer Museum project. This research is only focused on evaluating project management techniques using PMBOK's widely acknowledged project management knowledge areas.

1.9. Limitations of the study

The research could some limitations listed below:

Project management at a professional level is a new phenomenon in Ethiopia, and the number of project management graduates is likely to be small. As a result, the participants may have a lower degree of theoretical project management knowledge and discipline, making the questionnaires more difficult to grasp and answer to. Furthermore, due to business policy and project status, the research lacks a more in-depth, number of project document analyses as secondary data.

1.10. Organization of the study

There are five chapters in the study paper. The background of the study, statement of the problem, research questions, objectives of the research, significance of the study, scope of the study, and limitations of the study are all included in the first chapter. The second chapter is titled Literature Review, and it discusses relevant literature to the research issue. It includes an introduction, a theoretical discussion, and a review of the empirical data. The research methodology chapter provides the study design and approach, as well as the data types and sources used, and the data collection process. Data presentation, analysis, and interpretation make up the fourth section. This chapter summarizes the study's

outcomes (findings), which is followed by an interpretation of the findings. The Summary, Conclusion, and Recommendation are included in the last or fifth chapter.

1.11. Definition of key terms

Project: is a temporary endeavor that aims to provide a one-of-a-kind outcome, product, or service. It is transitory in the sense that it has a known start and end date, as well as a defined scope and resources.

Mega projects: are large-scale, complicated endeavors that often cost a billion dollars or more to conceive and build and take several years to complete. It involves a diverse range of public and private partners, is transformative, and affects millions of people. (PMI, 2013).

Project management: is the art and science of converting vision into reality (PMI, 2013)

Project Management Practices: Project Management Practices are a wide range of methods project managers use to manage projects (PMI, 2013).

Project Management Knowledge Area: is defined by its knowledge needs and characterized in terms of its component processes, practices, inputs, outputs, tools, and methodologies.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

This section provides a review of related literature that includes both theoretical and empirical components and was utilized to guide the investigation. Project, megaproject, project management Practices, project management knowledge areas, and other topics are explored in this section. This section also discusses previous empirical findings on the study's topic as well as similar research. Its goal is to provide answers to the research issues and add to the growing body of project management knowledge.

2.2. Theoretical Review

2.2.1. Project

A project is a temporary and non-repetitive endeavor, characterized by a clear and logical sequence of events, with a beginning, middle, and end, focused on the accomplishment of a clear and defined objective on deadline, with costs, resources, and quality parameters specified (Vargas, 2008). It is also characterized as a difficult, non-routine, one-time endeavor to fulfill client demands that is constrained by time, budget, resources, and performance standards. Certain characteristics distinguish a project from other initiatives. Some characteristics mentioned by (Larson, 2011) are:

- A project has a clear and well-defined goal.
- A project has a definite life span with a beginning and an end, and it is transient in nature. Each is an ad hoc organization of personnel, material, and facilities assembled to accomplish a goal within a scheduled time frame; once the goal is achieved, the ad hoc organization is disbanded.
- Projects cut across organizational and functional lines because they need skills and talents from multiple functions, professions, and organizations.
- A project is unique because it aims to do something that has never been done before.
- A project is a one-time action that will never be duplicated exactly.
- A project involves the utilization of resources and has a specified parameter, as well as precise time, cost, and performance constraints.
- A project involves unfamiliarity and risk. It may encompass new technology or processes and, for the organization undertaking it, possess significant elements of uncertainty and risk.
- A project has a single, stated goal and well-defined end-items, deliverables, or outcomes, which are often outlined in terms of cost, schedule, and performance.

2.2.2. Mega Projects

Megaprojects are large-scale, complex ventures that typically cost a billion dollars or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people (Hirschman, 1995). Megaprojects are a unique type of project because of their high cost, stakeholder engagement, difficult borders, and prolonged planning process, all of which make their development a considerably riskier process.

Megaprojects, according to Flyvbjerg (2014), often cost \$1 billion or more. Cost, on the other hand, should not be a limiting factor in defining megaprojects. According to Warrack (1985), projects with a

lesser budget, such as \$100 million, might use a relative approach depending on the circumstances. Megaprojects are defined by five factors: high cost, high complexity, high risk, lofty principles, and high visibility (Fiori & Kovaka, 2005). Examples of megaprojects are high-speed rail lines, airports, seaports, motorways, hospitals, national health or pension ICT systems, national broadband, the Olympics, large-scale signature architecture, dams, wind farms, offshore oil and gas extraction, aluminum smelters, the development of new aircrafts, the largest container and cruise ships, high-energy particle accelerators, and the logistics systems used to run large supply-chain-based companies like Amazon and Maersk (Flyvbjerg, 2006).

Megaprojects are a different type of project because of their greatness of objective, impact on the public, economy and environment, required time and budget, complexity, and stakeholder involvement making them very a different type of project to manage. Flyvbjerg (2014) proposed the 'iron rule of Megaprojects,' saying that megaprojects are certain to fail due to the 'iron triangle' requirements of time, budget, and scope. Nine out of 10 projects, according to Flyvbjerg (2006), have cost and timing overruns. According to Flyvbjerg (2014) and (Aaltonen & Kujala , 2010) the following characteristics are important for megaproject development, yet they are often disregarded or overshadowed:

- The development of megaprojects is a risky process due to the lengthy planning process and complex interactions.
- It is necessary to have strong internal project management and leadership capabilities.
- The scope and objectives of megaprojects will almost always evolve over time.
- A thorough analysis of the problem to determine whether the proposed initiative is necessary
- Decision-making, planning, and management are multi-actor processes involving public and private stakeholders with competing interests.
- Cost and time overruns, as well as benefit deficits, will come from underestimating expenses and overestimating benefits.

2.2.3. Project Management

Project management is defined as the application of knowledge, skills, tools, and procedures to project activities in order to achieve project requirements. (Charvat, 2003) Defines project management as a set of tools, techniques, and knowledge that, when applied, helps to achieve the three main constraints of scope, cost and time. Project management is accomplished through the appropriate application and integration of the project management processes identified for the project. Project management enables organizations to execute projects effectively and efficiently (PMI, 2013). Project management is also defined by PMI (2003) as the application and integration of logically grouped processes that are divided into five stages: initiating, planning, executing, monitoring& controlling, and closing, all of which are carried out within a given scope, quality, schedule, budget, resources, and risk.

Because of the increasing use of projects in businesses, a strategy for efficiently managing these temporary activities that are essential to the organization's strategic goals was required. As a result, academics and experts in the area devised a strategy for effectively managing projects. Managing a project is a difficult and complex activity that necessitates the identification and commitment of resources to assure the project's completion and, as a result, the achievement of organizational goals. (Schwalbe, 2009)

2.2.4. Project Management Practices

Project management practices refer to a variety of techniques that project managers employ to manage projects. Project management strategies and processes are used to organize resources in order to accomplish the desired outcomes. Over time, project management has evolved into a complicated and comprehensive process. As a result, companies and project management organizations have produced standards in order to improve the implementation of project management activities. There are a number of project management practices; project management knowledge areas, applicable/contribute for successful management of projects (PMI, 2013). Best practice in project management is a broad word that encompasses guidelines and international standards. The purpose of these standards and guidelines is to enhance project management. These best practices have been collected from guidelines and international standards. PMBOK, PRINCE2 (Projects in Controlled Environments), P2M (Project & Program Management), PCM (Project Cycle Management), and ANSI's project management body of knowledge (American national standard).

When it comes to project management, the organized application of project management, fundamental knowledge, and ethical principles helps to ensure that projects are completed successfully. More than a talented, experienced, informed, and professional project manager is required to complete a successful project. But rather, all project stakeholders must have a fundamental grasp of project management, as well as different well-defined processes that are put into effect to smooth the pace of actual cooperation and guarantee that the urge to make it happen is realized. The Project Management Body of Knowledge (PMBOK), published by the Project Management Institute (PMI), represents knowledge and practice that is widely acknowledged and unique or almost unique to the profession of project management, according to Wideman (1999). This study will use all the ten project management knowledge areas defined on PMBOK guide.

2.2.5. Project Management Knowledge Areas

A project management knowledge area is a defined area of project management that is specified in terms of its component processes, practices, inputs, outputs, tools, and techniques and is determined by its knowledge requirements. PMI, in its PMBOK Guide, divided the large field of PM into ten manageable vertical, chronological knowledge areas. These are; project integration, scope, time/schedule, cost, quality, HR, communication, risk, and procurement management and stakeholder.

a) Project Integration Management

According to Schwable (2009), several project management processes are included in project integration management, including developing project charters, developing project management plans, directing and managing project work, monitoring and controlling project work, performing integrated change control, and closing project phases. Within the project management process categories, project integration management comprises the processes and activities for identifying, defining, combining, unifying, and coordinating the numerous processes and project management activities.

b) Project Scope Management

According to PMI (2013), project scope management focuses on all process related to activities that are required to complete the project successfully. These include creating a scope management plan, documenting and managing stakeholder needs, describing the project and its products, validating the deliverables of the project and controlling and monitoring the status of the project and managing changes.

Project scope management provides a good guidance for directing on how the scope of the project will be managed. Scope management consists of inputs (i.e. project charter, project management plan), tools (i.e. expert judgment, Collect Requirement, Product analysis) and outputs (i.e. scope management plan, requirements management plans). Scope answers the question 'what will be done'.

c) Project Time Management

In project management, project time management refers to all of the procedures and activities that must be completed in order for the project to be completed on time. Planning plans and processes for defining policies, procedures, and documenting planning, designing, implementing, and controlling the project's time schedule are all part of the project time management process. Time is one of the project constraints, which includes processes like planning schedule, defining, sequencing, and estimating duration of activities, developing and controlling schedule.

d) Project Cost Management

Project cost management, according to PMI (2017), entails the procedures of planning, estimating, budgeting, financing, funding, managing, and controlling expenses in order for the project to be completed within the allocated budget. The process of defining policies, procedures, and planning and recording expenses, expenditure, and cost control is all part of project cost management. Furthermore, cost management evaluates costs by producing an approximation of the monetary resources required to fulfill the project's tasks. It also calculates the project budget by a process of aggregating the projected costs of each project activity, resulting in an allowed project cost baseline.

e) Project Quality Management

PQM insures that the project deliverables are according to the stakeholders objectives by undertaking activities like plan quality, perform quality assurance, and by controlling quality (PMI, 2017). Incorporating the organization's quality policy into the key PM functions of planning, managing, and controlling is quality management. Project Quality Management ensures that all project criteria are met and validated, including product requirements.

f) Project Human Resources Management

Project human resources management consists of a number of processes such as organization, managing and leading project team. The team in a project will usually comprise of people who are assigned tasks and responsibilities to complete the project. The project team members have different types of skills and knowledge which enable them to accomplish the assigned tasks and activities. Project HR management focuses on HR planning and processes that aid in establishing and documenting project staff roles and duties, as well as team member reporting relationships. The availability of team members to fulfill project tasks is taken into account by HR management.

g) Project Communications Management

According to Kerzner (2011), project quality management encompasses all processes and activities associated with implementing organizational quality policies, goals, and objectives, as well as responsibilities. PMs' communication with team members and stakeholders is the emphasis of communication management. Effective communication between team members and stakeholders bridges the distance between them and creates channels for exchanging ideas and viewpoints. Although all areas of knowledge are vital in projects, communication may be the most significant because it informs all aspects of the project.

h) Project Risk Management

Project risk management entails a number of steps, including risk management planning, identifying and assessing risks, and implementing risk management controls. PRM deals with the processes of ensuring a proper risk identification, analysis and control during different phases of project. It enables the project team to take proactive responses and control the impact of risk events (PMI, 2017). It has been identified that the risk factors should be dealt with in the early phases of a project if risk management is to be effective (Hussein & Karimin, 2006). By measuring and integrating the likelihood of occurrence, project risk management focuses on recognizing which risks may have an influence on documenting the project's features, ranking risks for further analysis or actions, and prioritizing risks for further analysis or actions.

i) Project Procurement Management

According to Schwalbe (2009), project procurement management has a significant influence on schedule and budget. All processes necessary for purchasing and/or obtaining items and services are included in project procurement management. Procurement management is concerned with contract management, as well as the processes and changes that may be necessary to establish and handle contracts and purchase orders. Contracts, purchase orders, planning procurement, conducting procurement activities, administering and closing procurement are all part of the project procurement management process. It may also entail employing subcontractors, purchasing or obtaining items, services, or results from sources other than the project team. In the early stages of the project life cycle, make or buy assessments are used to inform procurement choices.

j) Project Stakeholder Management

Stakeholder management analyses stakeholders' expectations from the project and develops adequate strategies for effective involvement of stakeholders in decisions related to the project. Project stakeholder management deals with the processes of identifying and managing different stakeholders during different phases of project lifecycle. Stakeholders must be involved and controlled to make sure their needs are met. Inputs of stakeholder management include project charter, organizational process assets, stakeholder analysis, communication methods (PMI, 2017).

2.2.6. Project Management Maturity Models (PMMM)

A project management maturity model's goal is to give a model of progressive improvement in project management systems and processes that can be used to evaluate an organization's capabilities and chart a course for improvement. There are a number of maturity models. As stated by Yimam (2011) these models differ from one another in the concepts they embody and the suggestions they make as to how the path to maturity. Some models relevant to this research are stated below.

a) Project Management Solution's Maturity Model

This model mirrors the PMBOK knowledge areas with CMM 5 level maturity stage (Yimam, 2011). It evaluates the implementation and maturity level of PM in the ten project management knowledge areas.

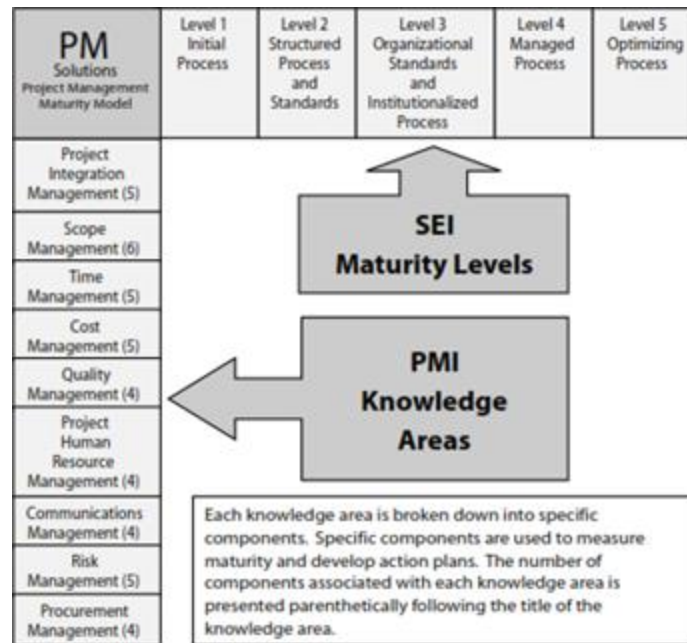


Figure 1: Project Management Solution's Maturity Model 9 (Pennypacker, 2001)

Level 1: Initial Process

Individual project managers are not held to specific accountability by any process standards at this stage, despite the fact that there exist project management processes but no established practices or standards. The documentation is loose and ad hoc. Management is aware of the concept of a project, that there are established methods, and that project management is required.

Level 2: Structured processes and standards

Although data may be gathered and connected manually, there are fundamental metrics to measure project cost, schedule, and technical performance. The information provided for project management is frequently a combination of summary and comprehensive data. These fundamental mechanisms are documented. Project management is supported by management, but there is no uniform knowledge or engagement, nor is there an organizational obligation to comply for all projects. Larger, more visible projects are often managed by functional management, and they are normally carried out in a methodical manner.

Level 3: Organizational Standards and Institutionalized process

All project management practices have been defined as organizational standards and are in place. Clients are active and important members of the project team in these procedures. Management participates in the input and approval of major decisions and documentation, as well as significant project concerns, on a regular basis. The majority of project management processes are automated.

Level 4: Managed process

Management properly understands and performs its role in the project management process, managing at the appropriate level and clearly differentiating management styles and project management needs for projects of various sizes and complexities. Projects are managed with a view on how well they've done in the past and what they're projected to do in the future. Management makes judgments about the project

based on efficiency and effectiveness measures, and they are aware of the project's effects on other initiatives. Cost estimates, baseline estimates, and earned value are used to analyze all projects, changes, and difficulties.

Level 5) Optimizing Process

Management and the organization are concerned not just with project management but also with ongoing improvement. To better project management operations, processes have been put in place and are being implemented. Lessons learned are reviewed and used on a regular basis to enhance project management methods, standards, and documentation.

b) Kerzner's Project Management Maturity Model

Level 1: Common Language (Initial Process)

In this level, the organization recognizes the importance of project management and the need for a good understanding of the basic knowledge on project management and the accompanying language or terminology. In the first level, project definition and awareness are important (Kerzner, 2009).

Level 2: Common Process (Repeatable Process)

At this stage, the organization realizes the need to establish and build common processes so that project accomplishments may be replicated on future projects. There is also acknowledgement of the application and support of project management concepts to other methodologies used by the company. At this level, the primary process areas include business case development, project formation, project planning, monitoring and control, stakeholder management and communications, requirements management, risk management, configuration management, and supplier and external party management.

Level 3: Singular Methodology (Defined Process)

At this stage, the company understands the benefits of merging all corporate methodologies into a single approach, with project management at its core. Process control is also easier with a single methodology than with many methodologies because of the synergistic effects. Benefits management, transition, information management, organizational focus, process definition, training, skills and competency development, integrated management and reporting, lifecycle control, inter-group co-ordination and networking, quality assurance, and center of Excellence (COE) role deployment are all covered at this level, according to Wysocki R. k. (2004).

Level 4) Benchmarking (Managed Process)

This level acknowledges the importance of process improvement in maintaining a competitive advantage. Benchmarking should be done on a regular basis. The company must decide whom to benchmark and what to benchmark (Kerzner, 2009). Within this level, management metrics, quality management, organizational cultural growth and capacity management are the key process areas. (Wysocki R. k., 2004)

Level 5- Continuous Improvement (Optimized Process)

In this level, the organization evaluates the information obtained through benchmarking and must then decide whether or not this information will enhance the singular methodology. The key process areas are proactive problem management, technology management and continuous process improvement in this level. (Kerzner, 2011)

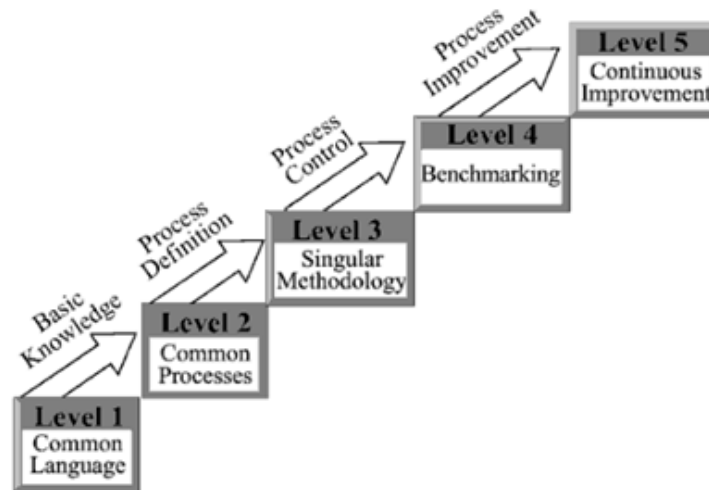


Figure 2: Kerzner's Project Management Maturity Model (Kerzner, 2011)

2.2.7. Project Management in Developing Countries

Project Management in developing countries is facing many challenging problems and non- conducive environment (Al-Mharmah & Abbasi, 2000). Many projects in such countries end up uncompleted, abandoned or unsustainable (Sonuga, Aliboh, & Oloke, 2002). Projects must be finished within a certain period of time, at a certain cost, and with a certain level of quality in order to meet their goals and please stakeholders and users. Due to the numerous challenges that developing countries confront, such as socio-cultural contexts, political agendas, and financial resources, strategic project management should be carried out with all of these factors in mind.

Developing countries	Developed countries
Most projects are public owned*	Most are private*
Infrastructure projects dominate**	More or less mix of projects*
Private projects are short time*	Medium time*
Highly sensitive to the environment**	Moderately sensitive to the environment
Complex ,uncertain ,unstable and unpredictable environment**	Complex , dynamic ,relatively stable and to some extent predictable environment***
Extreme scarcity of resources***	Resource available at cost (constrained)
Underdeveloped private sector and forces of market*	Developed private sector and forces of market*
Significant involvement of government in business*	Market economy*

Table 1: Projects and Project Environment in Developing and developed countries (Jakale, 2004)

The potential value of project management in developing countries is significant. The demand is compounded by the lack of resources, a shortage of skilled professionals, and a variety of other issues. Because resources are limited and the completion of project objectives is critical in most circumstances, good project management is critical. Project managers in poor countries, like managers in general, work in a different context and face a different set of obstacles than those in developed countries, according to Sonuga, Aliboh, and Oloke (2002). In such nations, many initiatives are left unfinished, abandoned, or unsustainable.

In the case of Ethiopia, some known projects have been either delayed, have had cost overruns, poor in quality, poor user satisfaction or did not meet the initial objectives (Fetene, 2008). It was identified that 79.1 % of the construction project fails to meet its objectives in Ethiopia and if completed it is with an average cost overrun of more than 26.2%. When projects take longer than expected, they require extra resources; cost overruns result from rising labor, material, machinery, and equipment expenses. As a result, project failure has a considerable impact on economic and political dimensions, culminating in societal discontent.

2.2.8. Mega Projects Management in Developing Countries

According to Jekale (2004), Mega Projects play a larger role in developing nations, where 80 percent of total capital assets are responsible for considerable construction operations, which account for 10% of GDP (gross domestic product), and over 50% of wealth is invested in capital.

Despite Mega Projects' essential role in achieving developing countries' social and economic sustainable development objectives, through major development projects such as infrastructural, residential, medical, educational, and cultural projects, where societies fulfill their needs and requirements, the performance remains poor (Othman, 2013). Despite the fact that all Mega Projects have a highly sophisticated and complex background, projects in developing nations risk more unpredictability, instability, and unethical behavior due to a variety of issues.

According to (Nguyen, 2007), governments and public sector groups often sponsor megaprojects. As a result, cost overruns have a greater impact and may result in the project's termination if governments struggle with a "lack of financial resources, cost management, and venture capital," and funders lose faith due to poor megaproject execution.

Mega project management requires a set of managerial and technical skills, highly qualified staff members, and large-scale investment (Sturup, 2009). As a result, project management processes that are strict in nature, such as risk management, contracting, scope, communication, and procurement, are more important in developing countries than in developed countries. As a result, a project manager working in a developing country faces greater challenges and complexity than those working in developed economies

2.3. Empirical Review

This part of the review was carried out in addition to the theoretical review to identify specific areas for study and examine the ways in which other empirical research had considered project management practices and project success.

As it was discussed above on the theoretical review, effective project management is essential for the successful completion of projects. (Cusworth & Franks, 1993) Mention that regular and swift change of the environment and a project's nature of unpredictability cause challenges to implementation of project management. Although it is commonly considered that a lack of resources and funds is the primary cause of project failure, it is clear that the primary cause is a lack of effective project management competence.

Various researches have been undertaken in this field, according to evidence. The majority of research found that most projects suffer a variety of issues as a result of poor project management practices. The management approaches used can be influenced by the nature of the project, its location, owner, purpose, and objectives. As a result, researching project management methodologies specific to developing countries is crucial in order to better identify difficulties and development opportunities. As a result, in this section, certain research pertinent to project management techniques and project management practice in the Ethiopian construction sector were evaluated, demonstrating that project management practice in this nation is still in its early stages.

According to (Yimam, 2011), Ethiopia's construction sector, like that of every developing country, plays a significant part in the country's economic growth. (Jekale, 2004) mentions that the country lacks sufficient construction and managerial capabilities.

In Ethiopia, the practitioners have less project management expertise. The use of finite financial and physical resources has a significant impact on construction project management, with controlling operations confined to cost and time monitoring dimensions alone. Contractors are unable to effectively handle contracts, and the majority is untrained in the preparation of cost and schedule reports, quality records, safety reports, change order records, claims records, progress reports, and payment requisitions, among other things. Most local contractors even don't have claim management knowledge or are not interested to pursue legitimate claim for fear of damaging working relationships and their reputation in the industry as they will be dealing usually with few public institutions (Seleshi, 2017).

The study (Yimam, 2011) was intended to evaluate if Ethiopian contractors are using the procedures, methods, and tools associated with each project management knowledge area to manage their construction projects, and if so, to what extent. Interviews and questionnaires were administered to chosen Ethiopian grade I contractors as part of the study. The research indicated that project management and contractor project management techniques are in their infancy, based on the data from the survey and interview. Furthermore, as compared to other knowledge areas, the project management knowledge areas of material, procurement, cost, time, finance, and human resource management have exhibited a relatively high level of maturity. The research revealed that almost half of the contractors do not perform the essential project management activities.

The study "Challenges of construction project management in Ethiopia" was made by Tadesse Ayalew¹, in 2016 Published by Journal of Architecture and Civil Engineering. The research looked at the Ethiopian construction industry's performance in terms of project management methods and problems. The research found that construction project management practice was poor in terms of applying general project management practices, project management functions, tools, and methodologies. The level of practice in time, cost, quality, resources, and risk management, in particular, were found to be very low.

According to (Yimam, 2011) in a study conducted on project management maturity assessment using PM solutions maturity model, most knowledge areas were not totally standardized, and consequently procedures were used inefficiently.

According to the findings of the strategy of development, the construction industry's project management practice is in its infancy, and little focus is placed on the primary project constraints of time, money, and quality. Furthermore, the construction project management practice level in terms of applying general project management methods was inadequate.

2.4. Conceptual Framework

The proposed framework for this research is illustrated in figure below. It shows assessing project management practices with the ten project management knowledge areas defined by the PMI (PMBOK) in relation to successful project delivery.

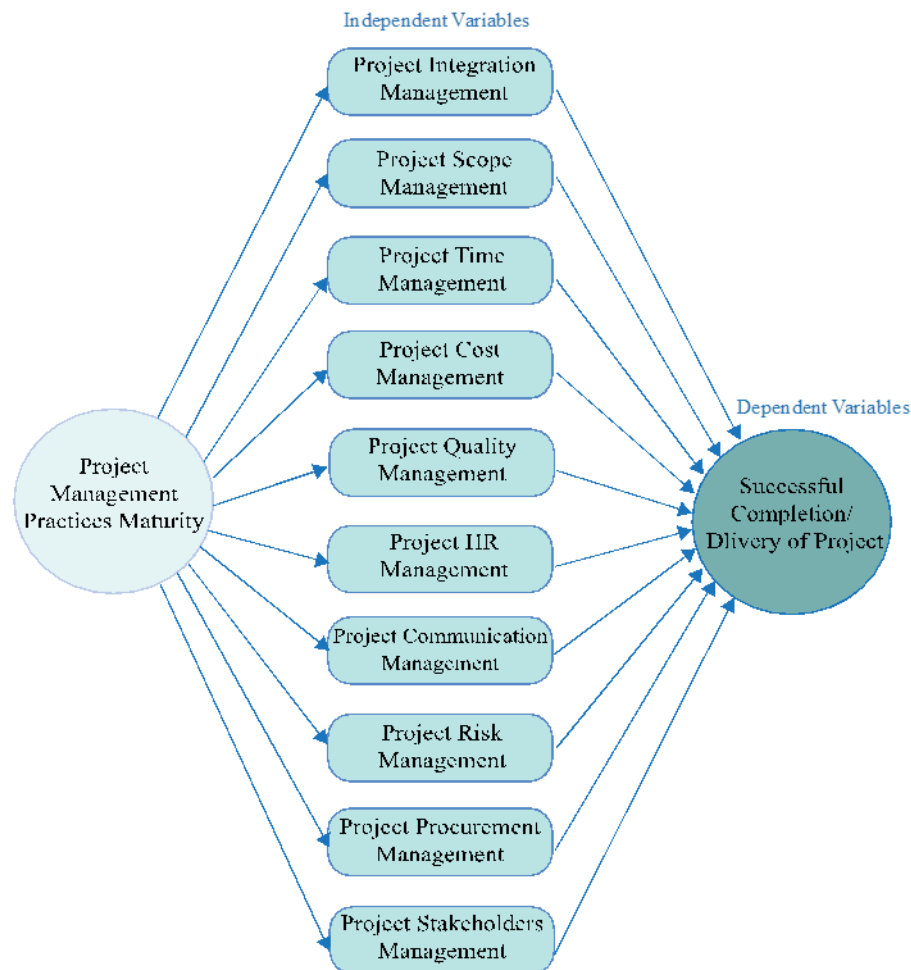


Figure 3: Conceptual Framework (Developed by researcher based on literature review, 2021)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

The focus of this section of the study is to provide a full description of the research methodology that was used. It specifies how the research was carried out in relation to the study's objective. It contains description of the study design, sampling technique, data collection sources, tools, and processes, as well as the data collection method.

3.2. Research Design

The research was conducted with descriptive research method using a quantitative approach. Primary data was acquired from employees directly involved in project work, support staff, management staff and technical experts constructed from the three stakeholders (client, consultant and contractor). Additionally, secondary data was used from related journals, articles, books and some project publications. As much data as possible has been collected for analysis to ensure the reliability of data on project management practices and investigate the effects of each knowledge areas of project management on the project.

3.3. Population of the Study

In a study, the phrase "population" does not always refer to a specific number of individuals; rather, it refers to the total number of items (cases) of the type that are being studied. Only a few groups within this demographic are likely to be of interest to the researchers. The sample frame is the selected category. (Hair, Joseph, William, & Barry, 2010) Define target population as a defined group of people or item for which questions may be asked or observations made in order to produce needed data structures and information.

The target population of the study consists of the employees of AACGMPCO (the client) that are directly involved with the project, Employees of ECDSWC (the consultant) and employees of China Jiangsu International (the contractor) at different divisions and functional levels hence the sampling frame is Adwa Zero Kilometer Museum project. The research targets employees that are responsible for planning, executing, controlling and supporting overall project implementation within the organization.

3.4. Sampling Techniques

In order to select the respondents to the questionnaires, the researcher utilized purposive (subjective or selective) sampling, which relies on one's judgment when selecting individuals of the population to participate in the study. Purposive sampling allows us to utilize our judgment to choose situations that will help us answer our research questions and achieve our goals. According to Neuman (2005), when we want to select cases that are exceptionally informative, we frequently employ this type of sample.

It enables for the recruitment of a small number of informants from various functional levels to obtain the necessary information in order to complete the research in a short amount of time while obtaining optimal results.

The responses will be chosen based on their field of work, experience, and knowledge regarding project management practices that they can provide. They are chosen from the three organizations AACGMPCO, ECDSWC and China Jiangsu International on the Adwa Zero Kilometer Museum project.

3.5. Source of data

To acquire adequate and relevant data to answer the research questions and achieve the research objectives, the study employs both primary and secondary data. Employees and professionals of AACGMPCO, ECDSWC and China Jiangsu International on projects and at the organizational level provided the primary data. And the secondary data for the study was gathered from relevant publications, text books, journals, and other published sources. Also reviewed were available organizational papers such as project profiles, as well as accessible project papers such as agreements, plans, and reports.

3.6.Procedures of data collection

In order to get enough data, the study employed both primary and secondary data sources. Close ended questionnaires were used as the major data source. The instruments used in order to collect primary data, close ended questionnaires were designed focusing on the effectiveness of project management practices, based on the knowledge areas defined by PMBOK and review of related literature. The project site's resident engineer, project coordinator, project manager, project members, and support personnel received questionnaires. Furthermore, the study employed secondary sources of data such as firm papers, project reports, papers, journals, studies, and books.

3.7.Methods of data collection

The acquired data was processed through editing activities such as analyzing the raw data for errors, omissions, classifications, and tabulation. Data was evaluated qualitatively by comparing findings to theoretical and empirical literature.

Qualitative approaches were used to assess the data gathered by the researcher. Statistical procedures were carried out using SPSS software version 26 to evaluate the data gathered with questionnaires in accordance with the research's overall objective.

3.8. Validity and Reliability

The research's validity was established using a variety of relevant and well-proven scientific research procedures. The topics of study were closely associated in the respondents' questionnaire. In order to improve the validity and dependability of data, the researcher employed various data gathering methods such as triangulation.

Thus, data collection techniques such as questionnaire observation were used collectively to fill the gaps of one technique with the others. These elements should work together to ensure the study's validity and reliability. The adviser reviewed the researcher's data and study instrument for unclear, ambiguous, and ineffective questions. Additionally, the adviser reviewed and approved the instrument's effectiveness in addressing the research's goal.

The questionnaire's scale reliability is shown below. Because the Cronbach's alpha coefficient for the questions under consideration is more than 0.7, the questionnaire's reliability is statistically acceptable, means that the data gathered may be utilized for further study.

Project Scope Management knowledge areas	Cronbach's alpha coefficient	Number of items	Scale
Project Scope Management	.794	5	1-5
Project Time Management	.741	5	1-5
Project Quality Management	.748	4	1-5
Project Cost Management	.807	5	1-5
Project Risk Management	.819	5	1-5
Project Integration Management	.838	4	1-5
Project Stakeholder Management	.723	5	1-5
Project Human Resource Management	.795	5	1-5
Project Communication Management	.834	5	1-5
Project Procurement Management	.752	7	1-5
Overall reliability	.800	50	

Table 2: Scale Reliability Result (developed by researcher using SPSS, 2021)

3.9. Ethical Considerations

Throughout the research phase, the researcher followed ethical research methods. Prior to the collection of study data, agreement from study participants was acquired to assure the study's ethical quality. Respondents were informed about the study's goal in order to help them feel more comfortable when responding.

Participants were also made aware of the fact that participation is entirely optional and that they have the option of skipping questions if they are unclear about the problems presented by the researcher. Anonymity was ensured to the participants.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter presents a comprehensive analysis, interpretation & discussion of results acquired from the questionnaire survey distributed among the main stakeholders of the Adwa Zero Kilometer Museum project. Statistical procedures were used to examine the obtained data from the questionnaires distributed in accordance with the research's overall goal, using SPSS version 26 software. Descriptive statistics such as mean, frequency, standard deviation and percentage were employed to describe the results. Each knowledge area's maturity level is determined using a questionnaire that was developed in five levels ranging from five to one, with five representing Very good maturity, four representing good maturity, three representing average maturity, two representing low maturity, and one representing very low maturity. The characteristics of each knowledge areas with respect to the maturity level were discussed in the questionnaires to provide a clear understanding to respondents.

The response rate of the questionnaire is described in the first section. The demographic profile of the responders is discussed in the second part. The results of the project's general project management issues are described in the next section. Following that, the following section discusses the results of the maturity level of project management practices in connection to the project's project management knowledge areas.

4.2. Response Rate

Among the total of 55 questionnaires distributed to the project stakeholders 48 questionnaires were appropriately filled and returned giving an 87.27% return rate which is assumed to be suitable for further analysis.

Questionnaire distribution method	Number of distributed questionnaires	Number of returned questionnaires	Overall response rate (%)
Physically via hard copy questionnaires	35	31	93.9%
Via email and Telegram	20	17	76.47%
Total	55	48	87.27%

Table 3: Response Rate (Field Survey, 2021)

4.3. Demographic Data

The study attempted to determine the background information of the respondents involved in the study. The background information validates at the respondents' relevance for answering the questions. In order to provide the demographic information and composition of the population under study, the respondents were asked about their gender, age, education level, years of experience in the organization, position in the organization and if they had previous project management training or education.

Number.			Respondent frequency		Total	
			N	%	N	%
1	Gender	Male	41	85.4%	48	100%
		Female	7	14.6%		
2	Age	Below 30	32	66.7%	48	100%
		31-40	12	25%		
		41-50	4	8.3%		
		above 50	-	-		
3	Educational Level	PHD	-	-	48	100%
		MA/MSc	6	12.5%		
		BA/BSc	42	87.5%		
		Diploma	-	-		
		High School completed	-	-		
4	Current position on project	Project Coordinator	4	8.3%	48	100%
		Project Member	25	52.1%		
		Project manager	4	8.3%		
		Resident Engineer	2	4.1%		
		Support Staff	13	27.2%		
5	Years of Experience	3-5 years	24	50%	48	100%
		5-10 years	11	22.9%		
		11-15 year	8	16.7%		
		>15 years	5	10.4%		

Table 4: Demographic Data (Field survey, 2021)

Out of 48 respondents only 7 are female and the remaining 41 are male respondents. The survey shows a higher percentage of male participants (85.4%) than female participants (14.6%), indicating that the gender distribution of the study is not proportional.

The result illustrates that 32 respondents (66.7%) are below the age of 30, 12 respondents (25.0%) are between the age of 31 and 40, 4 respondents (8.3%) are between the age of 41 and 50 there were no respondents above the age of 50. We can see from the result, the field survey comprised of a relatively young audience.

87.5% of the respondents hold a bachelor's degree (BA/BSc), and 12.5% have a master's (MA/MSc) degree. Civil Engineering, Architectural and urban planning, construction technology management, water engineering and project management are the field of studies identified from respondents.

Among the 48 respondents only 9 have taken project management course and among them only 2 participants took it as a full program for their master's degree the rest took 1 week trainings and two respondents took a two weeks training.

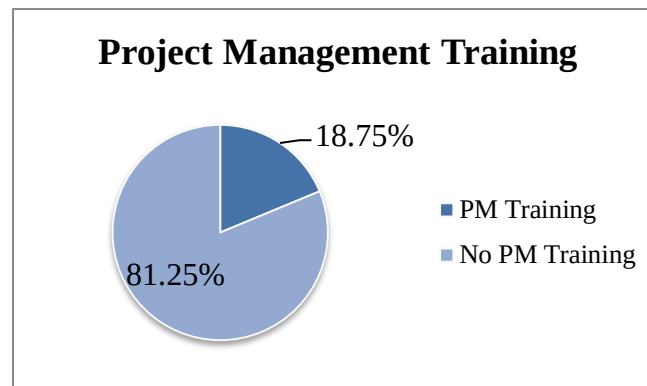


Figure 4: Project Management Training (Field Survey, 2021)

As it can be observed from the above table, the survey collected data from employees' position in the project, the majorities (52.1%) of the respondents are project members, while 27.2% are support staffs in the offices 8.3% are project managers and 8.3% are project coordinators the remaining 4.1% are resident engineers.

From the findings, majority of the respondents (50.0%) had a working experience of between 3 to 5 years, 22.9% had a working experience of 5 to 10 years while 16.7% had working experience of above of 11 to 15 years 10.4% had more than 15 years of experience. Therefore, all respondents had an extensive experience with minimum of three years.

4.4.General project management issues

Table 5: Project Management Issues (Field Survey, 2021)

Project management issues		Frequency	Percentage (%)
Is there a department dedicated to project management in your company?	Yes	18	37.5%
	No	30	62.5%
	Total	48	100
Is there project management training available in the company?	Yes	7	14.6%
	No	41	85.4%
	Total	48	100

Questions on major challenges of projects within the company and project success rate within the organization from the employee's perspective were posed to the respondents in relation to project management concerns. They were also asked if there was a project management department in their organizations and whether there is a project management training access within the organizations.

Multiple response questions on the major challenges of the project were given to participants, as were multiple answer questions on the major challenges of the organization's projects. Internal concerns, such as a lack of clarity in the scope of the project, as well as time, cost, and quality concerns, are cited by the majority of respondents. Issues of government involvement and organizational culture have been noted as a key challenge from the external. This demonstrates that the project faces both internal and external challenges.

No.	Project Challenges			Respondent		Total		
				Frequency	%	N	%	
1.	Major challenges of the project	Internal	Lack of clarity in the scope of the project	Yes	31	64.6%	48	100%
				No	17	38.4%		
			Time, cost and quality	Yes	30	62.5%	48	100%
				No	18	37.5%		
			Resources	Yes	27	56.3%	48	100%
				No	17	43.8%		
		External	Policies and procedures	Yes	22	45.8%	48	100%
				No	26	54.2%		
			Organizational culture	Yes	25	52.1%	48	100%
				No	23	47.9%		
			Government	Yes	41	85.4%	48	100%
				No	7	14.6%		
		Environment	Yes	18	37.5%	48	100%	
			No	30	62.5%			

Table 6: Project Challenges (Field survey, 2021)

The respondents' perceptions of the Adwa Zero Kilometer Museum Project's success rate are depicted in the figure below. According to the finding, 60.7% of the respondents assume it is fairly successful, while the rest 39.3% believe the project is going in a successful rate. None of the respondents answered with the choices of not successful or Very successful. The percentage implies that more respondents replied with the answer fairly successful this implies that the project lacks some inputs to be considered very successful.

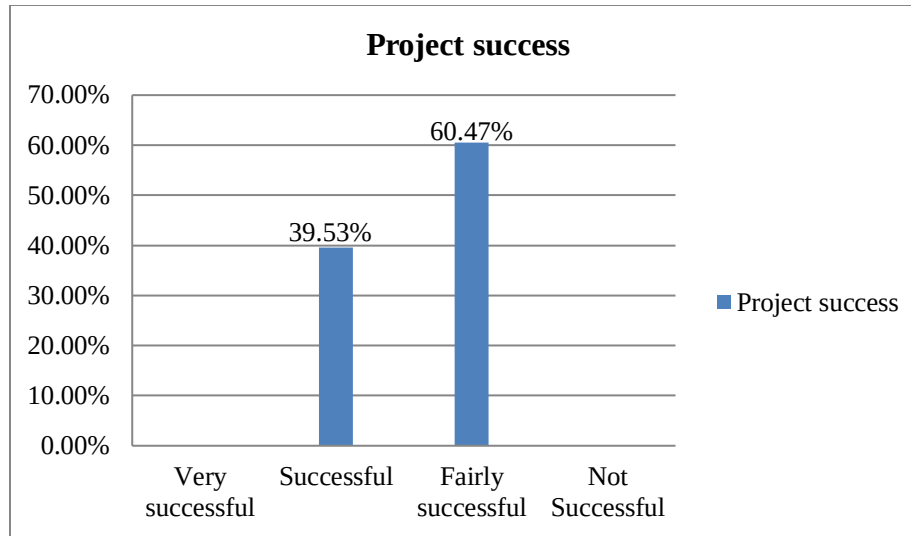


Figure 5: Project Success (Field survey, 2021)

4.5. Assessing the Project practice using the project management knowledge areas

The mean scores of the questions and responses of respondents under each knowledge area were used to determine the level of maturity in respect to each of the ten project management knowledge categories in the project Adwa Zero Kilometer Museum. Respondents were asked to rate the level of maturity of the project management knowledge areas their organization is practicing on the project. Mean values have been interpreted by adopting at scale as a criteria. By using a 5 Point Likert scale, respondents were asked to rate each level as follows: Level 1- very low maturity, Level -2 low maturity, Level- 3 Average maturity, Level- 4 Good Maturity, and Level- 5 Very good maturity. The respondent's responses were analyzed using mean scores to assess the project management maturity. The mean value indicates the level to which the respondents averagely agree or disagree with the statement. Accordingly, as the mean value is lower, maturity level is low, and as the mean value is higher, the maturity level is high.

Range of Mean Values	Level of Project Management Practice maturity
1.00– 1.49	Level 1
1.50 - 2.49	Level 2
2.50 – 3.49	Level 3
3.50 – 4.49	Level 4
4.50 – 5.00	Level 5

Table 7: Interpretation of percentage mean values (Moohammed, 2014)

4.1.1. Project Scope Management

Project Management	Scope	Level of maturity										Total No. of respondents		Average maturity level	
		5		4		3		2		1					
		N	%	n	%	n	%	n	%	n	%	n	%		
Plan management definition	scope	3	6.3	37	77.1	8	16.7					48	100	3.89	
Clear definition of requirements		4	8.3	33	68.8	11	22.9					48	100	3.85	
WBS was created		3	6.3	35	72.9	10	20.8					48	100	3.85	
Scope verification		1	2.1	35	72.9	12	25.0					48	100	3.77	
Controlling changes to project scope				32	66.7	16	33.3					48	100	3.66	
Average Project Scope Management Maturity Level															3.80

Table 8: Maturity level of Project Scope Management (Field survey, 2021)

Based on the table shown above 3 (6.3%) respondents agreed that plan scope management was defined with a very good level of maturity while 37 (77.1%) respondents answered that it was being applied on a good maturity level. Whereas 8 (16.7%) participants assumed that it was at an average level. The mean 3.80 indicates that it is at an approximately good level (Level 4).

4 (8.3%) participants responded that requirements are clearly defined at very good level of maturity while 33 (68.8%) respondents responded that it was defined at a good maturity level. Whereas 11 (22.9%) participants responded that it was at an average level. The mean 3.85 indicates that it is at an approximately good level (Level 4).

The other question put forward to the respondents was if WBS is created 3 (6.3%) participants responded that WBS was created at very good level of maturity while 35 (72.9%) respondents responded that it was at a good maturity level. Whereas 10 (20.8%) participants responded that it was at an average level. The mean 3.85 indicates that it is at an approximately good level (Level 4).

Participants were asked if scope is verified and 1 (2.1%) participant responded that scope was verified defined at very good level of maturity while 35 (72.9%) respondents responded that it was defined at a good maturity level. Whereas 12 (25.0%) participants responded that it was at an average level. The mean 3.77 indicates that it is at an approximately good level (Level 4).

Participants were also asked if changes to the project scope are controlled and 32 (66.7%) respondents responded that it was defined at a good maturity level. Whereas 16 (33.3%) participants responded that it

was at an average level. The mean 3.66 indicates that it is at an approximately good level. Compared to the other criteria control of change in scope is performed at a slightly lower level.

Scope management entails defining the specific work to be done. It also involves establishing a work breakdown structure, verifying the scope, and lastly controlling the scope. This activity ensures that all activities are tracked and that the planned and actual actions are compared. Over all the Average Project Scope Management Maturity Level (3.80) indicates that Project Scope Management is at a good maturity level. (Level 4) indicating that management is conscious of their roles and responsibilities, and their decision is based on efficiency, effectiveness evaluation, and based on previous data.

4.1.1. Project Time Management

Project Management	Time	Level of maturity										Total No. of respondents		Average maturity level
		5		4		3		2		1				
		n	%	n	%	n	%	n	%	n	%	n	%	
Time/schedule management plan development		2	4.2	33	68.8	13	27.1					48	100	3.77
Definition of activities	of			31	64.6	15	31.3	2	4.2			48	100	3.60
Sequencing of activities	of			24	50.0	21	43.8	3	6.3			48	100	3.43
Estimation of activity duration	of	2	4.2	23	47.9	19	39.6	4	8.3			48	100	3.47
Controlling changes to project schedule	to			14	29.2	24	50.0	10	20.8			48	100	3.08
Average Project Time Management Maturity Level														3.47

Table 9: Maturity level of Project Time Management (Field survey, 2021)

Based on the data shown above 2 (4.2%) respondents responded that Time/schedule management plan was developed with a very good level of maturity while 33 (68.8%) respondents answered that it was developed on a good maturity level. Whereas 13 (27.1%) participants answered that it was at an average level. The mean 3.77 indicates that it is at a approximately good level (Level 4).

31 (64.6%) respondents replied that Activities were defined at a good maturity level and 15 (31.3%) participants responded that it was at an average level. Whereas 2 (4.2%) respondents stated than activities were defined at a low level of maturity. The mean 3.60 indicates that it is at a good level (Level 4).

Respondents were also asked if activities were sequenced 24 (50.0%) respondents responded that it was created at a good maturity level. Whereas 21 (43.8%) participants responded that it was at an average

level. 3 (6.3%) respondents stated that activities were sequenced at a low level of maturity. The mean 3.43 indicates that it is at an average level (Level 3).

Participants were asked if Duration of activities was estimated and 2 (4.2%) participants responded that Duration of activities was estimated at very good level of maturity while 23 (47.9%) respondents answered that it was estimated at a good maturity level 19 (39.6%) participants responded that it was at an average level. While 4 (8.3%) respondents stated that Duration of activities was estimated at a low level of maturity. The mean 3.47 indicates that it is at an average level (Level 3).

Whether changes to the project schedule are controlled was another question for respondents. And 14 (29.2%) respondents responded that it was controlled at a good maturity level. Whereas 24 (50.0%) participants responded that it was at an average level. 10 (20.80%) respondents stated that changes to the project schedule are controlled at a low level of maturity. The mean 3.08 indicates control of schedule change is at an average level (Level 3).

We can observe that sequencing of activities and estimation of activity durations are performed at a lower than good level whereas control of schedule change is performed at an average level. The Overall average of Project Time Management Maturity Level (3.47) indicates that Project Time Management of the Adwa Zero Kilo Meter Museum project is at an average maturity level (Level 3).

This level indicates that Management involves in decision making, Official Project support office opened and staffed, Project management documentation is exercised but Informal project performance analysis while all standard process of project management exist.

4.1.2. Project Quality Management

Project Quality Management	Level of maturity										Total No. of respondents		Average maturity level
	5		4		3		2		1				
	n	%	n	%	n	%	n	%	n	%	n	%	
Quality standards identification	11	22.9	21	43.8	15	31.3	1	2.1			48	100	3.87
Quality standards review	8	16.7	24	50.0	16	33.3					48	100	3.83
Project performance evaluation	7	14.6	26	54.2	14	31.3					48	100	3.83
Monitoring of results	6	12.5	26	54.2	16	33.3					48	100	3.79
Average Project Quality Management Maturity Level													3.83

Table 10: Maturity level of Project Quality Management (Field Survey, 2021)

Based on the data shown above respondents were asked to rate the maturity level of Quality standards of the project identification 11 (22.9%) respondents replied that quality standards were identified at a very good maturity level and 21 (43.8%) participants responded that it was at an good maturity level. Whereas 15 (31.3%) respondents stated than activities were defined at an average level of maturity. 1 (2.1%) respondent replied that quality standards were identified at a low maturity level. The mean 3.87 indicates that quality standards of the project identification are executed at a good level of maturity (Level 4).

Respondents were asked to rate the maturity level of reviewing Quality standards of the project 8 (16.7%) participants responded that Quality standards of the project are reviewed at very good level of maturity, 24 (50%) respondents answered that it is on a good maturity level. Whereas 16 (33.3%) participants answered that it was at an average level. The mean 3.83 indicates that it is at a good level (Level 4).

Respondents were also asked to rate the maturity level of project performance evaluation 7 (14.6%) participants responded that project performance evaluation is done on a very good level of maturity, 26 (54.2%) respondents answered that it is on a good maturity level. While 16 (33.3%) participants answered that it was at an average level. The mean 3.83 indicates that project performance evaluation is at a good level of maturity (Level 4).

The last criteria under project performance evaluation was the maturity level of the reviewing of results and 6 (12.5%) participants responded that results are reviewed at a very good level of maturity while 26 (54.2%) respondents answered that it was reviewed at a good maturity level 16 (33.3%) participants responded that it was at an average level. 3.79 mean indicates that project performance evaluation is at a good level of maturity (Level 4).

The Overall average of Project Quality Management Maturity Level (3.83) indicates that Project Quality Management of the Adwa Zero Kilo Meter Museum project is at a good maturity level. (Level 4) The means of the above factors show that quality standards are identified and reviewed on regular basis. Also indicating that management is aware of their role and their decision is based on efficiency, effectiveness measurement and previous data. The project results are monitored to verify their compliance with the identified standards Although it has not reached at an expected level practice of project quality was identified and project quality management was practiced.

4.1.3. Project Cost Management

Project Cost Management	Level of maturity										Total No. of respondents		Average maturity level
	5		4		3		2		1				
	n	%	n	%	n	%	n	%	n	%	n	%	
The quantity of necessary resources determination	5	10.4	28	58.3	15	31.3					48	100	3.79
Cost plan definition	4	8.3	26	54.2	17	35.4	1	2.1			48	100	3.68
Project cost estimation	2	4.2	20	41.7	23	47.9	3	6.3			48	100	3.43
Required budget was determination	4	8.3	24	50.0	17	35.4	3	6.3			48	100	3.60
Controlling changes to the project budget			12	25.0	25	52.1	11	22.9			48	100	3.02
Average Project Cost Management Maturity Level													3.50

Table 11: Maturity level of Project Cost Management (Field Survey, 2021)

In order to assess the maturity level of project cost management, respondents were asked to rate the maturity level of determination of quantity of the necessary resources 5 (10.4%) respondents replied that necessary resources were determined at a very good maturity level and 28 (58.3%) participants responded that necessary resources were determined at a good maturity level. Whereas 15 (31.3%) respondents stated than activities were defined at an average level of maturity. The mean 3.79 indicates that determination of quantity of the necessary resources is at a good level of maturity (Level 4).

Respondents were also asked to rate the maturity level of cost plan definition 4 (8.3%) participants responded that cost plan of the project are defined at very good level of maturity, 26 (54.2%) respondents answered that it is on a good maturity level. Whereas 17 (35.4%) participants answered that it was at an average level. 1 (2.1%) respondent replied that cost plan was defined at a low maturity level. The mean 3.63 indicates that cost plan is defined at a good level (Level 4).

The next criteria is project cost estimation maturity level 2 (4.2%) participants responded that project performance evaluation is done on a very good level of maturity, 20 (41.2%) respondents answered that it is on a good maturity level. While 23 (47.9%) participants answered that it was at an average level. 3 (6.3%) respondents replied that cost estimation was done at a low maturity level. The mean 3.43 indicates that cost estimation is at an average level (Level 3).

Respondents were also asked to rate the maturity level of the required budget determination 4 (8.3%) participants responded that the required budget was determined at very good level of maturity, 24 (50.0%) respondents answered that it is on a good maturity level. Whereas 17 (35.4%) participants answered that it was at an average level. 3 (6.3%) respondent replied that cost plan was defined at a low maturity level. The mean 3.60 indicates that cost plan is defined at a good level (Level 4).

The last criteria under project cost evaluation was the maturity level of controlling changes in project budget and 12 (25.0%) respondents answered that changes in project budget are controlled at a good maturity level 25 (52.1%) participants responded that it was at an average level. 11 (22.9%) respondents replied that budget changes are controlled at a low maturity level. 3.02 mean indicates that changes in project budget are controlled is at an average level (Level 3).

The Overall average of Project Cost Management Maturity Level (3.50) indicates that Project Cost Management of the Adwa Zero Kilo Meter Museum project is at an average maturity level. Respondents agree that the factors of the cost plan management were practiced in the project at a level 4 maturity, while project cost estimation, which has a mean value of 3.43 and shows the budget was estimated but not to the full level. The factor with the least mean value of 3.02 is project cost management is changes to the project budget, which as respondents would agree is not controlled to the required level.

4.1.4. Project Risk Management

Project Risk Management	Level of maturity										Total No. of respondents		Average maturity level
	5		4		3		2		1				
	n	%	n	%	n	%	n	%	n	%	n	%	
Risk management plan development			16	33.3	19	39.6	12	25.0	1	2.1	48	100	3.04
Risks identification and registration			5	10.4	27	56.3	15	31.3	1	2.1	48	100	2.75
Risks prioritization			5	10.4	23	47.9	19	39.6	1	2.1	48	100	2.67
Risk response plan development			6	12.5	23	47.9	17	35.4	2	4.2	48	100	2.68
Monitoring and controlling Identified risks			4	8.3	24	50.0	17	35.4	3	6.3	48	100	2.60
Average Project Risk Management Maturity Level													2.74

Table 12: Maturity level of Project Risk Management (Field Survey, 2021)

Project risk management scored the lowest mean out of the ten project management knowledge areas. Based on the data shown above respondents were asked to rate the maturity level of Risk management plan development 16 (33.3%) participants responded that plan was developed at a good maturity level. Whereas 19 (39.6%) respondents stated it was developed average level of maturity. 12 (25.0%) respondent replied that it was developed at a low maturity level. Whereas 1 (2.1%) respondents replied that it was developed at a very low maturity level. The mean 3.04 indicates that risk management plan was developed at an average level of maturity (Level 3).

Respondents were asked to rate the maturity level of risks identification and registration 5 (10.4%) participants responded that risks identification and registration is at a good maturity level. Whereas 27 (56.3%) respondents stated it is at an average level of maturity. 15 (31.3%) it is at a low maturity level. And 1 (2.1%) respondents replied that risks identification and registration is at a very low maturity level. The mean 2.75 indicates that risk management plan was developed at an average level of maturity (Level 3) but it is close to a low level of maturity.

Respondents were also asked to rate the maturity level of Risks prioritization 5 (10.4%) participants responded that risks prioritization is at a good maturity level while 23 (47.9%) respondents stated it is at an average level of maturity. 19 (39.6%) respondents replied that risks prioritization is at a low maturity level. And 1 (2.1%) respondents replied that risks prioritization is at a very low maturity level. The mean 2.67 indicates that risk management plan was developed at a close proximity to low level of maturity.

Participants were also asked to rate the maturity level of Risk response plan development 6 (12.5%) participants responded that risk response plan development is at a good maturity level while 23 (47.9%) respondents stated it is at an average level of maturity. 17 (35.4%) respondents replied that it is at a low maturity level. And 2 (4.2%) respondents replied that it is at a very low maturity level. The mean 2.68 indicates that risk management plan was developed at an average level of maturity (Level 3). But the number 2.58 is awfully close to the rating of low maturity level.

Lastly, respondents were also asked to rate the maturity level of monitoring and controlling Identified risks 4 (8.3%) participants responded that it is at a good maturity level while 24 (50.0%) respondents stated monitoring and controlling Identified risks is at an average level of maturity. 17 (35.4%) respondents replied that it is at a low maturity level. And 3 (6.3%) respondents replied that monitoring and controlling identified risks is at a very low maturity level. The mean 2.60 indicates that risk management plan was developed at a close proximity to low level of maturity.

The aim of risk management is to anticipate potential risks and address them according to a priority system depending on their severity. It also necessitates keeping track of all negative events in order to mitigate future dangers. Risk management also entails information of a company's strengths, weaknesses, opportunities, and dangers so that management is aware of their position and what they can do about it. The mean of each factors, as well as the average mean (2.74) of the elements, are clearly below average. This indicates that the project has not implemented project risk management in the manner in which projects are required to do so.

4.1.5. Project Integration Management

Project Management	Integration	Level of maturity										Total No. of respondents		Average maturity level
		5		4		3		2		1				
		n	%	n	%	n	%	n	%	n	%	n	%	
Development of project plan				17	35.4	25	52.1	6	12.5			48	100	3.22
Management of project work				12	25.0	24	50.0	12	25.0			48	100	3.00
Monitoring and control of project work				8	16.7	25	52.1	15	31.3			48	100	2.85
Effective project activities coordination				3	6.3	26	54.2	17	35.4	2	4.2	48	100	2.62
Average Project Integration Management Maturity Level														2.92

Table 13: Maturity level of Project Integration Management (Field Survey, 2021)

Based on the table shown above 17 (35.4%) respondents agreed that Development of project plan was done a good level of maturity while 25 (52.1%) respondents answered that it was developed at an average maturity level. 6 (12.5%) participants answered that project plan was developed at a low level. The mean 3.22 indicates that project plan was developed at an average level (Level 3).

12 (25.0%) respondents ranked the maturity level of Management of project work at a good level of maturity while 24 (50.0%) respondents answered that Management of project work was at an average maturity level. 12 (31.3%) participants rated it at a low level. The mean 3.00 indicates that management of project work is at an average level (Level 3).

Monitoring and control of project work was the other question put forward to the respondents 8 (16.7%) participants responded that monitoring and control of project work was at good level of maturity while 25 (52.1%) respondents responded that monitoring and control of project work was at an average maturity level. 15 (31.3%) participants responded that it was at a low level of maturity. The mean 2.85 indicates that it is at an average level with a close proximity to low level maturity.

Effective coordination of project activities was the final criteria put forward to the respondents 3 (6.3%) participants rated effective coordination of project activities at good level of maturity while 26 (54.2%) respondents rated it at an average maturity level. 17 (35.4%) participants responded that it was at a low level of maturity. The mean 2.62 indicates that effective coordination of project activities is at an average level with a close proximity to low level maturity.

Project management is connected with other business operations at this level. PM is viewed as a success element by senior management. PM has a standard procedure. PM is also documented in a formal manner.

Integration management is all about unification, consolidation, communication, and interdependence of PM processes, according to the PM body of knowledge guide. The Overall average of Project Integration Management Maturity Level (2.92) indicates that Project integration Management of the Adwa Zero Kilo Meter Museum project is at a low average maturity level. This shows that project offices focus on practicing individual activities rather than integrating them together.

4.1.6. Project Stakeholder Management

Project Stakeholder Management	Level of maturity										Total No. of respondents		Average maturity level
	5		4		3		2		1				
	n	%	n	%	n	%	n	%	n	%	n	%	
Identification of project stakeholders			23	47.9	22	45.8	3	6.3			48	100	3.41
Stakeholder management			12	25.0	26	54.2	10	20.8			48	100	3.07
communication between stakeholders			7	14.6	31	64.6	10	20.8			48	100	2.93
Controlling Stakeholder engagement			6	12.5	30	62.5	12	25.0			48	100	2.87
Review of Project progress with client			11	22.9	25	52.1	12	25.0			48	100	2.97
Average Project Stakeholder Management Maturity Level													3.05

Table 14: Maturity level of Project Stakeholder Management (Field Survey, 2021)

Based on the table shown above 23 (47.9%) respondents agreed that Identification of project stakeholders was done a good level of maturity while 22 (45.8%) respondents answered that project stakeholder identification was at an average maturity level. 3 (6.3%) participants answered that project stakeholder identification was at a low level. The mean 3.41 indicates that Identification of project stakeholders was at an average level (Level 3).

12 (25.0%) respondents ranked the maturity level of Stakeholder management at a good level of maturity while 26 (54.2%) respondents answered that Stakeholder management was at an average maturity level. 10 (20.8%) participants rated it at a low level. The mean 3.07 indicates that Stakeholder management is at a low average level (Level 3).

Communication between stakeholders was the other criteria put forward to the respondents 7 (14.6%) participants responded that communication between stakeholders was at good level of maturity while the majority 31 (64.6%) respondents replied that communication between stakeholders was at an average

maturity level. 10 (20.8%) participants responded that it was at a low level of maturity. The mean 2.93 indicates that it is at an average level with a close proximity to low level maturity.

Controlling Stakeholder engagement was another criteria put forward to the respondents 6 (12.5%) participants rated Controlling Stakeholder engagement at good level of maturity while 30 (62.5%) respondents rated it at an average maturity level. 12 (25.0%) participants responded that it was at a low level of maturity. The mean 2.87 indicates that controlling Stakeholder engagement is at an average level with a close proximity to low level maturity.

Review of Project progress with client was the final criteria put forward to the respondents 11 (22.9%) participants rated review of project progress with client at good level of maturity while 25 (52.1%) respondents rated it at an average maturity level. 12 (25.0%) participants responded that it was at a low level of maturity. The mean 2.97 indicates that review of project progress with client is at an average level.

The Overall average of Project Stakeholder Management Maturity Level (3.0) indicates that Project Stakeholder Management of the Adwa Zero Kilo Meter Museum project is at an average maturity level. All involved parties (client, consultant and contractor and government) have their own organizational culture, communication practices and several other factors that need to follow certain standards in order to work in collaboration.

4.1.7. Project Human Resources Management

Table 15: Maturity level of Project Human Resource Management (Field Survey, 2021)

Project Resource Management	Human	Level of maturity										Total No. of respondents		Average maturity level
		5		4		3		2		1				
		n	%	n	%	n	%	n	%	n	%	n	%	
Identification of project roles, responsibilities and required skill	of	8	16.7	29	60.4	11	22.9					48	100	3.93
Clarity of organizational chart and position descriptions	of	7	14.6	27	56.3	14	29.2					48	100	3.85
Availability and assigning of human resource	and	7	14.6	27	56.3	14	29.2					48	100	3.85
Development of project team	of	6	12.5	31	64.6	11	22.9					48	100	3.89
Management and control of project team	and	4	8.3	30	62.5	14	29.2					48	100	3.79
Average Project Human Resource Management Maturity Level														3.86

Based on the table shown above 8 (16.7%) respondents agreed that Identification of project roles, responsibilities and required skill was done a very good level of maturity while 29 (60.4%) respondents answered that Identification of project roles, responsibilities and required skill was at a good maturity level. 11 (22.9%) participants answered that project stakeholder identification was at an average level. The mean 3.93 indicates that Identification of project roles, responsibilities and required skill was at a good level (Level 4).

7 (14.6%) respondents ranked the maturity level of Clarity of organizational chart and position descriptions at a very good level of maturity while 27 (56.3%) respondents answered that Clarity of organizational chart and position descriptions was at a good maturity level. 14 (29.2%) participants rated it at an average level. The mean 3.85 indicates that Clarity of organizational chart and position descriptions is at a good level (Level 4).

Availability and assigning of human resource was the other criteria put forward to the respondents 7 (14.6%) participants responded that Availability and assigning of human resource was at a very good level of maturity while the majority 27 (56.3%) respondents replied that Availability and assigning of human resource was at a good maturity level. 14 (29.2%) participants responded that it was at an average level of maturity. The mean 3.85 indicates that it is at a good level maturity.

Development of project team was another criteria put forward to the respondents 6 (12.5%) participants rated Development of project team at a very good level of maturity while 31 (64.6%) respondents rated it at a good maturity level. 11 (22.9%) participants responded that it was at an average level of maturity. The mean 3.89 indicates that Development of project team is at a good level maturity.

Management and control of project team was the final criteria put forward to the respondents 4 (8.3%) participants rated review of Management and control of project team at a very good level of maturity while 30 (62.5%) respondents rated it at a good maturity level. 14 (29.2%) participants responded that it was at an average level of maturity. The mean 3.79 indicates that Management and control of project team is at a good level of maturity.

The average mean of the factors, 3.86 which indicates Adwa Zero Kilo Meter Museum project is in a good position regardless of the difficulty in managing and controlling the project team. We can gather that requirements, constraints and specific schedule dates of the project were clearly identified to all team members; however, since the project teams lack knowledge about project management, most practices they perform are traditional.

4.1.8. Project Communication Management

Table 16: Maturity level of Project Communication Management (Field Survey, 2021)

Project Communication Management		Level of maturity										Total No. of respondents		Average maturity level
		5		4		3		2		1				
		n	%	n	%	n	%	n	%	n	%	n	%	
Determination of needed Information and communication			14	29.2	24	50.0	8	16.7	2	4.2	48	100	3.04	
Availability of Needed information to stakeholders			9	18.8	24	50.0	15	31.3			48	100	2.87	
Collection and dissemination of performance information			9	18.8	25	52.1	12	25.0	2	4.2	48	100	2.85	
Generating, gathering, and disseminating information in phases			9	18.8	26	54.2	12	25.0	1	2.1	48	100	2.89	
Communication control			6	23	22	47.9	17	35.4	2	4.2	48	100	2.68	
Average Project Communication Management Maturity Level		2.86												

Based on the table shown above 14 (29.2%) respondents agreed that Determination of needed Information and communication was done a good level of maturity while 24 (50.0%) respondents answered that it was at an average maturity level. 8 (16.7%) participants answered that it was at a low level. While 2 (4.2%) participants rated at a very low level of maturity. The mean 3.04 indicates that Determination of needed Information and communication is at an average level.

9 (18.8%) respondents ranked the maturity level of Availability of Needed information to Stakeholders at a good level of maturity while 24 (50.0%) respondents answered that it was at an average maturity level. 15 (31.3%) participants rated it at a low level. The mean 2.87 indicates that Availability of Needed information to Stakeholders is at a lower average level of maturity.

Collection and dissemination of performance information was the other criteria put forward to the respondents 9 (18.8%) participants responded that it was at a good level of maturity while the 25 (52.1%) respondents replied that it was at an average maturity level. 12 (25.0%) participants responded that it was at a low level of maturity. While 2 (4.2%) participants rated at a very low level of maturity. The mean

2.85 indicates that Collection and dissemination of performance information is at a lower average level of maturity.

9 (18.8%) respondents ranked the maturity level of Generating, gathering, and disseminating information in phases at a good level of maturity while 26 (54.2%) respondents answered that it was at an average maturity level. 12 (25.0%) participants rated it at a low level. While 1 (2.1%) participant rated at a very low level of maturity. The mean 2.89 indicates that generating, gathering, and disseminating information in phases is at a low average level of maturity

6 (12.5%) respondents ranked the maturity level of Communication control at a good level of maturity while 23 (47.9%) respondents answered that it was at an average maturity level. 17 (35.4%) participants rated it at a low level. While 2 (4.2%) participants rated at a very low level of maturity. The mean 2.68 indicates that Communication control is at an approximately low level of maturity.

The Overall average of Project Communication Management Maturity Level (2.86) indicates that Project Communication Management of the Adwa Zero Kilo Meter Museum project is at an average maturity level but with a close proximity to a low level. Despite the fact there are structured processes informal procedures are used for communication. Manual data collection and tracking of activities takes place hence making it difficult to communicate regularly.

4.1.9. Project Procurement Management

Project Procurement Management	Level of maturity										Total No. of respondents		Average maturity level
	5		4		3		2		1				
	n	%	n	%	n	%	n	%	n	%	n	%	
Determination of needed Resources	6	12.5	29	60.4	13	27.1					48	100	3.85
Documentation of required materials	3	6.3	26	54.2	19	36.9					48	100	3.66
Identification of Potential sources	3	6.3	26	54.2	19	36.9					48	100	3.66
Obtaining of appropriate quotations, bid, offers	1	2.1	18	37.5	29	60.4					48	100	3.41
Choosing from among potential sellers	2	4.2	22	45.8	24	50.0					48	100	3.54
Managing r/ship with the seller	2	4.2	23	47.9	23	47.9					48	100	3.56
Proper	4	8.3	28	58.3	16	33.3					48	100	3.75

completion and settlement of Contract	
Average Project Procurement Management Maturity Level	3.63

Table 17: Maturity level of Project Procurement Management (Field Survey, 2021)

6 (12.5%) respondents rated the Determination of needed Resources at a very good level of maturity while 29 (60.4%) respondents rated it at a good maturity level. 13 (27.1%) participants answered that Determination of needed Resources was at an average level. The mean 3.85 indicates that Determination of needed resources is at a good level (Level 4).

3 (6.3%) respondents ranked the maturity level of Documentation of required materials and Identification of Potential sources at a very good level of maturity while 26 (54.2%) respondents answered that both are at a good maturity level. 19 (36.9%) participants rated both at an average level. The mean 3.66 indicates that Documentation of required materials and Identification of Potential sources are at a good level (Level 4).

Obtaining of appropriate quotations, bid, offers was the other criteria put forward to the respondents 1 (2.1%) participant responded that it was at a very good level of maturity while 18 (37.5%) respondents replied that it was at a good maturity level. 29 (60.4%) participants responded that it was at an average level of maturity. The mean 3.41 indicates that Obtaining of appropriate quotations, bid, offers is done at a good level maturity.

Choosing from among potential sellers was rated by respondents as 2 (4.2%) participants rated it at a very good level of maturity while 22 (45.8%) respondents rated it at a good maturity level. 24 (50.0%) participants responded that it was at an average level of maturity. The mean 3.54 indicates that Choosing from among potential sellers is done at a good level maturity.

The relationship with the seller was managed was rated by respondents as 2 (4.2%) participants rated it at a very good level of maturity while 23 (47.9%) respondents rated it at a good maturity level. 23 (47.9%) participants responded that it was at an average level of maturity. The mean 3.56 indicates that The relationship with the seller was managed at a good level maturity.

Proper completion and settlement of contract was rated by respondents as 4 (8.3%) participants rated it at a very good level of maturity while 28 (58.3%) respondents rated it at a good maturity level. 16 (33.3%) participants responded that it was at an average level of maturity. The mean 3.75 indicates that proper completion and settlement of contract was done at a good level maturity.

Nearly all of the factors under project procurement management practice show a positive response from the respondents with a mean value of 3.63. This result implies that more attention was given to project procurement management during the implementation of the project.

4.6. Results and Discussion

The table below illustrates the overall project management practice maturity level of the project

Project Management Practices	Mean of maturity levels
Project Scope Management	3.80
Project Time Management	3.47
Project Quality Management	3.83
Project Cost Management	3.50
Project Risk Management	2.74
Project Integration Management	2.92
Project Stakeholder Management	3.05
Project Human Resources Management	3.86
Project Communication Management	2.86
Project Procurement Management	3.63
Total Average of Mean Values	3.36

Table 18: Project Practices Maturity (Field survey, 2021)

According to the findings above, we can say that project management practices within Adwa Zero Kilometer Museum project are at average maturity level. The results show that the knowledge areas, Project Scope Management, Project Quality Management, Project Human Resource Management and Project Cost Management are performed at a good maturity level (Level 4) and Project Stakeholder Management are implemented at an average level of maturity. Even though Project Risk Management, Project Integration Management and Project Communication Management are also ranked in average maturity level their mean scores are at a close proximity with low level of maturity.

Project risk management is the factor at the lowest rank with a low mean value of 2.74. The results of this study found significant relationship between project success and the use of project risk management, but risk management practice came as the last rank among project management practices. These results reveal that PMs and contracting companies pay less attention to risk management than to the other factors. The more effective use of risk management tools, the lower chances of project failure and higher chance of success. In other words, the more successful project, the more use of risk management (Vitner, Rozenes, and Spragget, 2005).

Communication management is of great importance and contributes to project success (Kerzner, 2017). Effective communication management within construction project teams therefore has a paramount importance; ensuring that all team members are in contact helps to achieve the objectives of the project. The involvement of several stakeholders makes the communication process a bit difficult unless a systematic approach is used. The results demonstrated that there is a Project communication management is at a low maturity level in the Adwa Zero Kilometer Museum Project. The implication of this is that all involved stakeholders especially PMs should, put additional effort into ensuring that there is an efficient communication system within the project, and that there is also a good communication link to the stakeholders.

Project Stakeholder Management also ranked low based on the results above. Key stakeholders in the project are Contractor, consultant, client (government). In addition, for an effective stakeholder management workers and employees are also considered as stakeholders. The results of the study demonstrate a significant relationship between project stakeholder management and perceived project success. Despite this relationship, stakeholder management was ranked as the eighth level with a low mean value of 3.05.

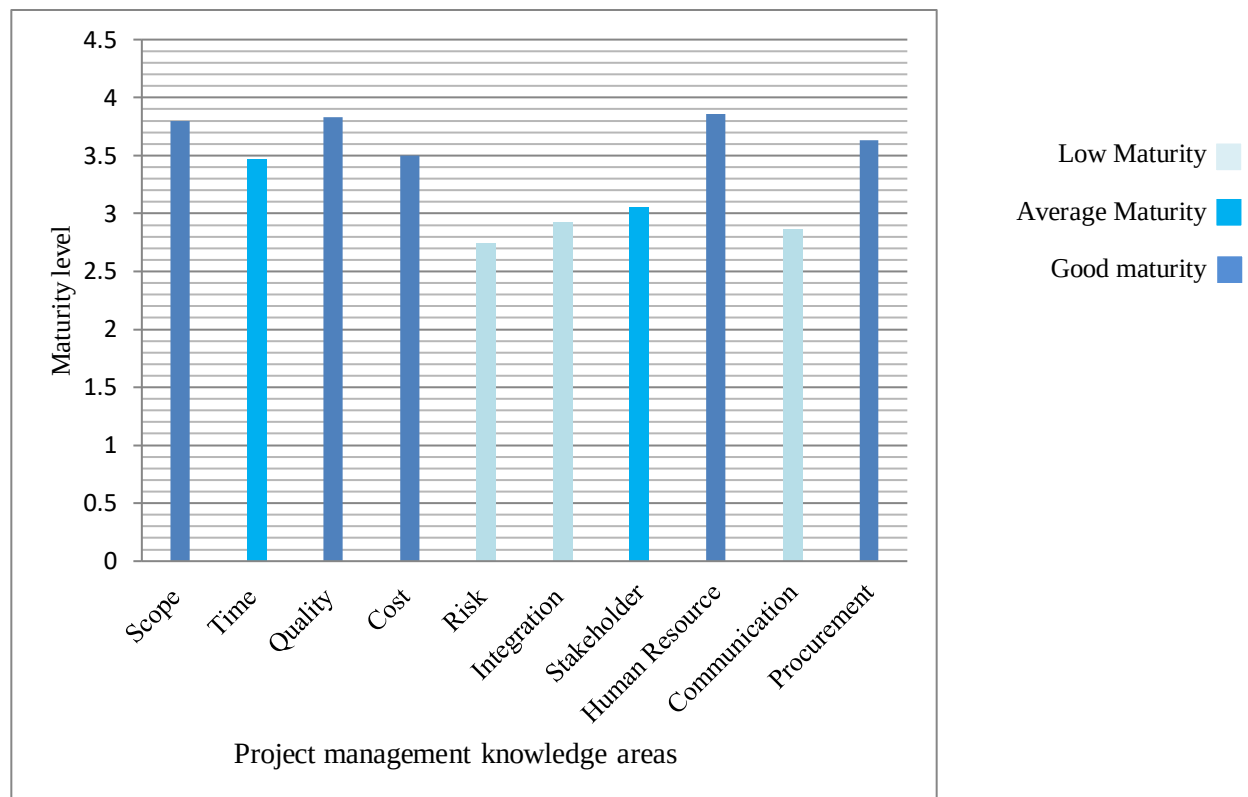


Figure 6: Maturity Levels (Field Survey, 2021)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The major findings of the data analysis are summarized in this chapter. Based on the data, conclusions on Adwa Zero Kilometer Museum's project management practices will be produced. Recommendations are made to improve project management practices. The researcher's suggestions for future investigations are also mentioned.

5.2. Summary of Major Findings

The study reveals that the project management maturity of the Adwa Zero Kilometer Museum's project is currently at level 3 which implies that relatively most processes used are standard for all projects and lack integration with corporate process, Management has institutionalized rather than an organizational entity view, there is more of an Informal analysis of project performance and Estimates, schedules may be based on industry standards rather than based on organization specifics.

Only one (ECDSWC) of the three stakeholders has a training department that provides project management training at least once a year. Based on the data from respondents only 18.75% have taken project management trainings and most of them are short term trainings. The absence of project management graduates, the limited training opportunities in project management for existing project team members, are some of the project management weaknesses identified.

Regarding major challenges of the project, the data identified the problems of the project to be both internal and external. Internal challenges include a lack of clarity in the project's scope, as well as time, money, and quality; external challenges include government difficulties, which the project faces.

The assessment of the project management practices in Adwa Zero Kilometer Museum's project revealed that Project Human Resource Management, Project Scope Management, Project Quality Management, Project Procurement Management knowledge areas are practiced at a good level of maturity. And Project Cost Management, Project Time Management, Project Stakeholder Management Knowledge areas are practiced at an average level of maturity. In contrast, Project Risk Management, Project Integration Management, Project Communication Management are practiced at a low maturity level. Accordingly, Project Human Resource Management has the highest maturity score while Project Risk Management has the lowest.

According to the response of the participants on questions related to the maturity level of project risk management practice of the project, it was revealed that even though there are policies and guidelines developed as a risk management plan at the beginning of the project processes such as risks identification and registration, risks prioritization, risk response plan development have been executed with poor performance which in turn has made the process of monitoring and controlling identified risks difficult to perform.

The cumulative maturity level of project communication management is level 3 but with lower mean scores which indicates that there is establishment of a basic communications management process in the project office. Management recognizes the need of frequent project communication in order to have the knowledge needed to make sound choices, and thus encourages the collecting of project status data. The focus of communications for the triple constraint items is on summary status and progress reports (scope- schedule-cost). The results also show Projects Communication management in the project lacks Integration of PMs with other stakeholders and Availability of Needed information to stakeholders as well as Collection and dissemination of performance information and Generating, gathering, and disseminating information in phases are performed with low coordination hence making control of communication rather difficult to accomplish.

The result of the study shows that the project integration management maturity level of the project office is level 3 but with lower mean scores which is indicates the existence of structured processes and standards, basic, documented processes in place for developing project plans and integrating, analyzing, and developing the reports on work results. In addition summary-level information is consolidated into reports lacking necessary details that require attention. Although the processes are in place, they are not considered at the required standard and lack incorporation of all involved aspects.

5.3. Conclusion

According to the theoretical and empirical literature evaluations conducted for this study, project management maturity and project success are significantly associated. The level of project management practice maturity is assessed by completing an adequate evaluation on the ten project management knowledge areas using project management maturity models.

Accordingly, this study evaluated the Adwa Zero Kilometer Museum Project's project management maturity level in terms of the implementation of the project management ten knowledge areas. The following conclusion was formed after analyzing the findings.

The projects management practices and processes of Adwa Zero Kilometer Museum Project is currently at level 3 which implies that relatively most processes used are standard for all projects and lack integration with corporate process, Management has institutionalized rather than an organizational entity view, there is more of an Informal analysis of project performance and Estimates, schedules may be based on industry standards rather than based on organization specifics. The study's findings show that project risk management, project integration management, and project communication management maturity are all at low levels, indicating the probability of cost and schedule overruns, as well as failure to meet project objectives.

Project integration management has a low maturity level, which makes it difficult to allocate resources fairly, balance demands, apply existing knowledge, adapt organizational processes and standards to meet specific project objectives, and manage interdependencies among project management knowledge areas. If effective risk identification and detailed analysis is not undertaken, and preventative management methods are not established in advance, unforeseen occurrences have an influence on the degree of achievement of project objectives and goals.

According to the study's findings, other knowledge areas such as project scope management, project cost management, project resource management, and project procurement management have basic, established

processes in place. The processes, however, are not considered organizational norms due to the project's vast scope. Moreover, throughout the project's execution, activities connected to project risk, communication, and integration management need to be given additional attention.

In general, the lack of skilled project management professionals and sustainable training facilities the project demonstrates the existence of difficulties related to of project management disciplines and practices, which creates a gap on the project's success reliability.

5.4. Recommendations

Despite the fact that there have been disagreements over whether project management maturity can lead to project success on its own, several theories and empirical evidences have demonstrated a favorable association between project management maturity and project success. As studied in the theoretical review companies improving their project management practice maturity enables them to experience considerable improvements in aligning projects with company goals, lowering the percentage of failed projects, and delivering projects on time within a desired budget.

With this in mind, the research study is anticipated to analyze the Adwa Zero Kilometer Museum Project's project management maturity level, identify strengths and shortcomings, and make recommendations for development. Accordingly, the result of the project management maturity of the project is at an average (level 3) which implies relatively most processes used are standard for all projects and lack integration with corporate process, Management has institutionalized rather than an organizational entity view, there is more of an Informal analysis of project performance and Estimates, schedules may be based on industry standards rather than based on organization specifics.

Hence based on the information gained the project management needs to improve project team members to be adequately equipped with theoretical and practical knowledge of project management besides the detail technical and functional knowledge and skills of each project's deliverables.

When it comes to project risk management, it is well understood that projects are inherently unpredictable due to their purpose of creating a unique product or service. As a result, project risk management should be prioritized by identifying, registering, and prioritizing hazards and their impact on the project, as well as developing risk response plans and risk management plans to monitor and control the identified risks. The identified risks should be qualitatively and quantitatively measured or analyzed. Risks should be integrated with project constraints (time, cost, scope) and objectives of the project as a whole.

The research paper proposes that project success depends on communication-management factors to enhance communication effectiveness for project success. The study suggests that: Proper technology and systems; communication skills or competence; teamwork and collaboration, clear organizational structures; an understanding of stakeholders' frame of reference; project briefing; and understanding the context of the environment are all contributing factors to the effectiveness of communication

management for successful project delivery. Project communication should be planned and updated. Communication should be automated and information should be available through this system to all project members. In addition both downward and upward communication needs to be given respectable

attention to obtain feedback from their employees such that the upward flow of information has become a major concern in large companies.

Project integration management is one of the knowledge areas that require a great amount of attention in the project. Effective coordination of project activities plays a major role in smoothing out the project flow. The current level of maturity of Project integration management indicated that There are basic, documented processes in place for developing project plans and integrating, analyzing, and developing the reports on work results. Summary-level information is consolidated into reports. Although the processes are in place, they are not considered an organizational standard. Management supports the efforts and is involved with large, highly visible projects. As a result, the project management team must revise the project management plan, which will include other management plans such as scope management, cost management, quality management, process improvement, human resource management, communication management, procurement management, and stakeholder management. Considering stakeholders engagement as integral part of the project management, setting standard engagement mechanisms for all projects is also important.

The ten project management knowledge areas are interdependent on one another. A cumulative effort in the application of all knowledge areas is required to reach a given maturity level. Thus, it is recommended to maintain an above average rate of levels across the various knowledge areas for the successful completion of the project. Furthermore, equipping the project management professionals is necessary and project team members must get constant training in project management knowledge areas and their implementation. It is also necessary to encourage continuous development based on lessons learnt. In addition, improving management oversight, integrating project management processes, ensuring the establishment of effective risk management standards and participating key stakeholders during planning and necessary phases, collecting and compiling project data for future reference and for distributing lesson learned and an all-inclusive monitoring and evaluation system are necessary have been recommended.

5.5. Suggestions for Future Research

The study revealed that the project has visible limitations in areas of risk, communication and Integration management requirements. More studies are recommended on the implication of these factors. Furthermore, because project management in Ethiopia is still in its infancy, it is recommended that that a more thorough investigation may be carried out by integrating several projects to assess their project management and practices maturity.

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APPENDIX A

QUESRIONNAIRE



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE
MASTER OF PROJECT MANAGEMENT PROGRAM

Dear respected respondents:

This questionnaire is conducted to collect data for a research on: Assessing Project Management Practices: A Case of Government Initiated Mega Projects in Addis Ababa (Adwa Zero Kilometer Museum Project). The information will be utilized as primary data for this study, with the belief that your candid and real comments will greatly improve the quality of the study's findings. The researcher would want you to please complete this questionnaire as completely as possible, since the responses you provide will be kept secret and utilized solely for the research project at hand.

Thank you in advance for taking part in this endeavor.

Kind Regards,

Yordanos Tesfaye

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Email: yordanostesfaye68@gmail.com

Part 1: General background of respondents

1. Gender

Male ☐ Female ☐

2. Age

Before 30 ☐ 41-50 ☐
31-40 ☐ Above 50 ☐

3. Education Level

High School ☐ MA/ MSc ☐
Diploma ☐ PHD ☐
BA/ BSc ☐

4. Field of Specialization _____

5. Position on the project

Project manager ☐ Resident Engineer ☐

Project coordinator ☐ Support staff ☐

Project member ☐

6. Experience (in years)

3-5 ☐ 5-10 ☐ 11-15 ☐ more than 15 ☐

7. Have you ever received project management education or training?

Yes ☐ No ☐

8. If yes, what is the duration of the education or training (in years)? _____

Part 2: Project related issues

1. Is there a project management department within your company?

Yes ☐

No ☐

2. What are the major challenges of the project

Internal challenges	External challenges
Lack of clarity in scope ☐	Organizational culture ☐
Schedule, budget and quality ☐	Government ☐
Resources ☐	Environmental factors ☐
Policies and procedures ☐	

3. Is there access to project management training in your organization?

Yes ☐

No ☐

4. If yes, How often?

Monthly ☐

Quarterly ☐

Semiannually ☐

Yearly ☐

Once ☐

5. How would you rate the status of the project in terms of success

Not successful ☐

Fairly successful ☐

Successful ☐

Very successful ☐

Part III: Questions pertaining to the Project Management Body of Knowledge's ten Knowledge Areas of Project Management (PMBOK)

Please indicate to what extent you believe the following characteristics stated under each project management knowledge area are being practiced in the Adwa Zero Kilometer museum project based on your experience with project management in your organization.

(5= Level 5, 4= Level 4, 3= Level 3, 2= Level 2, 1= Level 1)

Description/characteristics of each maturity level

Level 1: Initial Process

- Ad hoc processes
- Management awareness

Level 2: Structured Process and Standards

- Basic processes; not standard on all projects; used on large, highly visible project
- Management supports and encourages use
- Mix of intermediate and summary-level information
- Estimates, schedules based on expert knowledge and generic tools
- Mostly a project-centric focus

Level 3: Organizational Standards and Institutionalized Process

- All processes, standard for all projects, repeatable
- Management has institutionalized processes
- Summary and detailed information
- Baseline and informal collection of actuals
- Estimates, schedules may be based on industry standards and organizational specifics
- More of an organizational focus
- Informal analysis of project performance

Level 4: Managed process

- Processes integrated with corporate processes
- Management mandates compliance
- Management takes an organizational entity view
- Solid analysis of project performance
- Estimates, schedules are normally based on organization specifics
- Management uses data to make decisions specifics

Level 5: Optimizing Process

- Processes to measure project effectiveness and efficiency
- Processes in place to improve project performance
- Management focuses on continuous improvement

No.	Project Scope Management	5	4	3	2	1
1	Definition of plan scope management					
2	Clear definition of requirements from the beginning					
3	Creation of WBS					
4	Verification of scope					
5	Controlling project scope change					
Project Time Management						
1	Development of time/ schedule management plan					
2	Definition of activities					
3	Sequencing of Activities					
4	Estimation of activity durations					
5	Controlling project schedule changes					
Project Quality Management						
1	Identification of quality standards					
2	Review of quality standards					
3	Regular evaluation of project performance					
4	Checking and monitoring results to comply with quality standards					
5	Controlling project quality changes					
Project Cost Management						
1	Definition of cost plan					
2	Project cost estimation					
3	Required budget determination					
4	Controlling project budget changes					
Project Risk Management						
1	Development of risk plan					
2	Identification and registration of risks					
3	Prioritization of risks and estimation of implications					
4	Development of risk response plan					
5	Control of identified risks					
Project Integration management						
1	Development of project plan					
2	Management of project work					
3	Monitoring and control of project work					
4	Effective coordination of project activities					
Project Stakeholder Management						
1	Identification of project stakeholders					
2	Definition of stakeholder management plan					
3	Effectiveness of communication between stakeholders					
4	Control of stakeholder engagement					
5	Frequent revision of project progress with stakeholders					
Project Human Resource Management						
1	Identification of roles, responsibilities and required skills					
2	Clear description of positions					
3	Availability and assigning of human resource					
4	Development of project team					
5	Control and management of project team					
Project Communication Management						
1	Determination of needed information and communication					

2	Availability of needed information to project stakeholders					
3	Collection and dissemination of performance information					
4	Generating, gathering and disseminating information					
5	Communication Control					
Project Procurement Management						
1	Determination of Needed resources					
2	Documentation of requirements					
3	Identification of potential sources					
4	Appropriateness of obtaining quotations, bid, offers or proposal					
5	Choosing among potential suppliers					
6	Management of relationship with suppliers					
7	Proper completion and settlement of contract					

If you have any additional opinions:

*****Thank You for your time*****

APPENDIX B

RELIABILITY TEST TABLES

Reliability Test Tables for questions based on the ten project management knowledge areas:

▪ **Project Scope Management Reliability Test**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.794	.795	5

▪ **Project Time Management Reliability Test**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.741	.744	5

▪ **Project Quality Management Reliability Test**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.748	.753	4

▪ **Project Cost Management Reliability Test**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.807	.807	5

- **Project Risk Management Reliability Test**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.819	.824	5

- **Project Integration Management Reliability Test**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.838	.837	4

- **Project Stakeholder Management Reliability Test**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.723	.727	5

- **Project Human Resources Management Reliability Test**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.795	.794	5

- **Project Communication Management Reliability Test**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.837	.838	5

- **Project Procurement Management Reliability Test**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.752	.754	7

Overall Reliability Test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.800	.803	50

Mean and standard deviation of the overall data

Item Statistics			
	Mean	Std. Deviation	N
Definition of plan scope management	3.89583	.472187	48
Clear definition of requirements from the beginning	3.85417	.545371	48
Creation of WBS	3.85417	.504852	48
Verification of scope	3.77083	.472187	48
Controlling project scope change	3.66667	.476393	48
Development of time/ schedule management plan	3.77083	.515281	48
Definition of activities	3.60417	.573885	48
Sequencing of Activities	3.43750	.615621	48
Estimation of activity durations	3.47917	.714279	48
Controlling project schedule changes	3.08333	.709610	48
Identification of quality standards	3.87500	.788886	48
Review of quality standards	3.83333	.694456	48
Regular evaluation of project performance	3.83333	.663111	48

Checking and monitoring results to comply with quality standards	3.79167	.650968	48
Controlling project quality changes	3.79167	.617419	48
Definition of cost plan	3.68750	.657405	48
Project cost estimation	3.43750	.681246	48
Required budget determination	3.60417	.736281	48
Controlling project budget changes	3.02083	.699227	48
Development of risk plan	3.04167	.824062	48
Identification and registration of risks	2.75000	.668437	48
Prioritization of risks and estimation of implications	2.66667	.694456	48
Development of risk response plan	2.68750	.748225	48
Control of identified risks	2.60417	.736281	48
Development of project plan	3.22917	.660096	48
Management of project work	3.00000	.714590	48
Monitoring and control of project work	2.85417	.683843	48
Effective coordination of project activities	2.62500	.672404	48
Identification of project stakeholders	3.41667	.613096	48

Definition of stakeholder management plan	3.04167	.682870	48
Determination of Needed resources	3.85417	.618495	48
Documentation of requirements	3.66667	.595491	48
Identification of potential sources	3.66667	.595491	48
Appropriateness of obtaining quotations, bid, offers or proposal	3.41667	.539240	48
Choosing among potential suppliers	3.54167	.581939	48
Management of relationship with suppliers	3.56250	.580031	48
Proper completion and settlement of contract	3.75000	.601417	48
Development of project team	3.89583	.592132	48
Control and management of project team	3.79167	.581939	48
Determination of needed information and communication	3.04167	.797825	48
Availability of needed information to project stakeholders	2.87500	.703336	48
Collection and dissemination of performance information	2.85417	.771558	48
Generating, gathering and disseminating information	2.89583	.721688	48
Communication Control	2.68750	.748225	48

