

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

Assessment of Project Management Practices: The Case of African Union Commission

By

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Addis Ababa, Ethiopia



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Assessment of Project Management Practices: The Case of African Union Commission

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A Research Project Submitted to Addis Ababa University School of Commerce in Partial Fulfillment of the Requirement for the Degree of Master of Arts in Project Management

June 2022

Addis Ababa, Ethiopia

DECLARATION

I hereby declare that this research project is my own original work, and carried out under the supervision and guidance of the research advisor Dakito A (PhD). It has not been submitted either partially or in full to any other institution for an award of Degree. Other sources of information have been duly acknowledged.

_____ _____

Jemal Hussien Date

LETTER OF CERTIFICATION

This is to certify that Jemal Hussien has carried out this project work entitled "Assessment of project management practices – The Case of African Union Commission" under my supervision. It is the candidate's original work and sufficient for submission as the partial fulfillment of the requirement for the award of master's degree in project management.

Advisor: Dakito A. (PhD)

Signature_____ Date_____

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Approved by the Board of Examiners:

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ACRONYMS

APM	Association of Project Management
AU	African Union
AUC	African Union Commission
ISO	International Organization for Standardization
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PRINCE	Projects in Controlled Environment
STC	Specialized Technical Committee
WBS	Work Breakdown Structure

Abstract

Effective and efficient project management practices are essential for development of successful projects as indicated by studies in Literature.. This study sought to assess the extent to which project management knowledge areas and their respective processes were practiced for the implementation of projects in the African Union Commission. The study also assessed the effect of the organization's project management practice to the perceived project performance. In order to achieve the objectives of the study, questionnaire was developed as a main instrument of the study to collect the primary data. Descriptive analysis was applied to answer the research questions and objectives. The results achieved revealed that generally project management practices on Integration, schedule, scope, cost, resource, procurement and stakeholder were highly practiced knowledge areas. Furthermore the study showed that knowledge areas on quality, risk and communication were moderately used in the organization. Moreover, the effect of the organization's project management practice on project performance indicated that completion of projects within schedule, budget and set standards were sometimes achieved while project objectives were frequently met. The study finally recommended that the main areas of improvements on the existing practices include project management processes on schedule, quality, communication, resource, and risk management.

Key words: Project, Project Management, Project Management Practices, knowledge areas, project management processes

CHAPTER ONE

1. INTRODUCTION

This chapter comprises the background of the study, the problem statement, the research questions, objectives of the research, and the significance of the study, the scope and limitation of the study and the organization of the paper.

1.1 Background of the Study

Organizations undertake projects for various reasons: to solve society problems, satisfy social needs, respond to customer requests, advance technologies or respond to market demand. They anticipate executing these projects successfully based on the planned schedule, allocated budget and set standards. However project success has not been something that can be easily achieved. Projects are subject to issues such as resource scarcity, duration uncertainty, project delay, project complexity, budget overrun, and ineffective project management practices. At the same time, there is an ever-increasing demand for projects to be completed within more and more restrictive time, cost and performance constraints. That is why project management is becoming a powerful and popular practice in organizations.

The knowledge, skills and tools associated with project management continued to evolve (Kerzner, 2018) as part of ensuring projects are completed on time, on budget and to the set standards. Organizations using project management have shown better utilization of resources, shorter development times, reduced costs, interdepartmental cooperation that builds synergies across the organization, and a better focus on results and quality (Singh, 2019). Successful project management offers the means to get the best out of "good intentions" by ensuring projects are implemented as efficiently and effectively as possible (PINTO, 2019).

Project management practices and theories have advanced in recent decades and substantial growth has been experienced in the adoption of project management disciplines to accomplish work in different industries and sectors (Winter and Szczepanek, 2008). Organizations have important assets in form of project management practices which help in aligning their strategic objectives (Besner & Hobbs, 2006). These project management practices helps in creating value for the organization by creating and increasing success rate. It is therefore important for an

organization to adopt and continually improve the use of the appropriate project management tools and techniques.

This study will focus on the assessment of project management practice in the African Union commission for the implementation of infrastructure projects, determine gaps and suggest recommendations in project execution and practices to improve and standardize the project execution to handle the complexity and increase effectiveness of projects. The study considers the project management frameworks developed by Project Management Institute (PMI) called Project Management Body of Knowledge (PMBOK, 6th Edition) guideline as the basis. PMBOK is a framework of standards, conventions, processes, best practices, and guidelines that are accepted as project management industry standards.

1.2 Problem Statement

The African Union Commission (AUC), as a secretariat of African Union, undertakes the day to day activities of the Union, initiates proposals to be submitted to the AU organs as well as implementing decisions taken by them. The commission executes various projects throughout the African continent to support Member States. The organization leads strategic continental initiatives such as Programme for Infrastructure Development in Africa (PIDA). Agenda 2063 is also a master plan and a strategic framework to deliver both quantitative and qualitative Transformational Outcomes for Africa's people (AU official website).

The African Union Commission strives to deliver on its commitments for national, regional as well as continental projects/ programs to improve the lives of African citizens. In realizing this vision, establishing an effective and efficient project management practices is crucial and plays key role for its success.

The organization has faced various challenges associated with managing its various projects in African besides successfully delivered projects. The first continental report on the implementation of Agenda 2063 (AUC and AUDA-NEPAD, 2021) showed that various projects and programs were challenged by project delays as well as budgetary issues. It further highlighted the financial, material and human resource management challenges hindered to the effectiveness of the deliverables. In addition, poor coordination with the concerned project

stakeholders, insufficient information and ineffective management of projects were also mentioned as additional challenges.

Similarly, in its expert meeting report of the 4th Specialized Technical Committee (STC) on Finance, Monetary Affairs, Economic Planning and Integration (MAEPI) (STC on MAEPI, 2020) listed challenges that affected the successful implementation of Agenda 2063 flagship projects. Inadequate or lack of resources including human, financial, materials and equipment has been highlighted as major challenges. Weak technical and managerial capacities in some technological sectors notably in the railway industry faced at national, regional and continental level. The other challenged was lack of clarity in defining scope due to failure in defining responsibility areas among the implementing partners.

Implementation challenges of the Program for Infrastructure Development in Africa (PIDA) priority Action Plan (PAP 1) were reported in its midterm review report in 2019 (PIDA PAP 1 midterm review, 2019). The report covered the implementation period from 2012-2020. The challenges mentioned in the report include lack of clarity in scope definition among implementing bodies, lack of risk management policies, limited capacities in the implementing agencies, lack of funding and capacities for project preparation and lack of involvement of concerned stakeholders.

AUC involves in implementation of these various projects even though many of them are also implemented by national, regional and continental partners with AUC's role would be as oversight member. Furthermore, AUC has responsibilities in its leadership to ensure successful delivery of projects to realize its vision.

It is the researcher's belief that implementation of effective and efficient project management practices in the organization could address the challenges of projects mentioned above. Establishing project management best practice by benchmarking an already established framework will contribute effectively to project success.

There were no research found that focused on the general assessment of project management practices in the organization by considering a recognized project management framework like PMBOK guideline as a basis to the study. A study was conducted on the assessment of

monitoring and controlling practices of programs and projects of African Union Commission (Dereje, 2020) but it has not covered all aspects of project management practices.

The purpose of this study is therefore to carry out an assessment of the organization's project management practices and carry out gap analysis in respect to PMBOK guideline. PMBOK guideline is a recognized and widely used standard and principles that covered project management knowledge areas consists of processes applicable to any organization. The overall goal of this study is to provide recommendations towards improving project management practices.

1.3 Research Questions

The study will focus to answer the following research questions:

1) What is the extent of the formal project management practices implemented in the African Union Commission
2) What are the effects of the organization's project management practices to project performance?
3) What are the gaps of the organization's project management practices in terms of the project management knowledge areas?

1.4 Objectives

1.4.1 General Objectives

The general objective of this study is to carry out an assessment of the project management practices in the African Union commission, identify strengths & gaps and provide recommendations towards developing project management best practices in the organization.

1.4.2 Specific Objectives

The specific objective of this research is:

- To assess the extent of organization's project management practices in terms of project management knowledge areas.
- To examine the effect of the organization's project management practices on the performance of projects

- To identify the gap in which the organization's project management practices needs to improve in terms of the 10 knowledge areas of project management. .

1.5 Significance of the Study

The organization mobilizes resources and budgets millions of Dollar to implement projects across the African continent to realize its vision towards sustainable social and economic development. Expectations are also high from the different stakeholders who put trust in the organization to achieve its objectives. Implementation of effective, efficient and proved project management tools and techniques contributes to successfully achieve project deliverables. Project implementers in the organization execute different project management processes and use various tools and techniques to manage their respective projects. Since this study sought to uncover the project management practices in respect to the recommended best practice method of PMBOK guideline, the result of the study will benefit the organization to analyze the gaps and improve its practices based on the well-recognized project management frameworks.

1.6 Scope

African Union Commission is made up of six portfolios according to the new structure in place since the Executive Council session in January/February 2021. They are: Agriculture, Rural Development, Blue Economy and Sustainable Environment; Economic Development, Trade, Industry and Mining; Education, Science, Technology and Innovation; Infrastructure and Energy; Political Affairs, Peace & Security; Health, Humanitarian Affairs and Social Development.

However, this research focused only for Infrastructure and Energy portfolio that has mandated to deploy infrastructure related projects including ICT, Transport and Energy throughout the African Union Member States. The study was also limited to assessing the organization's project management practices compare with the practice in PMBOK guideline.

1.7 Limitations

There were some limitations during conducting the study. One of the limitations was in relation to the current global situations of COVID-19 pandemic. Due to the policy put in place to limit physical meetings, it had impacted to have face-to-face communications. To overcome this issue, the researcher had modified the data collection mechanism by developing a web based online questionnaire and used emails and mobile application such as what's up and telegram to communicate with survey participants.

The other limitation was the unwillingness of employees to participate in the survey questioning its anonymity. This was mitigated by developing anonymous web based survey in addition to presenting an introduction letter assuring respondents that it will be used only for purpose of academic study and will be treated with maximum confidentiality.

1.8 Organization of the Study

This study consisted of five chapters. The first chapter focused on introduction that covered research background, research objectives, research questions, significance of the study, scope as well as limitation of the research. The second chapter discussed literature reviews in relation to the study. The third chapter dealt with research methodology including research design, target population, sampling techniques, data collection methods, data analysis, validity and reliability as well as ethical considerations. Chapter four consisted of data analysis, presentation and discussion. The last chapter, chapter five, covered the key findings of this research, conclusions and recommendations.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Introduction

This chapter presented the theoretical and the empirical literature review on project management and project management practices. It covered project management frameworks, best practices, knowledge areas, process groups and processes.

2.2 What is a Project?

Many authors and organizations define a project in different way but shared common attributes. Project Management Body of Knowledge (PMBOK) Guide, 2017, defines project as "a temporary endeavor undertaken to create a unique product, service, or result". ISO 21500 define project as "a unique set of process consisting of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective". Pinto, 2019, has supported the definition of project by PMI and has elaborated the main elements as follows.

Projects are complex, one-time processes: A project arises for a specific purpose or to meet a stated goal. It is complex because it typically requires the coordinated input of numerous members of the organization.

Projects are limited by budget, schedule, and resources: Project work requires that members work with limited financial and human resources for a specified time period.

Projects are developed to resolve a clear goal or set of goals: Projects are designed to yield a tangible result, either as a new product or service.

Projects are customer-focused: The underlying purpose of any project is to satisfy customer needs.

Even though there are a number of project definitions, they all contain same project attributes that they commonly shared:

- A project is unique in nature
- A project has specific time frame for completion with a definite start and end dates.
- It requires resources

- It has definite objectives (goals) to achieve
- It involves risks and uncertainties

2.3 Project Management

Projects are a key way to create value and benefits in organizations. In today's business environment, organizational leaders need to be able to manage with tighter budgets, shorter timelines, scarcity of resources, and rapidly changing technology. The business environment is dynamic with an accelerating rate of change. To remain competitive in the world economy, companies are embracing project management to consistently deliver business value (PMBOK 6th edition, 2017).

Project Management is defined as "the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements" (PMBOK, 2017). According to Association for Project Management (APM) body of knowledge (2017), project management is the application of processes, methods, skills, knowledge and experience to achieve specific project objectives according to the project acceptance criteria within agreed parameters. Project management has final deliverables that are constrained to a finite timescale and budget. ISO, 2012, define project management as 'the application of methods, tools, techniques and competences to a project. Project management includes the integration of the various phases of the project life cycle. Project management is accomplished through processes".

There are also many authors of project management literature that agreed project management is about setting and then achieving targets for time, cost and performance (quality). Excellence in effective project management can guarantee measureable and tangible results based on scope, time, and cost, which are the cornerstone to project success (Kerzner, 2018). It was also define as the planning and control processes and skills required to complete a project using project resources while matching or improving on time, cost, quality and safety limits at an acceptable level of risk (Wallace, 2014).

Scholars in general stressed the importance of effective project management practice for organizations to realize business objectives and goals through successful project implementation. Project management has evolved from a set of processes that were once considered "nice to have" to a structured methodology that is considered mandatory for the survival of the firm

(Kerzner, 2018) and further stated that project management is now regarded as the vehicle that provides the deliverables that create business benefits and business value. Effective project management can give a strong competitive advantage in project delivery, provide quality services, and reduce project costs.

Project management enables organizations to execute projects effectively and efficiently. According to Kerzner (2018), project management has the following benefits:

- Allows an organization to take on more work in less time without any increase in cost or degradation of quality
- An increase of profitability
- Allows for better up-front planning, which should reduce the number of scope changes downstream and prevent unwanted changes from happening
- Focuses on effective teamwork, communication, cooperation, and trust rather than organizational restructuring
- Quality of deliverables

2.4 Project life cycle

According to PMBOK guide 6th edition, 2017, a project life cycle is" the series of phases that a project passes through from its start to its completion. It provides the basic framework for managing the project. This basic framework applies regardless of the specific project work involved. The phases may be sequential, iterative, or overlapping".

PMI acknowledges four phases of project life cycle, which are Starting the project, organizing and preparing, carrying out the work and closing the project (2017). These four phases can be broken down into functional objectives or a precise milestone within the entire scope of work.

Schwalbe (2016) elaborated a project life cycle as it is a collection of phases. Phases break projects down into smaller, more manageable pieces, which will reduce uncertainty. Some organizations specify a set of life cycles for use in all of their projects, while others follow common industry practices based on the types of projects involved. Project life cycles define what work will be performed in each phase, what deliverables will be produced and when, who is involved in each phase, and how management will control and approve work produced in each

phase. (Pinto 2007) identified four distinct project life cycle phases which are: Conceptualization, Planning, Execution, and Termination.

Conceptualization according to Pinto (2007) refers to the development of the initial goal and technical specification for a project. The scope of work is determined, necessary resources identified, and important organizational contributions or stakeholders signed on. Also, feasibility study is conducted at this stage to investigate whether the project can be continued or not.

Planning is the stage in which detailed specifications, schematic, schedules and other plans are developed. It is also a stage where the project solution is further developed in as much detail as possible and steps necessary to meet the project's objectives are put in place. Project schedule, the actual work and the estimated cost of completion are also identified.

Execution phase deals with actual performance of the work of the project. Progress is continuously monitored and appropriate adjustments are made and variances recorded so as to maintain the original project plan. Project tasks are been carried out and progress information is being reported through regular team meetings.

Termination occurs when the completed project is transferred to the customer, project documentation is handed over to the business, and suppliers' contracts terminated, project resources released and the project closure communicated to all stakeholders.

2.5 Project Management Practices

Project Management has evolved in to key roles for success of a project. As projects developed and knowledge is gained, organizations and project management organizations started to develop standards and guidelines in order to optimize the project management activities which will be adopted as best practices. Best practices in project management increase the chances of success in achieving goals when dealing with projects.

Developing and maintaining a suitable project management practice in an organization is essential to achieve the objective of a Project. The effectiveness as well as suitability of project management to an organization depends on different factors as organizations differ in size, structure and business type to mention some.

Defining and implementing best practices for project management is the sole discretion of the organization. Best practice refers to a technique, tool, method, or approach used effectively to arrive at the desired outcome. Typically, best practice is something, which improves organizational efficiency and effectiveness, and provides consistency and uniformity across organization (Kerzner, 2018).

Over the years, many standards and guidelines of good project management practices comprising of processes and techniques have been developed. Several standards and guides can be used by organizations in selecting the most appropriate processes and techniques in a given context. The efficient and effective implementation of project management processes best practices should improve project management performance and hence improving project success.

In this sense, project management body of knowledge (PMBOK), projects in controlled environment (PRINCE2), the IPMA Competence Baseline by the International Project Management Association and ISO 21500:2012 standard are some of the effective project management best practices.

Among these international standards, PMI is the world's leading professional organization for project management and has been in the forefront of efforts to standardize project management practices and codify the necessary skills to be successful in this field (Pinto, 2019). PMB0K is recognized by many profession organizations which implies that the knowledge and practices described are applicable to most projects, and that there is widespread consensus about their value and usefulness. It is also largely a generic methodology, which can be widely applied to any industry with minimum alteration.

It is in this view that this research benchmark PMBOK guideline to assess the project management practices in the African Union Commission.

2.6 Project Management Knowledge Areas- Building best practices

Project management knowledge areas describe the key competencies that project managers must develop (Schwalbe, 2016). According to PMBOK guide sixth edition, 2017, there are 10 knowledge areas of project management skills and activities. These are Integration, Scope, Schedule, Cost, Quality, Resource, Communication, Risk, Procurement and Stakeholder Management. Each Knowledge Area is consists of a set of processes, each with inputs, tools and

techniques, and outputs. The processes are grouped into five process groups which are initiating, planning, executing, monitoring and controlling, and closing (PMBOK, 2017). These processes, together, accomplish proven project management functions and drive project success.

2.6.1 Project Integration Management

Project Integration Management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups (PMBOK, 2017). It involves coordinating all of the other project management knowledge areas throughout a projects life cycle and ensures that all the elements of a project come together at the right times to complete a project successfully (Schwalbe, 2016).

According to PMBOK guide, sixth Edition, seven main processes are involved in Project Management Integration.

1. Develop Project Charter involves working with stakeholders to create the document that formally authorizes a project.
2. Develop Project Management Plan involves process of defining, preparing, and coordinating all plan components and consolidating them into an integrated project management plan.
3. Directing and Managing Project work involves carrying out the project management plan by performing the activities included in it.
4. Manage existing and new Project knowledge involves the process of using existing knowledge and creating new knowledge to achieve the project's objectives..
5. Monitor and Control Project work involves overseeing activities to meet the performance objectives of the project as defined in the project management plan.
6. Perform Integrated change involves identifying, evaluating, and managing changes throughout the project life cycle.
7. Closing the project or phase is finalizing all activities to formally close the project or phase.

2.6.2 Project Scope Management:

The objective of Project Scope Management is to ensure that the project includes all the work required to complete the project successfully. It ensures that the project team and stakeholders have the same understanding of what products the project will produce and what processes the

project team will use to produce them (Schwalbe, 2016). There are six main processed required in project scope management.

1. Plan Scope Management involves determining how the project scope will be managed.
2. Collect Requirements involves the process of determining, documenting, and managing stakeholder needs and requirements to meet project objectives.
3. Define Scope involves the process of developing a detailed description of the project.
4. Create WBS is the the process of subdividing project deliverables and project work into smaller, more manageable components.
5. Validate Scope is the process of formalizing acceptance of the completed project deliverables.
6. Control Scope involves the process of monitoring the status of the project and product scope and managing changes to the scope baseline.

2.6.3 Project Schedule Management

The definition of project success often includes completing a project on time, and completing the project on time requires the development of a realistic plan and the effective management of the plan (Watt, 2014). Project Schedule Management deals with all the processes required to manage the timely completion of the project. Project scheduling provides a detailed plan that represents how and when the project will deliver the products, services, and results defined in the project scope and serves as a tool for communication, managing stakeholders' expectations, and as a basis for performance reporting. The six main process in project schedule management are plan schedule management, define activities, sequence activities, estimate durations, develop schedule and control schedule.

2.6.4 Project Cost Management

Project Cost Management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget (PMBOK Guide, 2017). Project managers must make sure their projects are well defined, have accurate time and cost estimates, and have a realistic budget that they were involved in approving (Schwalbe, 2016). The main processes of Project Cost Management are Plan Cost Management, Estimate Costs, Determine Budget and Control Costs. As explained by

Schwalbe, 2016 and PMBOK Guide, 2017, Plan cost management involves the process of defining how the project costs will be estimated, budgeted, managed, monitored, and controlled. Estimating Cost is the process of developing an approximation or estimate of the costs of the resources needed to complete a project. Determining Budget is the process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline while controlling costs involves the process of monitoring the status of the project to update the project costs and manage changes to the cost baseline.

2.6.5 Project Quality Management

The purpose of project quality management is to ensure that the project will satisfy the needs for which it was undertaken. According to PMBOK, 2017, project quality management includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements, in order to meet stakeholders' expectations. The processes in the project quality management are Plan Quality Management, Manage Quality and Control Quality. Planning Quality Management is identification of quality requirements and standards that are relevant to the project and as well as identifying deliverables and documenting how the project comply with the quality requirements. Managing Quality involves periodically evaluating overall project performance to ensure that the project will satisfy the relevant quality standards. Controlling Quality involves monitoring specific project results to ensure that they comply with the relevant quality standards while identifying ways to improve overall quality (Schwalbe, 2016).

2.6.6 Project Resource Management

Project resource management is the processes of identifying, acquiring, and managing the resources needed for the successful completion of the project. In general, project resource management ensures that the right resources will be available to the project manager and project team at the right time and place. The six project management processes are briefly discussed below as presented in PMBOK, 2017 and Schwalbe, 2016.

1. Planning Resource Management involves the process of defining how to estimate, acquire, manage, and utilize physical and team resources.

2. Estimating Activity Resources includes the process of estimating team resources and the type and quantities of material, equipment, and supplies necessary to perform project work.
3. Acquiring Resources involves obtaining team members, facilities, equipment, materials, supplies, and other resources necessary to complete project work.
4. Developing Team involves building individuals and group skills to enhance project performance.
5. Managing Team involves the process of tracking team member performance, providing feedback, resolving issues, and managing team changes to optimize project performance.
6. Controlling Resources is the process of ensuring that the physical resources assigned and allocated to the project are available as planned, as well as monitoring the planned versus actual use of resources, and performing corrective action as necessary

2.6.7 Project Communications Management

The goal of project communications management is to ensure timely and appropriate generation, collection, dissemination, storage, and disposition of project information (Schwalbe, 2016). Many scholars agreed that the greatest threat to the success of a project is a failure to communicate. The success of any project depends on communication, and that most project failures can be traced either to poor communication or a lack of needed communication (Oliver, 1983). According to PMI, most of project failed due communication.

Project communications Management process are Planning Communication Management that determines the information and communication needs of Stakeholders, Managing Communications that involves creating, distributing, storing, retrieving, and disposing of project communications based on the communications management plan and Monitor communications to ensure information and communication needs of stakeholders are met.

2.6.8 Project Risk Management

Project risk management is the art and science of identifying, analyzing, and responding to risk throughout the life of a project and in the best interests of meeting project objectives (Schwalbe, 2016). It involves the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project. Project risk management focuses on identifying which risks may have impact on documenting the

characteristics of the project, prioritizing risks for further analysis or actions through assessing and combining the probability of occurrence.

2.6.9 Project Procurement Management

Project procurement management incorporates processes necessary to purchase or acquire products, services, or results needed from outside the project team. There are three main process of project procurement management according to PMBOK guide sixth edition. The first process is Plan Procurement Management to determine what to procure, when and how to do it. Conducting Procurement is another process of obtaining seller responses, selecting a seller, and awarding a contract. The third one is control procurements that involve managing relationships with sellers, monitoring contract performance, and making changes as needed.

2.6.10 Project Stakeholder Management

Project Stakeholder management comprises process including identification of the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution. There are four main processes. Identify Stakeholder, Plan Stakeholder Engagements, Manage Stakeholder engagement and Monitor Stakeholder Engagement. Identification of all involved in the project and affected by it, determining strategies to effectively engage stakeholders in decision makings and activities, managing communications to satisfy stakeholders' expectations and continuous monitoring of stakeholder relationships are all an important processes for the project success.

2.7 Project Management Process Groups

Project management is broken down into process groups and knowledge areas. Project Management Process Group is defined as a logical grouping of project management processes to achieve specific project objectives (PMBOK, 2017). The 49 processes discussed in project management knowledge areas section are grouped and distributed into five project Management Process groups. The five process groups are Initiating, Planning, Executing, Monitoring & Controlling and Closing. Table 2.1 shows mapping of each processes into project management process groups and project management knowledge areas.

2.7.1 Initiating Process Group

Initiating Process group consists of processes required to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase. The two main processes are Develop Project charter and Identifying Project Stakeholders.

2.7.2 Planning Process Group

Planning process groups consists of processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve (PMBOK, 2017). There are 24 main process in this process group (please see Table 2.1 for more detail). This group of processes is designed to help planning of the entire project in detail, from the scope, schedule, and budget to how stakeholders will be managed.

2.7.3 Executing Process Group

Executing process group includes processes required to complete the work defined in the project management plan to deliver project objectives. According to PMBOK, 2017, this process group consists of nine main project management processes (Table 2.1) and is focused on managing project activities and tasks to ensure progress is occurring, communications are happening, risk responses are being implemented, and stakeholders are being engaged.

2.7.4 Monitoring and Controlling Process Group

This process group consists of processes required to track, review, and regulate the progress and performance of the project. There are 12 main processes (as summarized in Table 2.1) which will be undertaken throughout the entire project to ensure implementation flows smoothly as planned and also to identify and mitigate any potential issues.

2.7.5 Closing Process Group

Processes that required formally completing or closing the project of phase are grouped into Closing Process Group. This process group only has one primary process which is called close out the project or phase. It involves ensuring the customer has accepted all final deliverables and completion of required project documentation.

Table 2.1: Project Management Process Group and Knowledge Area Mapping

Knowledge Areas	Project management Process Groups				
	Initiating	Planning	Execution	Monitoring and Controlling	Closing
Project Integration Management	1. Develop Project Charter	2. Develop Project management Plan	3. Direct and Manage Project work 4. Manage project Knowledge	5. Monitor and control project work 6. Perform Integrated Change control	7. Close project or phase
Project Scope Management		1. Plan Scope Management 2. Collect Requirements 3. Define Scope 4. Create WBS		5. Validate Scope 6. Control Scope	
Schedule		1. Plan Schedule Mgt 2. Define Activities 3. Sequence Activities 4. Estimate activity durations 5. Develop Schedule		6. Control Schedule	
Cost		1. Plan Cost Mgt 2. Estimate Cost 3. Determine Budget		4. Control Costs	
Quality		Plan quality Mgt	Manage quality	Control Quality	
Resource Management		1. Plan Resource Mgt 2. Estimate Activity Resources	3. Acquire Resources 4. Develop Team 5. Plan Team	6. Control Resources	
Communication		1. Plan Communication Mgt	2. Manage Communication	3. Monitor Communications	
Risk		1. Plan risk Mgt 2. Identify Risks 3. Perform qualitative risk analysis	6. Implement risk responses	7. Monitor risks	

		4. Perform quantitative risk analysis 5. Plan risk responses			
Procurement		1. Plan Procurement Mgt	2. Conduct Procurements	3. Control Procurement	
Stakeholder	1. Identify Stakeholder	2. Plan stakeholder engagement	3. Manage stakeholder engagement	4. Monitor Stakeholder engagement	

Source: PMBOK® 6th Edition, 2017

2.8 Empirical Literature Review

2.8.1 Adopting Project Best Practices

PMI's Pulse of profession 2016 underscored that that the dynamic, rapidly changing, complex business environment continues to emphasize the need for excellence in project, program and portfolio management. Its findings reinforced that when organizations embrace project management practices, they have better outcomes. The study also found that projects were 2.5 times more successful in organizations where proven project management practices are used.

Various studies emphasized the importance of project management to projects success. The survey resulted from the year of 2020's Pulse of the Profession of PMI revealed that an average 11.4 percent of investment is wasted due to poor project performance. And organizations that undervalued project management as a strategic competency for driving change reported an average of 67 percent more of their projects failing outright.

In a study in Kenya by Magagan, 2021, on the influence of project management practices based on project risk, communication, leadership and stakeholder management on performance of projects , the findings showed that they all have positive influence to the project performance.

In order to deliver effective and consistently successful project results, organizations are required to continuously improve implemented project management practices (Hillson, 2003). Moreover, Besner & Hobbs (2006) state that organizations have important assets in form of project management practices which help in aligning strategic objectives of organization.

Studies by Project Management Institute (PMI) and other scholars clearly show that project management needs more attention and understanding to produce consistent and successful results for the projects. It can be generally summarized from the findings of previous studies that maintaining a suitable project management methodology is necessary for the success of the organization. While organizations use processes that are repeatable on projects, adopting and maintaining an appropriate project methodology is crucial. Any suitable methodology has four important best practice components as outlined by Murch (2001). Tools, techniques, templates, and guidelines are the components that the organization must adopt when implementing the methodology. Organizations can either adopt their own methodology or choose an excellent project management methodology that could suit their requirements. Kerzner (2018) opined that maintaining methodology could reduce paperwork and cost, lower resource requirements, and enable reuse of methodology throughout the organization. Adopting an existing best practice or creating an organization specific methodology is an organizational decision, which should take into account its big picture needs.

2.8.2 Assessment of Project Management knowledge areas in Organizations

A survey on the assessment of the level of knowledge and skills on regional development projects by Kopeckova and Machal, 2016, was conducted in the Czech Republic. The survey results have allowed identifying the level of knowledge and skills of project managers in regional development in project management knowledge areas and thereby have enabled to identify the knowledge areas affected by the ignorance of the most. Among these knowledge areas belong mainly Risk management, Scope management and Quality management.

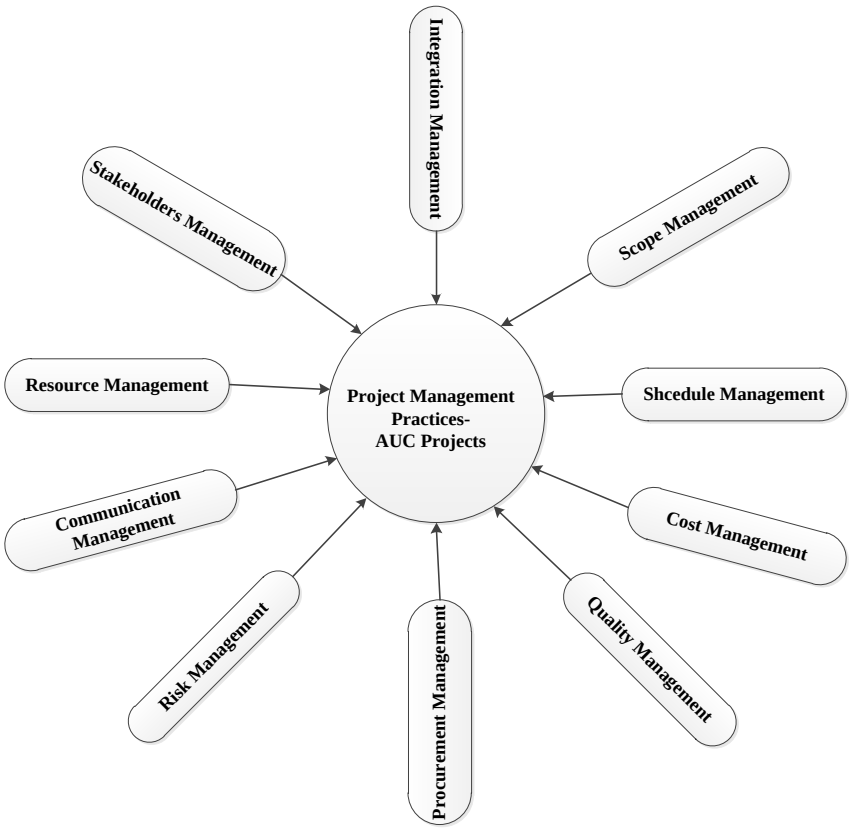
A study by Ibrahim and Young, 2019, investigated the influence of Project Management knowledge of Academics to the success of academic research projects. The results revealed a positive significant relationship between Project Management Knowledge Areas and Project Success. In another similar study titled as " The Contribution of the Knowledge Areas to Project Success: A Multidimensional Approach" (Gomes, Romao & Carvalho, 2021), a survey performed to project managers that aimed to identify the extent to which the different knowledge areas and their respective project management practices are implemented and linked to projects success. The results achieved underlines that the practices related with cost, time, and scope management were the most well established.

Understanding project management knowledge areas to manage projects was revealed in a case study of assessing adoption of project management knowledge areas and maturity level in Malaysia (Rasid, A., et al. 2014). The findings indicated that almost 90% of the respondents agreed the importance of understanding the project management knowledge areas when managing projects.

2.9 Conceptual Model of the Study

Following the above literature review, a conceptual model diagram for this research study was developed as shown in Figure 2-1 below. The ten project management knowledge areas along with their respective project management process were considered to assess the level of practice in the organization.

Figure 2-1: Conceptual Model Diagram



Source: Developed by the researcher, 2022

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter focused on research methodology. It covered the research design, target population, sampling techniques, data collection methods and instruments, data analysis, validity and reliability as well as ethical considerations.

3.1 Research Design

This research employed descriptive type of research design to assess the extent of the organization's project management practices in terms of project management knowledge areas and examine its effect on the performance of projects. Descriptive research design enables the researcher to describe the status of the subject under study with both quantitative and qualitative research approach. According to Ranjit, 2019, descriptive study attempts to describe systematically a situation, problem, and phenomenon and provides information. The main purpose of descriptive research is to describe the state of affairs as it exists at present that includes surveys and fact-finding enquiries of different kinds (Kothary, 2004). This definition is best elaborated by Glass & Hopkins (1984) as descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection. Moreover, a descriptive quantitative methodology has been used in this study.

3.2 Target Population and Sampling Techniques

In this study, the target populations were employees working in Infrastructure projects / programs that covered the Energy, Transport and Information & Communication Technology (ICT) sectors. The employees involved include project managers, project coordinators, project officers and consultants in the headquarters of AUC as well as regional offices who actively participate in the implementations of project. Total populations of 26 were targeted who were invited to involve in web based questionnaire. Convenience sampling technique was used because of the ease of accessibility of the targeted population to the researcher as well as their homogeneity nature in terms of profession and work experience that made convenient to the researcher to conduct the study.

3.3 Data Collection Methods

Primary data was collected for this research through a structured online questionnaire that was developed to facilitate data collection as well as overcoming the policies put in place restricting physical meetings as part of COVID-19 protection. The online questionnaire also overcame the issues of geographical location of questionnaire respondents. A word version of the questionnaire was also shared to the targeted population through email as an alternative option based on their preferences.

The questionnaire was consists of closed-ended questions structured in to three sections. The first section covered the demographic information of respondents while the remaining two sections covered questions related to project management knowledge area practices and project performances to assess the variables under study.

3.4 Data Analysis

The study collected quantitative data and was analyzed by use of descriptive statistics. Descriptive statistics such as frequencies, percentages and mean were computed to describe the characteristics of the variables of interest in the study. Descriptive statistics provided the basic features of the data collected on the variables under study and provided the impetus for conducting further analysis on the data (Mugenda, 2008).

The data required to assess the extent to which the practice of project management knowledge areas in the organization was collected using a five – point Likert scale: (5) Strongly Agree, (4) Agree, (3) Neither, (2) Disagree and (1) Strongly disagree. Similarly the effect on the performance of the project collected using a five – point Likert scale: (5) Always, (4) frequently, (3 sometimes, (2) Seldom and (1) Never.

The overall mean value and percentage from each factor in specific project management knowledge area was used to determine the extent to which the project management knowledge areas were practice in the organization's Infrastructure projects and the effect of the current project management practice to the project perceived performances.

3.5 Validity and Reliability Analysis

3.5.1 Validity

Validity analysis is an important element that indicates the degree to which an instrument measures what it is supposed to measure. Content validity is used in this research to ensure that a measuring instrument provides adequate coverage of the topic under study. The questionnaire has covered all relevant topics related to the objectives of the research. This was cross-checked with the reference guidelines (PMBOK 6th edition) to ensure that all variables of under the study were covered as well as consultation with the project advisor has been made.

3.5.2 Reliability

Reliability is another aspect considered in the research to ensure that a measuring instrument provides consistent results. The researcher has made efforts to improve the reliability of the study. The questionnaire has been shared with clear and same directions to all targeted populations.

Moreover, Cronbach's alpha coefficient was used to check for internal consistency. Cronbach's alpha is a well-known measuring technique for internal consistency reliability of group of items. Cronbach's alpha values range from 0 to 1. Many authors follow the general rule of thumb that a Cronbach's alpha of 0.7 and above is acceptable (Taber, 2018).

The researcher has conducted the Cronbach's alpha test in order to ensure the reliability of the study. As a result, the overall Cronbach alpha was 0.94, which signifies that the items have internal consistency.

Table 3.1 summarized Cronbach's alpha values of this study as part of reliability test to check internal consistency.

Table 3.1. Reliability Test using Cronbach's alpha

No.	Project Management Knowledge Areas	Cronbach's Alpha	No of Items
1	Project Integration Management	0.77	7
2	Project Scope Management	0.72	6
3	Project Schedule Management	0.83	6
4	Project Cost Management	0.74	4
5	Project Quality Management	0.93	3
6	Project Resource Management	0.73	6
7	Project Communication Management	0.84	3
8	Project Risk Management	0.85	6
9	Project Procurement Management	0.75	3
10	Project Stakeholder Management	0.98	4
11	Project Performance	0.82	4
Total		0.94	52

Source: Own computation from survey result, 2022

3.6 Ethical Considerations

There were various steps undertaken to ensure that the study adheres to research ethical standards. First participation is voluntary and is based on agreement to participate in the research. Secondly the potential respondents were not be identified by name. The web based questionnaire was designed in a way that it doesn't personal identities. Confidentiality of respondents was treated as a matter of priority. Furthermore, respondents were assured that the information they provide will only be used for an academic study. The researcher accorded the respondents their due respect while at the same time ensuring that they answer the questions to the expectations of the study.

CHAPTER FOUR

4. DATA ANALYSIS, PRESENTATION AND DISCUSSION

This chapter presents data analysis and discussion of the finding of the research study. It covered presentation of the response rate, demographic information of the respondent as well as findings on the research objectives.

4.1 Response Rate

The web based questionnaires were sent to a total of 26 respondents. 21 have filled successfully while 5 have not responded or not successfully completed in the system. Table 4.1 summarizes the response rate.

Table 4.1: Response Rate

Responses	Frequency	Percentage (%)
Responded	21	81 %
Not Responded	5	19 %
Total	21	100

The study considered the data collected from 21 respondents (81% response rate) who successfully responded to make further analysis.

4.2 Demographic Information of the respondents

This section presented the demographic Information of the respondents including gender distribution, Age group, level of education, job category as well as work experience particular to AUC infrastructure projects.

4.2.1 Gender Distribution

Table 4.2 summarized the gender distribution of the respondents. 76 % of respondents were male while 24% were female. Among the 5 respondents who didn't complete the survey, only one female has not responded while the remaining 4 are male. This showed that there is large number

of men working compared to women which indicated the presence of gender imbalance working in the organization's infrastructure projects.

Table 4.2: Gender Distribution

Responses	Frequency	Percentage (%)
Men	16	76
Women	5	24
Total	21	100

4.2.2 Age Group

Table 4.3: Age Distribution

Responses	Frequency	Percentage (%)
18-29	0	0
30-39	2	9.5%
40-49	16	76.2%
Above 50	3	14.3%
Total	21	100%

The majority of the respondents, 76.2% (16), are in the age category of 40 to 49. The second highest numbers with 14.3% are above 50 while the remaining 9.5% (2) are in the range of 30-39. There were not respondents in the age group below 29. Looking at the age category of respondents, they were all above 30 which indicate that they are at their most productive age.

4.2.3 Level of Education

The distribution of respondents by academic qualification is summarized in the following Table 4.4. The survey indicated that 71.4% of respondents have Post Graduate Degree, 14.3 % have PHD and the remaining 14.3 % have Bachelor degree. The fact that all respondents having a minimum of Bachelor degree and the majority are post graduated (MA/MS) degree, it improves the quality of data of being reliable to make valuable conclusions.

Table 4.4: Respondent's Distribution by Level of Education

Responses	Frequency	Percentage (%)
PHD	3	14.3
Post Graduate	15	71.4
Bachelor / Undergraduate	3	14.3
Diploma/Certifications	0	0
Other	-	-
Total	21	100

4.2.4 Job Category

The distribution of respondents by job category based on their role for managing projects in the organization is summarized in the Table 4.5. It indicated that 47.6% are Project Managers, 33.3% are project Coordinators and 47.6 are project members working as an expert in the project. Respondents were all highly involved in project implementation and well aware of the project management practice of the organization.

Table 4.5: Respondent's Distribution by Job Category

Responses	Frequency	Percentage (%)
Project Coordinator	7	33.3
Project Manager	4	19.1
Project Member	10	47.6
Support Staff	0	0
Total		100

4.2.5 Work Experience

The level of work Experience of respondents is another aspect considered in the study as summarized in Table 4.6. The survey data indicated that 42.9% (9) of respondents had work

experience from 6-10 years, 33.3 % had 1-5 years, 14.3% had 11-15 years and 9.5% had Above 16 years. This showed that majority respondents have work experience of above 5 years (67%).

Table 4.6: Respondent's Distribution by Work Experience

Responses	Frequency	Percentage (%)
1-5	7	33.3
6-10	9	42.9
11-15	3	14.3
Above 16	2	9.5
Total		100

4.3 Analysis of Project Management Practices

This section covered the analysis of the data collected for the assessment of project management practices based on the 10 knowledge areas of project management. The study sought to determine the extent to which respondents agree or disagree on the practice of project management processes in the organization for each of the 10 knowledge areas of project management.

The responses were rated on a five point Likert scale where: 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1 = Strongly Disagree. Data interpretation was done based on the mean value in the scale of 1-5. Authors differ on the interpretation of Likert Scale mean ranges. This study adopted oxford & burry-stock (1995) suggestions which is similar with the suggestion by Lee and Song (2015). They categorized the scale as Low for mean values below 2.4, medium for mean range of 2.5 - 3.4 and high for the range above 3.5. The following subsequent section discussed the data collected, the mean values along with interpretation for each process of the 10 project management knowledge areas.

4.3.1 Project Integration Management

Project Integration Management has seven processes in which respondents were asked their assessment on the level of practice for each processes in the organization. Table 4.7 depicted the respondent's response statistics.

Table 4.7: Project Integration Management practice

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Project Charter was developed	7	33.3	14	66.7	0	0	0	0	0	0	4.33
2. Project management plan was developed	5	23.8	12	57.1	4	19.1	0	0	0	0	4.05
3. Project activities were managed and directed as defined in the project management plan	5	23.8	11	52.4	5	23.8	0	0	0	0	4.00
4. Project knowledge (the use of existing knowledge and creating new knowledge to achieve project objectives) was well managed	2	9.5	12	57.1	7	33.4	0	0	0	0	3.76
5. Work monitoring scheme were in place and practiced	3	14.3	11	52.4	5	23.8	2	9.5	0	0	3.71
6. Change control was carried out to manage all change requests	2	9.5	7	33.4	10	47.6	2	9.5	0	0	3.43
7. Project closure is carried out to formally complete a project or phase	5	23.8	7	33.3	6	28.6	3	14.3			3.67
Average Mean											3.85

According to the findings, a minimum mean value of 3.43 was scored for the process required to carry out project change control in managing all change requests. This implied that the practice level for this process was medium. Respondents agreed for the remaining processes that there were high level of practice in the organization. In particular, majority of respondents agreed on high practice to develop project charter (66.7% agreed and 33.3 % strongly agree). Developing project management plan and managing project activities as plan were also found highly

practiced in the organization with a mean value of 4.05 and 4.00 respectively. As the average mean value of 3.85 indicated, it can be generally concluded that Project Integration Management knowledge areas were practiced in the organization.

The results showed that generally the project team recognized the importance of integration management except for a process to carry out change control to manage project change requests that was moderately practiced. As discussed in literature review and is elaborated by Schwalbe, 2016, project Integration management involves coordinating all of the other project management knowledge areas throughout a projects life cycle and ensures that all the elements of a project come together at the right times to complete a project successfully. Its importance is also highlighted by PMI, 2017 stating that this knowledge area includes a set of characteristics of unification, consolidation, communication and integrative actions to controlled project execution until its completion.

4.3.2 Project Scope Management

Table 4.8 below summarized the respondents' response statistics on the assessment of project Scope management knowledge areas. Responds had six questions to respond for each of the six processes. The findings showed that the minimum mean value was 3.95 and the maximum mean value was 4.43 with average mean value of 4.13. This result implied that respondents generally agreed there was high level of practice for all processes of project scope management knowledge areas in the organization for the implementation of infrastructure projects.

In related studies, scope management is among frequently used practices because they provide metrics and indicators easy to understand, update and handle during the execution of a project (Papke-Shields et al., 2010). As also discussed in literature review, scope management was among well-established knowledge areas in a survey conducted by Gomes, Romao & Carvalho, 2021 , performed to project managers that aimed to identify the extent to which the different knowledge areas and their respective project management practices are implemented and linked to projects success. As shown in Table 4.8, collection of project requirements and development of scope management plan was relatively low practiced processes. This is supported by Schwalbe, 2016, who explained that part of the difficulties of scope management is

that people often do not have a good process for collecting and documenting project requirements.

Table 4.8: Project Scope Management Practice

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Scope management plan that documents how the project will be defined, validated, and controlled was developed	5	23.8	12	57.2	2	9.5	2	9.5	0	0	3.95
2. Project Requirements were collected	4	19.1	12	57.1	5	23.8	0	0	0	0	3.95
3. Project scope (description of the project or product) was defined	9	42.9	12	57.1	0	0	0	0	0	0	4.43
4. Work Breakdown Structure (WBS) is created. WBS subdivides deliverables and project work in to smaller work packages and activities.	7	33.3	9	42.9	5	23.8	0	0	0	0	4.10
5. Completed project deliverables were validated	9	42.9	9	42.9	3	0	0	0	0	0	4.29
6. Scope changes were controlled and evaluated to the scope baseline	5	23.8	12	57.1	4	19.1	0	0	0	0	4.05
Average Mean											4.13

4.3.3 Project Schedule Management

Respondents were asked to assess the practice level for each of the six processes of project schedule management. According to the respondent's data, the average mean value is 3.99 with mean range from 3.38 - 4.48.

The high mean value of 4.48 was scored for the process of identifying sequence of project activities that was strongly agreed by 57.1% respondents. Developing project baseline schedule, defining list of activities and estimation of durations needed to complete activities scored a mean

value of 4.33, 4.24 and 4.05 respectively. It can be concluded that the practice level for these process were high. According to the findings, respondents were neutral for the process of developing schedule management (Mean 3.38) and monitoring project baseline schedule (3.43). This implied that the practice level of these two processes were medium. Table 4.9 summarized the response statistics on the practice of project scheduled management.

According to PMI, 2017, the project schedule management is a crucial knowledge area in which project team practices the scheduling method, such as critical path, then, the project-specific data, such as the activities, planned dates, durations, resources, dependencies, and constraints, are entered into a scheduling tool to create a schedule model for the project. The findings indicated that project teams recognize its importance to the project success.

Table 4.9 Project Schedule Management Data and Mean values

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1.Schedule management plan was developed	3	14.3	6	28.6	8	38.1	4	19.0	0		3.38
2. List of Activities were defined	8	38.1	10	47.6	3	14.3	0	0	0	0	4.24
3. Sequence of project activities were identified	12	57.1	7	33.4	2	9.5	0	0	0	0	4.48
4. Durations needed to complete activities with resources were estimated	7	33.3	8	38.1	6	28.6	0	0	0	0	4.05
5. A baseline project schedule were developed	9	42.9	10	47.6	2	9.5	0	0	0	0	4.33
6.Changes to the baseline project Schedule were monitored and managed	3	14.3	7	33.3	7	33.3	4	19.1	0	0	3.43
Average Mean											3.99

4.3.4 Project Cost Management

There are 4 questions for each of the 4 processes of project cost management. Respondents replied with the mean range from 3.67 to 4.19 with average mean value of 3.93. This indicated that generally project cost management was practiced in the organization.

Looking at particular processes, a mean value of 4.19 was scored for estimation of costs needed to complete project work that indicated agreement for its practice. Majority of respondents also agreed the practice of determining project budget to established authorized cost baseline that scored a mean value of 4.10. Developing project cost management policies and guidelines were relatively least practice process with a mean value of 3.67 followed by monitoring and managing project cost changes that scored a mean value of 3.76. Table 4.10 summarized the respondent's response statistics for the assessment of project cost management knowledge areas.

Table 4.10: Respondents response statistics for Project Cost Management

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Project Cost Management policies and guidelines were developed	2	9.5	13	61.9	3	14.3	3	14.3	0	0	3.67
2. Costs needed to complete project work were estimated	7	33.3	11	52.4	3	14.3	0	0	0	0	4.19
3. Project budget was determined to establish authorized cost baseline	8	38.1	7	33.3	6	28.6	0	0	0	0	4.10
4. Project Cost changes monitored and managed	4	19.0	8	38.1	9	42.9	0	0	0	0	3.76
Average Mean											3.93

In related study performed to project managers that aimed to identify the extent to which the different knowledge areas and their respective project management practices are implemented, cost management was among well-established knowledge areas (Gomes, Romao & Carvalho, 2021). This was aligned with previous studies, which stated that practices from the areas of

knowledge related to cost management is among frequently used practices because they provide metrics and indicators easy to understand, update and handle during the execution of a project (Papke-Shields et al., 2010).

4.3.5 Project Quality Management

Respondents varied in their response for the practice of project quality management processes in the organization. A mean value of 3.52 was scored for the process on the development of quality management plan that showed this process was practiced. However, a minimum mean value of 3.38 was scored for translation of quality standards into executable and quality activities that indicated weakness in practicing for the projects.

For questions asked if quality standards were controlled for performance assessment and ensure project deliverables, 47.6% of them were neutral or uncertain for its practice in the organization. The mean value of this process was 3.43 which can be concluded that its practice level was medium.

Table 4.11: Response statistics on practice of Project Quality Management

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Quality management plan that identifies project quality standards and its deliverables was developed	2	9.5	10	47.6	6	28.6	3	14.3	0	0	3.52
2. The quality standards were translated into executable quality activities	2	9.5	7	33.3	9	42.9	3	14.3	0	0	3.38
3. Quality standards were controlled to assess performance and ensure project deliverables	2	9.5	7	33.4	10	47.6	2	9.5	0	0	3.43
Average Mean											3.44

From the findings, it can be concluded that most of the responders were neutral on the practice of project quality management. Thus, the average mean, which is 3.43 significantly imply that

quality management practice were not well implemented. Table 4.11 summarized the respondent's data statistics and mean values. This finding indicated that project teams overlooked the application of quality management. In related study done on the contribution of the knowledge Areas to project Success (Gomes et al, 2019), project teams do not consider knowledge areas on risk management as a significant influence on project success.

The knowledge area of quality management is among the most affected by the ignorance of the most in a survey conducted by Kopeckova and Machal, 2016 to identify the level of knowledge and skills of project managers. Scholars emphasize the importance of knowledge areas on quality management. "Quality must be on an equal level with project scope, time, and cost. If a project's stakeholders are not satisfied with the quality of the project management or the resulting products of the project, the project team will need to adjust scope, time, and cost to satisfy the stakeholder (Schwalbe, 2016).

4.3.6 Project Resource Management

Project Resource Management is one of key knowledge areas of project management that was considered in this study to collect data on its level of practice in the organization. Based on its 6 processes, there were six questions to respondents. The findings of the response indicated that it varied from Disagree to Strongly Agree on applying the different processes of knowledge areas.

As summarized in Table 4.12 above, the data collected in terms of frequency of responses and mean values. A mean value of 3.76 was scored for the development of resource management plan to define how to estimate, acquire, manage and utilize physical and team resources. Majority also agreed the practice of estimating material and team resources (Mean 3.86) and obtaining the required resources (mean 3.81) were carried out in the organization. There was relatively low practice to develop teams to improve competencies (mean 3.5) and carry out teams performance tracking, providing feedback, resolving issues and managing team changes (Mean 3.62).

The average mean value of the knowledge areas in project resource management was 3.73 which can be generally concluded that it was practiced in the organization. This finding is in line with a study by Gomes et al, 2019 that revealed project teams recognize the positive effect of human resource on project success. Organize, manage, and lead the project team, are important

processes of the human resources management. Projects are comprised of professionals with specific skills, assuming certain roles and responsibilities for implementing the project (Gomes et al, 2019).

Table 4.12: Project Resource Management response data and ratings

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Resource management plan was developed, that define how to estimate, acquire, manage and utilize physical and team resources	3	14.3	13	61.9	2	9.5	3	14.3	0	0	3.76
2. Material and team resources were estimated necessary to perform project work	5	23.8	11	52.4	2	9.5	3	14.3	0	0	3.86
3. Resources required to complete project work were obtained	3	14.3	13	61.9	3	14.3	2	9.5	0	0	3.81
4. Teams were developed to improve competencies and enhance performance (Team development)	4	19.0	6	28.6	9	42.9	2	9.5	0	0	3.57
5. Tracking Team performance, providing feedback, resolving issues and managing team changes were carried out	5	23.8	5	23.8	9	42.9	2	9.5	0	0	3.62
6. Resources were monitored and controlled to ensure they are available	3	14.3	13	61.9	2	9.5	3	14.3	0	0	3.76
Average Mean											3.73

4.3.7 Project Communication management

The survey result of the practice level on project communication management processes is depicted in Table 4.13. Many respondents (Mean value of 3.43) indicated that there was low practice on the development of project communication guidelines. However, there was good

level of practice for managing project information (mean 4.05) and meeting information needs of project and its stakeholders (3.76).

According to the finding, the average mean value was 3.76 which can be generally concluded that there was high practice in the organization that showed project team engagement to the practice of knowledge areas of project communication management.

The importance of communication management is also highlighted by AUC that promotes communication and engagement with Stakeholders in defining and implementing the African Agenda. According to the Project Management Institute, effective communication builds a bridge between diverse stakeholders who may have different cultural and organizational backgrounds as well as different levels of expertise, perspectives, and interests (PMI, 2017).

Table 4.13: summary of response statistics on Project Communication Management

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Project Communication guidelines were developed	5	23.8	5	23.8	7	33.4	2	9.5	2	9.5	3.43
2. Timely and appropriate collection, creation, distribution, retrieval, and disposition of project information were managed	4	19.0	14	66.7	3	14.3	0	0	0	0	4.05
3. Information needs of the project and its stakeholders were met.	3	14.3	12	57.1	4	19.1	2	9.5	0	0	3.76
Average Mean											3.75

4.3.8 Project Risk Management

As shown in Table 4.14, the mean value of respondents response ranges from 3.14- 3.95 with average mean of 3.44. This finding implied that the applications of project risk management knowledge area were overlooked in the organization.

When looking at the specific processes, majority of respondents were uncertain (neutral) on development of risk management plan (42.9%), 23.8% agreed, 19.0 % disagree and 14.3% strongly agree. 61.9% (Mean 3.9) agreed on the practice of project risk identification. The lowest mean value of 3.14 scored on the implementation of agreed-upon risk responses. The remaining three processes scored a mean value of 3.4 that grouped them in the category of medium level of practice.

Table 4.14 Project Risk Management practice

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Risk Management plan that defines how to conduct risk management activities was developed	3	14.3	5	23.8	9	42.9	4	19.0	0	0	3.33
2. Project risks were identified	4	19.0	13	61.9	3	14.3	1	4.8	0	0	3.95
3. Risk analysis were performed to identify the effect project risks	2	9.5	9	42.9	6	28.6	4	19.0	0	0	3.43
4. Risk response strategies to address project risks were developed	3	14.3	7	33.3	7	33.3	4	19.1	0	0	3.43
5. Agreed-upon risk responses were implemented	1	4.8	6	28.6	9	42.8	5	23.8	0	0	3.14
6. The implementation of risk responses were monitored	3	14.3	7	33.3	6	28.6	5	23.8	0	0	3.38
	Average Mean										3.44

Project Risk Management has scored the minimum mean values compare to other project management knowledge areas which can be generally concluded that it was not well practiced in the organization (Medium level).

A survey on the assessment of the level of knowledge and skills on regional development projects by Kopeckova and Machal, 2016, revealed that risk management is among the

knowledge areas affected the most by the ignorance of project managers. This finding is in line with the research which revealed that that project teams do not assign knowledge areas on risk management as a significant influence on project success (Gomes et al, 2019). However its importance is highlighted by Kerzner, 2017, as risk management practices can be beneficial to understand the potential risks and their respective effects; to capture an early warning signal; to have a clear direction on how to manage the risk and how to restore the process after the occurrence of the risk.

4.3.9 Project Procurement Management

The response statistics on project procurement management was shown in Table 4.15 below. Project procurement management consists of 3 main processes for which respondents were asked to provide the level of practice in AUC projects. The response on the development of project procurement plan scored a mean value of 4.67 which indicated that this process was widely practiced. The mean value for conducting procurement activities was 4.48 that also showed the engagement of project teams on this process. A relative small mean value (3.76) was scored for carrying out a process on managing procurement relationships, controlling contract performance and contract closure.

Table 4.15: Response rate for project procurement management practice

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Project procurement plan was developed	14	66.7	7	33.3	0	0	0	0	0	0	4.67
2. Procurement activities were conducted	10	47.6	11	52.4	0	0	0	0	0	0	4.48
3. Procurement relationships were managed, contract performance were controlled and contract closure were carried out	3	14.3	12	57.1	4	19.1	2	9.5	0	0	3.76
Average Mean											4.30

Based on the findings, the average mean value was 4.3. It can be concluded that the knowledge areas of project procurement management were well practiced in Infrastructure projects of African Union Commission. This showed the commitment of project teams and understanding its impact on project success. It was also highlighted that the procurement process is an area that is particularly important in the impact it has on project delivery, performance in quality, cost, cycle time and product responsiveness (Sanderson & Cox, 2008). The study by Gomes et al, 2019, also concluded that project teams recognized the importance of project knowledge areas on project procurement management to project success.

4.3.10 Project Stakeholders Management

Project Stakeholders Management practice was assessed based on the four processes of knowledge areas. The impact of project stakeholder management in inter-governmental organizations like African Union Commission is crucial for project success. Respondents' response statistics for project stakeholder's management practice was summarized in Table 4.16 below.

Table 4.16: Response statistics for Project Stakeholders Management practices

Factor Element	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean
	#	%	#	%	#	%	#	%	#	%	
1. Project Stakeholders were identified	12	57.1	7	33.3	1	4.8	1	4.8	0	0	4.43
2. Stakeholder engagement plan to involve based on their needs, expectations and potential impact on the project was developed	5	23.8	9	42.9	4	19.0	3	14.3	0	0	3.76
3. Active communications with stakeholders were done to ensure their engagements.	7	33.3	10	47.6	1	4.8	3	14.3	0	0	4.00
4. Stakeholder relationship was monitored	4	19.1	12	57.1	2	9.5	3	14.3	0	0	3.81
	Average Mean										4.00

Based on the findings from the survey, mean values for all process range from 3.76 – 4.43 and average mean of 4.00. Identification of project stakeholders scored the highest mean of 4.43 while development of stakeholder engagement plan was low at mean value of 3.76. It can be generally concluded that the processes of project stakeholders management were well practiced in the organization.

Related research showed that project team understands the impact of stakeholder management to the outcome of the project as well as to the organization. Project managers recognize that poor management of stakeholders has very unpleasant outcomes for the project and organization (Jepsen & Eskerod, 2009).

4.4 Assessment on the Organization's project Performances

This last section aimed to assess the effect of the organization's project performances in terms of completion within planned schedule, budget, set standards and meeting project objectives. The respondents were asked to rate their ratings based on Likert scale of 1-5, where 5 = Always, 4 = frequently, 3= Some Times, 2= Seldom and 1= Never. Interpreting the mean value of responses followed as suggested by Lee and Song (2015). Accordingly, the mean below 2.50 indicates low achievement, mean between 2.5 to 3.4 indicates moderate achievement and mean above 3.5 indicates high achievement.

Table 4.17: Respondents' Response statistics on the assessment of project performance

Factor Element	Always		Frequently		Sometimes		Seldom		Never		Mean
	#	%	#	%	#	%	#	%	#	%	
Completed within planned schedule	1	4.8	1	4.8	17	80.9	2	9.5	0	0	3.05
Completed within budget	1	4.8	9	42.8	8	38.1	3	14.3	0	0	3.38
Completed within set standards	1	4.8	10	57.2	8	38.1	2	9.5	0	0	3.48
Met project objectives	2	9.5	12	57.2	7	33.3	0	0	0	0	3.76
Average Mean											3.42

The results as depicted in Table 4.17, 80.9% of respondents replied that project were sometimes completed within planned schedule. A mean value of 3.05 implied that completion of project within baseline schedule was sometimes achieved. For completion of the project within baseline budget, 42.8% replied frequently achieved, 38.1% replied sometimes achieved and 14.3% rarely achieved. Its mean value of 3.38 implied that projects were sometimes completed within budget. The result for project completion within set standards revealed 57.2 % replied for frequently achieved, 38.1% for sometimes achieved, 9.5 % for seldom. The mean value of project completion within set standards was 3.48. Regarding meting project objectives, the result revealed that 57.2 % frequently achieved, 33.3 % sometimes, 9.5% always. Based on the mean value of 3.76, projects objectives were frequently met.

The findings indicated that the desired outcome of projects in terms of completing within baseline schedule, cost and standards were moderately achieved. This showed the need of improvements on the organization's project management practices. This is supported by Menon, 2015, stating that adopting project management best practices can produce the desired project outcome; thereby strategically help the organization to achieve its organizational goals and objectives. Though this study doesn't focus the impact of knowledge areas on project success, every Project Management Knowledge Area can potentially have an impact on project success according to PMI, 2013. As it was discussed in section 4.3 for the outcome of the assessment of project management practices, there were gaps in integrating all knowledge area processes to the organization's project management practices. Understanding project management knowledge areas to manage projects was revealed in a case study of assessing adoption of project management knowledge areas and maturity level (Rasid, A., et al. 2014). The findings indicated that almost 90% of the respondents agreed the importance of understanding the project management knowledge areas when managing projects.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary, conclusion, recommendations, research limitations and suggestions for areas of further research.

5.2 Summary of Findings

5.2.1 Demographic information of respondents

Among the participants involved in survey, 76 %(16) of respondents were in the age category of 40-49, 14.3 % (3) were above 50 and 9.5% (2) were in the age group from 30-39. Regarding gender representation, 76% (16) were male while the remaining 24% (5) were females. All participants hold a minimum of bachelor's degree or higher. 71.4 % (15) hold Postgraduate/ Master's degree, 14.3 % hold PHD and the other 14.3 % hold Bachelor's degree. In relation to respondent's job position in projects, 19.1% (4) were project managers, 33.3% were project coordinators and 47.6% (10) were project team members at expert level. The majority (42.9%) had work experience in project management between 6 and 10 years, 33.3% (7) had experience between 1 and 5 years and 14.3 % (3) had experience between 11 - 15 years.

5.2.2 Findings on Project management practices

The following are the summary of the findings based on the data analysis in chapter four.

- The result for project Integration management practice showed that one of its processes on managing change control to carry out project change request was moderately practiced. However based on the cumulative result of all its knowledge area processes, it can be concluded that project integration management was highly practiced in the organization.
- The findings on project scope management, cost management and resource management revealed that the extent of practice for all of the knowledge area processes was high.
- For the case of project schedule management, the result showed that the organization has high practice for processes in defining list of activities, sequencing the activities, estimating

activity duration and developing project baseline schedule. The practice on developing schedule management plan as well as monitoring and managing changes to the baseline project Schedule was medium. However based on the average mean value, the extent of practice on schedule management knowledge area processes was high.

- The findings on project quality management as well on project risk management revealed that the practice level for both was medium. These two were the least practiced in the organization compared to other management knowledge areas.
- Project communication management assessment showed medium level of practice on developing project communication guideline. However the average result showed that the organization highly implemented projected communication management practices.
- Project procurement management was the highest practiced knowledge areas in the organization. In particular, majority of respondents strongly agreed on good practice of developing project procurement plan and identification of procurement activities.
- Regarding project stakeholders management, the extent of practice for all of its knowledge area processes was high according to the majority respondent's agreement.

5.2.3 Findings on Project performances

The effect of organizations' project management practice on the perceived project performance was assessed in terms of completion based on schedule, budget, set-standards and meeting project objectives. According to the findings, 80.9% respondents agreed that projects were completed sometimes within project baseline schedule. Similar results were found for completion of projects within baseline budget and within set standards in which majority agreed they were sometimes achieved. However regarding on completion of the project based on project objectives, the findings indicated that it was frequently achieved.

5.3 Conclusions

The objectives of the study were to assess the extent to which the project management knowledge areas were implemented in the organization, to assess the organization's perceived project performance as well as to identify areas of improvement to the organization's project management practices in terms of these 10 knowledge areas of project management.

According to the findings, it can be generally concluded that the project management knowledge areas on procurement, stakeholder, scope, schedule, cost, integration, resource, and communication were widely practiced even though there were specific process in each of the knowledge areas that needs improvement. However the knowledge areas related to quality and risk management seemed to be overlooked and contains least practiced project management processes. Quality management consists of processes to ensure that quality standards of the project are met. Similarly risk management involves processes like risk identification, performing risk analysis and implementing risk responses. Improving the practice of these project management processes is important to project success.

The assessment of the organizations' existing project management performance indicated that most of the projects were not completed within baseline schedule, budget as well as set standards. However the organization frequently met the project objectives.

This study would provide the basis to determine how project management practice in the organization can be productive by improving the implementation of low practiced project management processes in accordance with widely recognized and used project management practice guide to PMBOK.

5.4 Recommendations

The following recommendations are based on the findings of this study which was assessed in accordance with the best practice framework of PMBOK guide. It aimed to improve the existing project management practices where the gap was identified for specific process of project management knowledge areas.

- There is a need to improve the development of schedule management plan that is essential to manage project schedules. Monitoring and managing schedule changes to the baseline project Schedule is also another process in project schedule management knowledge areas that the organization should focus to improve it.
- The importance of practices on project quality management and project risk management knowledge areas should not be overlooked. There should be more efforts to implement all activities in these two knowledge areas.

- Strong emphasis should be given on improving the practice of project communication management in particular for development of project communication guidelines. This will address dealing with the various stakeholders' involvement in the organization.
- Improving the implementation of monitoring and controlling actives in each of project management knowledge areas helps the organization to track, analyze and report on relevant information throughout the lifecycle of the project.
- Providing capacity building for project team members on project management best practices is helpful to manage successful project.

5.5 Areas of Further Research

This study only covered project management practices in Infrastructure projects. Even though the sample taken considers key project team members, it was small sample compared to the overall size of the organization. Future studies need to be extended to large samples including all portfolios to ensure the accuracy required for a sector-wide analysis.

Furthermore, this study assessed only the extent of project management practice based on the 10 project management knowledge areas which is consists of 49 processes. However assessment of project management tools and techniques that are used by organization is an area that also needs further research.

Moreover a study on the assessment of factors that influence project successes for an inter-governmental organization like African Union Commission helps to build project management methodology to be adopted as sector wide practices in the organization.

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Appendix: Research Questionnaire

Addis Ababa University

School of Commerce

Graduate program

Questionnaire

Dear Sir/Madam,

This questionnaire is prepared to collect data for a thesis paper on "Assessment of Project Management Practices: a case for African Union Commission" as a partial fulfillment for the requirement of MA degree in Project Management. The information acquired will solely be used for academic purpose and confidentiality is at the heart of this study. You are kindly requested to provide your genuine, honest and timely response to the questions.

Please note that you are not required to give your name in this questionnaire. The online version of the questionnaire is also completely anonymous.

Thank you in advance for devoting your time and energy to complete the questionnaire.

Jemal Hussien
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Email: jemalhussien@gmail.com

Part I: Background information

Please thick your response in the suitable box.

1. Sex:
   A) Male ☐ B) Female ☐
2. Age Group:
   A. 18-30 ☐ B) 30-39 ☐ C) 40-49 ☐ D) Above 50 ☐
3. Level of Education:
   A) PHD ☐ B) Post Graduate ☐ C) Bachelor / Undergraduate ☐
   D) Diploma / Certifications ☐ E) If other, please specify _____
4. Job category:
   A) Project Coordinator ☐ B) Project Manager ☐ C) Project Member ☐
   D) Support Staff ☐ E) if other, please_____
5. Work experience on AUC projects?
   A) 0 - 5 years ☐ B) 6–10 years ☐ C) 11-15 years ☐
   D) Above 16 years ☐

Part II: Project management practices

Please indicate your view to what extent you agree or disagree in practicing the following project knowledge areas and processes. (Please thick (X) on your selected response)

(**5=Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree**)

Factor Element	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
Project Integration Management					
1. Project Charter was developed, that formally authorizes existence of a project and authorizes to apply organizational resources.					
2. Project management plan was developed					
3. Project activities were managed and directed as defined in the project management plan					

Factor Element	5	4	3	2	1
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4. Project knowledge (the use of existing knowledge and creating new knowledge to achieve project objectives) was well managed					
5. Work monitoring scheme were in place and practiced					
6. Change control was carried out to manage all change requests					
7. Project closure is carried out to formally complete a project or phase					
I. **Project Scope Management**					
7. Scope management plan that documents how the project will be defined, validated, and controlled was developed					
8. Project Requirements were collected					
9. Project scope (description of the project or product) was defined					
10. Work Breakdown Structure (WBS) is created. WBS subdivides deliverables and project work in to smaller work packages and activities.					
11. Completed project deliverables were validated					
12. Scope changes were controlled and evaluated to the scope baseline					
II. Project schedule Management					
7. Schedule management plan was developed					
8. List of Activities were defined					
9. Sequence of project activities were identified					
10. Durations needed to complete activities with resources were estimated					
11. A baseline project schedule were developed					
12. Changes to the baseline project Schedule were monitored and managed					
III. **Project Cost Management**					
5. Project Cost Management policies and guidelines were developed					

Factor Element	5	4	3	2	1
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6. Costs needed to complete project work were estimated					
7. Project budget was determined to establish authorized cost baseline					
8. Project Cost changes monitored and managed					
IV. **Project Quality Management**					
4. Quality management plan that identifies project quality standards and its deliverables was developed					
5. The quality standards were translated into executable quality activities					
6. Quality standards were controlled to assess performance and ensure project deliverables					
V. **Project Resource Management**					
7. Resource management plan was developed, that define how to estimate, acquire, manage and utilize physical and team resources					
8. Material and team resources were estimated necessary to perform project work					
9. Resources required to complete project work were obtained					
10. Teams were developed to improve competencies and enhance performance (Team development)					
11. Tracking Team performance, providing feedback, resolving issues and managing team changes were carried out					
12. Resources were monitored and controlled to ensure they are available					
VI. **Project Communication management**					
4. Project Communication guidelines were developed					
5. Timely and appropriate collection, creation, distribution, retrieval, and disposition of project information were managed					

Factor Element	5	4	3	2	1
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6. Information needs of the project and its stakeholders were met.					
VII. **Project Risk Management**					
7. Risk Management plan that defines how to conduct risk management activities was developed					
8. Project risks were identified					
9. Risk analysis were performed to identify the effect project risks					
10. Risk response strategies to address project risks were developed					
11. Agreed-upon risk responses were implemented					
12. The implementation of risk responses were monitored					
VIII. **Project Procurement management**					
4. Project procurement plan was developed					
5. Procurement activities were conducted					
6. Procurement relationships were managed, contract performance were controlled and contract closure were carried out					
IX. **Project Stakeholder Management**					
5. Project Stakeholders were identified					
6. Stakeholder engagement plan to involve based on their needs, expectations and potential impact on the project was developed					
7. Active communications with stakeholders were done to ensure their engagements.					
8. Stakeholder relationship was monitored					

Part III: Project Performance

Based on your experience of managing projects in AUC, please indicate how often the following goals are achieved. (Please thick (X) on your selected responses).

(Always = 5, Frequently = 4, Sometimes = 3, Seldom = 2, Never = 1,)

Project Goals	5	4	3	2	1
	Always	Frequently	Sometimes	Seldom	Never
1. Completed within planned schedule					
2. Completed within budget					
3. Completed within set standards (quality)					
4. Met project objectives					