SCHOOL OF GRADUATE STUDIES

PROJECT MANAGEMENT

AN ASSESSMENT OF CONSTRUCTION PROJECT PLANNING, MONITORING AND EVALUATION PRACTICES: THE CASE OF ARMY FOUNDATION

BY

FETENE KINFE

May, 2021

ADDIS ABABA, ETHIOPIA

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ID NO. SGS/0566/2011A

THESIS SUBMITTED TO ST. MARY UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PROJECT MANAGEMENT

May, 2021
ADDIS ABABA, ETHIOPIA

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APPROVED BY BOARD OF EXAMINERS

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Internal Examiner	**Signature**

DECLARATION

I, Fetene Kinfe, hereby declare that the thesis entitled “An assessment of construction project Planning, monitoring and evaluation practice the case of Army Foundation,” submitted by me to the award of the Degree of Master of project management from St. Mary’s University School of Graduates Addis Ababa, is original work and it hasn‟t been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

FETENE KINFE Signature ----------

St. Mary’s University School of Graduates Date----------…

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May, 2021Addis Ababa-Ethiopia

ENDORSEMENT

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

MULUADAM ALEMU (PhD) ----------

Advisor **Signature**

Acknowledgements

First and for most, my heartily thanks go to Almighty God, for his kindly provision of Knowledge,Wisdom, inspiration and diligence required for the successful completion of this research and for bringing my dreams into reality.

I am deeply indebted to my advisor Muluadam Alemu (PhD) whom during this period has not only kept me on track, but provided invaluable advice and support.

Special thanks to my beloved wife Elsabete Melaku for her unfailing support, patience and sacrifice in making this thesis come to culmination; and to my children Hiwan who deserve my deepest appreciation for giving me spirit to complete this research without them. Kind gratitude and sincere acknowledgment to all Army Foundation supported me during this research study.

Thank you

Fetene Kinfe

Acronyms/Abbreviations

AC----------Actual Cost

ACWP----------Actual Cost for the Work performed

BCWP----------Budgeted Cost of Work performed

BCWS----------Budgeted Cost of Work Schedule

CV----------Cost Variance

EEA---------- Ethiopian Economic Association

EV----------Earned Value

EVT----------Earned Value Technique

GDP---------- Gross Domestic Product

MOND----------Ministry of National Defense

OSHA---------- Occupational Safety and Health Administration

PMBOK----------Project Management Body of Knowledge

PV----------Planned Value

SV----------Schedule Variance

UNDP----------United Nations Development Program

WBS----------Work Break down Structure

WHS----------Work Health and Safety

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Abstract

Construction project planning, monitoring and evaluation have a major role in the process of construction project management. The aim of this thesis is to assess the practice of construction project planning, monitoring and evaluation in Army Foundation. Literature about planning, monitoring and evaluation was reviewed. Questionnaire were developed and tested before the actual administration. A total of 73 questionnaires were distributed as follows: 44 (60.3%) Military Members and 29 (39.7%) to Civilan professional engineers. About 70 questionnaires were received (95%) as follows: 41 (59%) from Military Members and 29 (41%) from Civilan professional engineers as respondents. A semi-structured interview was made and feedbacks were gathered. Data obtained from different sources were analyzed using both quantitative and qualitative approach and discussed simultaneously. SPSS version 20 is applied for processing and analysis purpose. Based on the study an assessment of construction project planning, monitoring and evaluation practice of the Army Foundation. The study revealed that there are many problems in planning, monitoring and evaluation of Army Foundation construction projects. The most important were poor planning practice, absene of well organized project planning, monitoring and evaluation.

Therefore, plans should prepared during the project mobilization time by considering risks, with the appropriate team members and planning software, reports should be evaluated on time and to resolve issues on time to complete the project on time,with expected quality and profit.

Keywords: *Ethiopian Army Foundation, Construction project planning, monitoring and evaluation.*

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CHAPTER ONE

1. INTRODUCTION

This first chapter deals with the problem under examination in this dissertation. It contains background of the study, statement of the problem, basic research questions, objectives of the study, the significance of the study, delimitation/ scope of the Study, the limitations of the study, definition of key terms and phrases and the way in which the dissertation is organized.

1.1. Background of the study

Construction according to EEA (2006/07) is as an economic activity directed to renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature, and other such engineering constructions as roads, bridges, dams, etc. Construction industry makes significant contributions to the socio-economic development process of a country.

The construction industry has important contributions to the Ethiopian economy, as demonstrated by its share in the GDP. For instance, the share of the sector in the total GDP averaged at about 8.5 percent in the period 2016 (World Econmical Form Report).

According to Yu-Ren and Edward (2008) well prepared project plan, monitoring and evaluation have an impact on the success of the projects. Many developing countries in the world are affected by poor planning, monitoring and evaluation in projects. Weakness in planning, monitoring and evaluation has been identified as one of the main reasons for the disappointing results of projects in Africa.

Ethiopia's economy has enjoyed a high rate of economic growth for the past decades IMF (2019) so to make this economic growth sustainable. The Country needs to deliver more electric power, roads and expansion of different infrastructural activities like building of hospitals, schools, telecommunication services and building of residential houses. These activities will be implemented through different projects and which will help for the development of the economy of the country.

When we come to Army foundation housing project, it is one of the few mega projects in Ministry of National Defense.which are currently implemented all Ethiopia regions are also affected by the same problem of project planning, monitoring and evaluation which in turn is causing for delay and increasing of cost.

Good planning combined with effective monitoring and evaluation can play a major role in enhancing the effectiveness of projects. Good planning helps us focus on the results that matter,while monitoring and evaluation help us learn from past successes and challenges and inform decision making so that current and future initiatives are better able to improve people‘s lives and expand their choices.

UNDP (2009) identified the following principles helpful of understanding inter-linkages and dependencies between planning, monitoring and evaluation. Without proper planning and clear articulation of intended results, it is not clear what should be monitored and how; hence monitoring cannot be done well. Without effective planning (clear results frameworks), the basis for evaluation is weak; hence evaluation cannot be done well. Without careful monitoring, the necessary data is not collected; hence evaluation cannot be done well. Monitoring is necessary, but not sufficient, for evaluation. Monitoring facilitates evaluation, but evaluation uses additional new data collection and different frameworks for analysis and monitoring and evaluation of a program will often lead to changes in program plans. This may mean further changing or modifying data collection for monitoring purposes.

Hidaya (2011) identified a number of problems that contractors introduced in the site which includes Poor planning and poor management and technical performance, no use of Work Break down Structure in most of the plans of the contractors and lack of team work among all parteis working in the project.The aim of this study is therefore to investigate deeply the practice of planning, monitoring and evaluation of construction project in Army Foundation.

1.2. Statement of the Problem

Planning, monitoring and evaluation can be a good way to achieve a goal, because without planning, monitoring and evaluation, we do not have a specific path to follow and our efforts can leads us towards undesired objectives or results. Without adequate planning, monitoring and evaluation, it is difficult to really understand what it will take to complete a project successfully. A viable project plan, monitor and evaluation serve as a road map for the execution process in the same way that a highway road map serves to guide a planned trip (Carstens & Richardson, 2013).

In many countries the construction industry has, however, attracted criticism for inefficiencies in outcomes such as poor quality, time and cost overruns. A major bottleneck facing the building industry is why projects are not being completed on time, at the budgeted cost and within specified standards. Chandra (2010) noted that building projects especially in the public sector compromise on quality and are not completed on time and have cost overruns.

According to the parties involved in Ethiopian building construction projects, most projects are not completed in conformity to the original plan. Pär Karlsson (2011) conducted an assessment on Potential improvements in Project Management methods in Ethiopia.

In house assessments undertaken at army foundation, a G^{+7} and G^{+9} construction project constructed in 12 different sites of the four major regional states of the country coupled with the case in Addis Abeba exhibit poor performance. The tewelve sites are located in Bahardar, Mekele, Awassa, Bishoftu, Adama and Addis Abeba respectively. The 12 sites of the construction are the five sites in addis abeba which are located Semete and kality. Semete No1,2,3 G^{+7} four G^{+9} ten and kality No 1 G^{+7} two G^{+9} thertine Housing Building, kality No 2 G^{+7} two G^{+9} nine Housing Building, Mekelle G^{+9} eleven Housing Building, Hawsa G^{+7} one G^{+9} nine Housing Building, Bishoftu G^{+9} five Housing Building, Adama G^{+9} two Housing Building, kality No 1 G^{+7} two G^{+9} thertine Housing Building, kality No 2 G^{+7} two G^{+9} nine Housing Building and It is worth nothing the fact that the foundation site at Bahardar is yet at the stage of excavation. The relation to the period of completion of the construction projects with exception of the Bahrdar site where land provision has been a problem for some time, all projects of housing buildings should have been completed by the end of March 2011 E.C, only Bishoftu G^{+9} five Hosing Building has managed to reach 48.25%. Having the contract agreement signed for 320 days all projects has registered significant delay. Specially, Semite No 2 G^{+9} Hosing building is the most under achieved project; having the original contract period completed one years before, the physical status of the project is still less than 6%. The basic factor behind the significant delay of this project according to few interviewee and official reports is the fact that the construction site for the project is not made clear from right off way problems; making the contractor unable to mobilize machineries in

the area. Two technical professionals who were interviewed suggested that even other few missed items are yet to be included; if decided will definitely increase the cost of the project due to the increased unit rates According to Army Foundation report 2012 E.C.

This study unlike the many previous studies, is making its best attempt to adequately assess the maior problems and come up with behind delay in time stipulated project performances. The study attempts to assess the practical implementation of planning, monitoring and evaluation, problems encountered during planning, monitoring and evaluation in the foundation and tries to indicate possible solution for the problems observed. As mentioned above project planning, monitoring and evaluation are aimed at increasing the performance of the project and meet the three main aspects of project objectives (Time, Cost and Quality).

Therefore, the overall intention of this study is to assess the practices of planning, monitoring and evaluation of construction project and its impact on performance level and evaluate the strength and weakness of the planning, monitoring and evaluation practice of Army Foundation.

The following are problems related with lack of proper planning, monitoring and evaluation of construction project of Army Foundation. These are delay of resource supply which we call the 4M‘s (manpower, machine, materials and money). Incomplete project work planning and problem of revising the schedule on time Problem of Submission of progress reports on time. Problem of Monitoring requested material, equipment and manpower both by siteis projects and the housing construction project. Improper usage of project mobilization time for planning. A problem of working as a team on projects master plan preparation with all concerned body Delays on project completion time on most of the foundation projects. Absent of project support by managements. Low technological bases to plan monitor and evaluate project activity, Poor working environment including low standards of safety and occupational hazards on construction sites. Inefficient procurement service and abscence of feedbacks on reported problems to projects from the management. These challenges have paramount impact on effective project implementation in the Army Foundation. Thus, this study is therefore designed to investigate the practice of planning, monitoring and evaluation of construction project in Army Foundation.

Even though the companies is using project planning, monitoring and evaluation in its project management process, the current status of this specific practice has never been studied before. Recognizing the current status of the company's project planning, monitoring and evaluation practice helps in making an informed decision and produce a lesson learned situation for future projects (IFRCS, 2011).

Previous studies by Abebe, (2015) and Stofile, (2014) argue that a poor project planning, monitoring and evaluation practices can lead to a poor project performance, erroneous decisions, inappropriate feedback on important situations, poor quality of outputs, low productivity, cost and time overrun, poor scope change management during variation and modifications works. The existence of an effective system is critical; this implies the importance of having an excellence project planning, monitoring and evaluation system is critical.

Existing conditions in the Army Foundation show that when the firm draws plan for its projects it is going to be based on many ideas and events, however this does not guaranty us that the plan is going to be implemented without any drawbacks. It is a well-known fact that during the project implementation stage, we might come across a lot of unexpected circumstances which we did not plan for during the planning phase (Sears, et.al, 2015). Hence the need to consistently monitor and evaluate the implementation of project plans is undisputable, till the end. In addition to that, similar studies state that the information gathered through project planning, monitoring and evaluation practices supports the organization through facilitating the achievement of its objectives and to make an informed decision (Ottosson, 2013).

Therefore, in order to fill this gap, this study will assess the current project planning, monitoring and evaluation practices of the Army Foundation and its impact on projects. The question of how and by whom it is done, as well as where and when the information for project planning, monitoring and evaluation process is gathered are also going to be studied. In addition to that possible recommendations will be forwarded with a strong believe that the company will be able to appreciate the benefits of its project planning, monitoring and evaluation practices. Finally, the study will point out the overall significance of the Army Foundation project planning, monitoring and evaluation practice and identify its strength and weakness too.

1.3. Basic Research Questions

This study in general, aims at answering what the project planning, monitoring and evaluation practice in Army Foundation are and more specifically to find answers to the following basic research questions.

- ✓ What is the current project planning, monitoring and evaluation practice of army foundation housing project?
- ✓ To what extent the Army Foundation planning, monitoring and evaluation in each case describe the existing of its project?
- ✓ How effective the project planning, monitoring and evaluation assess it in light of standard practice of the army foundation?
- ✓ What are the challenges for effective project planning, monitoring and evaluation practice at Army foundation?

1.4. Objective of the Study

1.4.1. General Objective

The general objective of this study is to examine the practices of construction project planning, monitoring and evaluation in Army Foundation.

1.4.2. Specific Objective

- ✓ To explore current project planning, monitoring and evaluation practice of Army Foundation housing?
- ✓ To assess the existing practice of planning, monitoring and evaluation in army foundation?
- ✓ To evaluate the practice of planning, monitoring and evaluation of construction projects in army foundation?
- ✓ To study the assess standard are practiced during the planning, monitoring and evaluation?

1.5. Significance of the study

The study has tried to examine the construction project planning, monitoring and evaluation practice of the study foundation against the planning knowledge areas and the level of use of different project management tools and techniques.

The study will provide lessons that will help Army Foundation and Housing Construction Project to improve its overall project performance thereby improving project planning, monitoring and evaluation knowledge within the foundation.

To this effect, the research findings are expected to contribute towards the project planning, monitoring and evaluation and management capacity of the public sector in particular and to the growth of project management knowledge in the country in general.

1.6. Delimitation (Scope of the Study)

The study focused on the assessment of construction project planning, monitoring and evaluation in Army Foundation. The sample respondents comprise only managerial and professional engineers of the foundation. It was also decided for the simplicity and reliability of data that was collected.The result of this study was mainly based on the opinion and ideas of the respondents who were selected randomly. Though, project planning, monitoring and evaluation is contesting issues which deserve time series data collection, the data collection for this study delimited to the opinion of respondents which is collected once. The study had delimited to descriptive method by using a systematic random sampling.

1.7. Limitation of the Study

A major challenge to the researcher is to put all his effort in collecting all the necessary data for this thesis as well as to have enough time to read all necessary literatures related concepts addressed by this paper. The trend in the foundation people refrain from giving out information which they consider that they are not authorized to do so. The major limitations of this researcher are institution to provide full information about project planning, monitoring and evaluation, lack of sufficient recent recorded.

The major constraints faced by the researcher whilst conducting this study were the non-availability of adequately published and documented data about Army Foundation project planning, monitoring and evaluation by the organizations which would have been useful if found.

1.8. Definitions

- **Institutional:** in this study the word institutional is used to describe Ministry of National Defense.

- **Army Foundation**: an organization that cares for its members for the maintenance of a high standard of moral and the fostering of a feeling of pride by providing services and facilities, which are tailored to suit the needs of its members and their dependents.
- **Construction**: the art and science to form material or immaterial objects, systems or organizations
- **Project**: a temporary endeavor undertaken to create a unique product, service, or result.
- **Planning**: answers the questions what is going to be done? How? Where? By whom? and When (in general terms, the project‘s start and end)?
- **Monitoring**: to be aware of the state of a system and may refer to observe a situation for any changes which may occur over time.
- **Evaluation:** is a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards.

1.9. Organization of the Paper

This research paper is organized in to five chapters. The first chapter deals with the introduction part which encompasses the background of the study, the statement of the research problem, objectives of the study, significance of the study, scope of the study and limitations of the study. The second chapter deals with the review of related literature. Chapter three focused on the research methodology, data collection and procedures, sample and sampling techniques, whereas the fourth chapter presented the result analysis and discussion of the data. Finally, conclusions and recommendations were presented under fifth chapter.

CHAPTER TWO

2. REVIW OF THE RELATED LITERATURE

This chapter tries to discuss definition and concept, construction propject, planning, monitoring and evaluation a construction project, monitoring and evaluation, empirical evidences and conceptual framework of the study to meet objectives of the study.

2.1. Definition and Concept

2.1.1. What is a project?

Different institutions and different authors provide different definitions for the concept of a project. (Lewis,2005,P.5) define a project as "is a one-time job that has a definite starting point, definite ending point, clearly defined scope of work, a budget, and is multi task in nature." (Wysocki, 2003,P.3) define a project as "Aproject is a sequence of unique, complex, and connected activities having one goal or purpose and that must be completed by a specific time, within budget, and according to specification." (PMBOK, 2004, P.4) also define a project as"A project is a temporary endeavor undertaken to create a unique product, service, or result."

To summaries from the above definitions a project is any series of activities and tasks that:

- Have a specific objective to be completed within certain specifications
- Have defined start and end dates
- Have funding (budget) limits (if applicable)
- Consume human and nonhuman resources (i.e., money, people, equipment)
- Are multifunctional (i.e., cut across several functional lines)

2.1.2. Characteristics of a project

Projects differ from programs and routine works. Projects have their own character which distinguishes them from other. Nicholas& Herman (2008) states the following seven Project characteristics.

1. A project involves a single, definable purpose, end-item, or result, usually specified in terms of cost, schedule, and performance requirements.
2. Every project is unique in that it requires doing something different than was done previously. Even "routine" projects such as home construction, variables such as terrain, access, zoning laws, labor market, public services, and local utilities make

each project different. A project is a onetime activity, never to be exactly repeated again.

3. Projects are temporary activities. An ad hoc organization of personnel, material, and facilities is assembled to accomplish a goal, usually within a scheduled time frame; once the goal is achieved, the organization is disbanded or reconfigured to begin work on a new goal.
4. Projects cut across organizational lines because they need the skills and talents from multiple professions and organizations. Project complexity often arises from the complexity of advanced technology, which creates task interdependencies that may introduce new and unique problems.
5. Given that a project differs from what was previously done, it also involves unfamiliarity. It may encompass new technology and, for the organization undertaking the project, possess significant elements of uncertainty and risk.
6. The organization usually has something at stake when doing a project. The activity may call for special scrutiny or effort because failure would jeopardize the organization or its goals.
7. Finally, a project is the process of working to achieve a goal; during the process, projects pass through several distinct phases, called the project life cycle. The tasks, people, organizations, and other resources change as the project moves from one phase to the next. The organization structure and resource expenditures slowly build with each succeeding phase; peak; and then decline as the project nears completion.

2.1.3. Project Parameters

Project parameters are constraints that are so important to the success or failure of the project. According to Wysocki (2003) there are five constraints operate on every project, these are Scope, Quality, Cost, Time and Resources

Scope is a statement that defines the boundaries of the project. It tells not only what will be done but also what will not be done.

Quality Two types of quality are part of every project that is product quality and process quality.

Cost is a major consideration throughout the project management life cycle. The first consideration occurs at an early and informal stage in the life of a project.

Time The customer specifies a timeframe or deadline date within which the project must be completed.To a certain extent, cost and time are inversely related to one another. The time a project takes tobe completed can be reduced, but cost increases as a result.

Resources are assets, such as people, equipment, physical facilities, or inventory that have limited availabilities, can be scheduled, or can be leased from an outside party. Some are fixed; others are variable only in the long term. In any case, they are central to the scheduling of project activities and the orderly completion of the project.

2.2. Construction Project

Researches show that construction projects have their characters which differentiate them from other types of projects. Hidaya (2011) stated that Construction projects require skilled management, as they are complicated and face many challenges and constraints, such as cost, time regulations, materials and environmental rules or customs. In construction projects several activities happen and take place at the same time, but still are connected and integrated. Therefore we need thorough and effective communications and cooperation to manage and control these activities. Construction projects are characterized as very complex projects, where uncertainty comes from various sources such as technical, legal, natural, social, economic, financial, commercial and Political; these may differ according to the specialty of each project.

According to Aburizk (2010) construction projects differ from other projects in that construction projects have the following features.

- Construction is typically undertaken at a fixed location or site, requiring a closer look at the logistical complexities involved. The building materials and resources required will have to be procured and taken to the site. Where the works are significant in scope, working space, traffic management, security, public health, safety and the environmental impact of the operations will all have to be given consideration.

- Weather creates uncertainty for any project. In Ethiopia most of the road projects closed on summer due to rain fall. In other parts of the world, temperature, snow, water, and sand can have a negative impact on the progression of works.
- In modern construction, the introduction of new materials and technologies, methods, and requirements for sustainable or green development, can all contribute toward increasing levels of risk and complexity. Thorough project planning, design, research, and procurement can aid in their reduction and management.
- The uniqueness of construction projects also mean that the external influences and constraints would be different, yet subject to change throughout the project timeline. These can include rates of technological change, sources of financing, market forces, climate change, politics, and changing client requirements.
- Finally, differing members of the project organization to have balance conflicting Commercial business interests and against achieving the aims and objectives of the project. For example, contractors may focus more on profit maximization and less on the other parameters which define project success. Clients on the other will seek to have the asset delivered in the shortest time possible, at the lowest cost, with the highest quality. Consultants, based on their contractual arrangements, may seek to also maximize their incomes, by limiting their time on the project. This offers a very complex landscape which has to be navigated, and often doesn't work to the best advantage of the project itself.

2.2.1. Project Parties in Construction

There are many parties involved in construction projects. But according to Rohaniyati (2009) the primary construction project parties include the following;-

1. **Employer/ Owner:** define project requirements, function and services. Also, owners are responsible for providing financing support to a project.
2. **Contractors:** The Contractor shall carry out the works properly and in accordance with the contract. The contractor shall provide all supervision, labor, plant and contractor‘s Equipment which may be required. All materials and plant on site shall be deemed to be the property of the employer. The Contractor shall carry out the works properly and in accordance with the contract. The contractor shall provide all

supervision, labor, plant and contractor‘s Equipment which may be required. All materials and plant on site shall be deemed to be the property of the employer.

3. **Designer (architect /engineer)** the third party of a project who is responsible to interpret the idea and need of the owner in to a tangible blue print. And also watch and supervise the Works and to test and examine any materials to be used or workmanship employed in connection with the Works.

Table 2.1. The parties and their roles

CONTRACT PARTY	**MAJOR ROLES**
Employer	Creates the necessity to build the facility Provides financial support to develop the project Determines the scope of the work Most important player of the process
Engineer	Responsible for the project design Idealizes the final result of the project Develops drawings and specifications and prepares other contract documents administers the contract and supervises the works
Contractor	Creates the facility based on the design Brings the project into reality Manages different resources to build the facility

Source Rohaniyati (2009)

2.2.2. Construction Project Life Cycle

Every project, not just those in the construction industry, goes through a series of identifiable phases, wherein it is ‘born’, it matures, it carries through to old age and it ‘expires’, Lawrence (2003) states six phases of the construction project life cycle.

2.2.2.1. Pre-Project Phase

A construction project begins with an idea or the wish for more efficient provision of some public service. Whether the idea will be converted into a completed project will be decided during the planning and design phase. The owner must decide the type of project, select design professional and consultant.

2.2.2.2. Planning and Design Phase

The project is fully defined and made ready for contractor selection and deployment during the Planning and design phase. The consultant define the project‘s objectives, consider alternative ways to attain those objectives and ascertain whether the project is financially feasible. In this process of planning and feasibility study, a project brief will be developed, more details will be set forth in a program statement, various sites may be investigated, public input may be sought, a preliminary cost estimate will be prepared and a final decision on whether to proceed with the project will be rendered.

The design professional will use the results of the planning efforts to develop schematic diagrams showing the relationships among the various project components followed by detailed design of the structural, electrical and other systems. The output from this design development effort is used in the final stage, wherein contract documents are prepared for use in contractor selection and installation work at the construction site (Lawrence, 2003).

2.2.2.3. Construction selection Phase

In anticipation of selecting a contractor, the owner must decide the method either an open selected contractors will be invited to submit offers. The consultants open the submittal, and evaluate the tenders, the selection of the successful contractor and the finalization of the construction contract (Lawrence, 2003).

2.2.2.4. Project Mobilization Phase

After the contractor is selected, a number of activities must be completed before installation work can begin at the project site. The contractor hand over the construction site all the drawings and specification. The contractor prepare detailed program for the construction activities and submit it to the consultant for approval and budget. The worksite must be organized, with provisions for temporary buildings and services, access and delivery, storage areas and site security. The process of obtaining materials and equipment to be incorporated into the project must be initiated and arrangements for labor, the other essential resource, must be organized. With the completion of this phase, it is finally time to begin the actual field construction (Lawrence, 2003).

2.2.2.5. Project Operation Phase

In presenting the contractor‘s activities on the construction site, we will suggest, perhaps to simply, that the responsibilities involve three basic areas: monitoring and control, resource management and documentation and communication.

2.2.2.6. Project Closeout and Termination Phase

Finally, as the project nears completion, a number of special activities must take place before the contractor‘s responsibilities can be considered complete. There are the various testing and startup tasks, the final cleanup, various inspections and remedial work that may result from them and the process of closing the construction office and terminating the staff‘s employment (Lawrence, 2003).

2.3. Planning, Monitoring and Evaluation a Construction Project

According to UNDP (2009) Good planning, monitoring and evaluation enhance the contribution of contractors by establishing clear links between past, present and future initiatives and development results. Monitoring and evaluation can help organization extract relevant information from past and ongoing activities that can be used as the basis for programmatic fine-tuning reorientation and future planning. Without effective planning, monitoring and evaluation, it would be impossible to judge if work is going in the right direction, whether progress and success can be claimed, and how future efforts might be improved.

According to Merith *al.et* (2013) “managing a project involves continually planning what to do, checking on progress, comparing progress to plan, taking corrective action to bring progress into agreement with the plan if it is not, and replanning when needed”.

2.3.1. Planning a project

Every project needs proper management to meet its objective. PMI (2001:6) defines project management as application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing" Every project needs proper management to meet its objective.

PMI (2001:6) defines project management as application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is

accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing"

UNDP (2009:7) define planning as the process of setting goals, developing strategies, outlining the implementation arrangements and allocating resources to achieve those goals. It is important to note that planning involves looking at a number of different processes. Planning and scheduling concern two interrelated elements of construction management: strategy and time. Completing a project on time is a big deal. However, completing a project on time does not happen by accident. It takes a great deal of effort and planning. According to UNDP (2009) planning involves a number of different processes. Mubarak (2010:3) defined the planning process as those processes performed to establish the total scope of the effort, define and refine the objectives, and develop the course of action required to attain those objectives.

2.3.1.1. Reason for Planning

It is often said that "failing to plan is planning to fail". Due to this, the benefits associated with planning make it important for organizations to plan. Aiyetan (2010) enumerate these benefits as the following: Planning provides direction and helps managers as well as non-managers to focus on forward thinking; it creates a participatory work environment; it reduces the impact of change. In a turbulent environment, planning enables managers to anticipate change and to develop appropriate responses; it reduces the overlap of activities. When means and ends are clear, the overlapping activities and wasteful activities become obvious, and Planning sets the standards to facilitate control. Planning sets objectives, and in so doing it complements the control function. Controlling enables performance to be compared against the established objectives. If significant deviations occur, corrective steps can be taken. Without planning, control cannot take place.

According to Jackson (2010) project planning have to be developed by a team of individuals from different departments and the team have to the project schedule consider details and elements of the job, the materials, labor, subcontractors, and equipment that it will take to complete the project. Also they have to consider all the factors that influence the efficient use of those resources. They will have a chance to ponder and discuss the circumstances that could slow down the process and cause the

project to be delayed. They will have an opportunity to develop the strategy that will carry the project to a successful completion.

2.3.1.2. Planning Steps

Jackson (2010) enumerates the following six steps of planning.

1. Project objectives, requirements, and scope are set. These outcome elements specify project end-items, desired results, and time, cost, and performance targets. (What, for how much and when?) The scope includes specific acceptance requirements that the customer uses to determine acceptability of results or end items. Everything specified in these requirements must be completed during the project to the customer‘s satisfaction.
2. The specific work activities, tasks, or jobs to achieve objectives are broken down, defined, and listed. (What?) Types of Activities include
   - **Production activities:** These activities identify tasks that are associated with the physical building of the project, such as pouring concrete foundation, erecting structural steel, or hanging acoustic ceiling.
   - **Procurement activities:** These activities are primarily associated with obtaining materials and equipment for the project. They can be some of the most crucial activities in the schedule and, if not properly considered, can cause major delays on the project.
   - **Administrative activities:** These activities are mostly associated with contract administration tasks such as permitting, submittals, inspections, and testing. All of these activities can eat up a lot of time and are probably some of the most unpredictable activities on the schedule. Although a number of these types of activities should be integrated into the detailed schedule, sometimes they are assembled into a special schedule.
3. A project organization is created specifying the departments, subcontractors, and managers responsible for work activities. (Who?)
4. A schedule is prepared showing the timing of work activities, deadlines, and milestones. (When, in what order?)
5. A budget and resource plan is prepared showing the amount and timing of resources and expenditures for work activities and related items. (How much and when?)

6. A forecast is prepared of time, cost, and performance projections for the completion of the project. (How much time is needed, what will it cost, and when will the project be finished?)

2.3.1.3 Mistakes in planning

According to Talargie (2004) project planning is a fundamental and critical task of project management. Good planning is a basis for success but most of Ethiopian contractors fail in proper planning and makes mistakes.

Lewis (2003) states five common mistakes people makes in project planning.

Mistake 1: Not involving in the planning process the people who must do the work (Unilateral Planning).This mistake is made when the project manager plans a project for the group and turns it over to them to execute. The major reason this occurs is because no one individual can possibly think of everything in a project."No project can succeed when the team members have no commitment to the plan, so the first rule of project planning is that the people who must do the work should help plan that part of the project. Not only will you gain their commitment to the plan, but you will most likely cover all of the important issues that you personally may have forgotten." Therefore as a rule the first rule of planning is that the people who must do the work should participate in the planning.

Mistake 2: Ready-fire aim. People are convinced they don't need a plan, planning is wasting time no time to plan just start the work because planning needs time which can be used for accomplishment of the work .

Mistake 3: Planning in Too Little Detail (Broad-brush planning). Not incorporating all the plans for the project .ignoring some the project activity in planning.

Mistake 4: Planning in Too Much Detail (Micro planning). Planning in more detail which needs more effort to control the plan itself. The principle is "Never plan in more detail than you cancontrol."

Mistake 5: Failing to plan for risks. Not considering risks in plan, to ignore probable risks is not a "can-do" attitude but a fool hardy approach to project management.

2.3.1.4 Types of planning

As discussed above before executing the work the activities listed have to be planned well and the activities have to be planned neither in too much detail nor in more detail. According to Lewis (2003) planning answers the following questions shown:

1. What must be done?
2. Who will do each task?
3. How long will each task take?
4. What materials, supplies, and equipment are required?
5. How much will each task cost?

In construction works the following plans have to be prepared from the planning teams

- **Work schedule**. The work schedule includes at least planned start and expected finish dates for each detail activity.
- **Resource planning** - Resource planning involves determining what physical resources (people, equipment, materials along with money) and what quantities of each should be used and when they would be needed to perform project activities
  - ✓ **Material Schedule**: planning construction material includes according to Subramani (2014) identifing type of material needed for the activity shall be determined based on company previous experience or standard breakdown documents. This is very important as it is a basis for the purchase of materials. The material should be linked with the duration of the activity to know the material requirement of the site along the course of time. The actual execution should also be checked to serve as a proof to the validation of the assumptions for future projects.
  - ✓ **Labour Schedule**: The labour schedule should clearly show the labour requirement of the activity. According to White & Fortune (2002) human resources plan is often over looked in construction projects. It involves identifying the people needed to do the job, defining their roles, responsibilities and reporting relationships, acquiring those people and then managing them as the project is executed .it should clearly state the trade of labour as well. Skilled Labour is becoming one of the constraint in the construction industry and stringent schedule should avail for recuiritng appropriate personnel in time and train and acquaint

with the company. Simply recruiting a labour from the market and sending him directly to the job would not make companies profitable. A worker should be trained to be well familiar with how activities in the site shall be done, safety rules and regulations company rules and regulations, workers responsibilities and others.

- ✓ **Equipment Schedule**: The equipment schedule according Subramani *et.al*, (2014) should put the type of machinery needed for an activity and the duration.

- Procurement Planning- Procurement planning is the process of identifying which project needs can be best met by procuring products or services outside the project organization and should be accomplished during the scope definition effort. According to Yimam (2011) procurement plan involves consideration of whether to procure, how to procure, what to procure, how much to procure, and when to procure. If a contractor fails to plan for procurement the material requested either it will purchased early or purchased late. Early purchase may cause money tied up and late purchase will cause delay on construction progress as well as completion time.
- Payment Request Planning according to Jackson (2010) contractors usually take measurements and prepare payment request on a monthly basis but this have to be done with schedule .The schedule contains when to submit the take off sheets and payment certificates to the consultant for approval, when to get the approval and payments to be effected by the client. Most of the time the payments prepared by the contract instead of approved it will be returned due to lack of quality on the payment preparation.
- Risk Management Plan - Risk management is the systematic process of identifying, analyzing, and responding to project risk. Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on a project objective. Project risk includes both threats to the project`s objectives and opportunities to improve on those objectives. It has its origins in the uncertainty that is present in all projects, Known risks are those that have been identified and analyzed, and it may be possible to plan for them. The following major processes:
  - ✓ **Risk Management Planning**; deciding how to approach and plan the risk management activities for a project.

- ✓ **Risk Identification**; determining which risks might affect the project and documenting the characteristics.
- ✓ **Qualitative Risk Analysis**; performing a qualitative analysis of risks and conditions to prioritize their effects on project objectives.
- ✓ **Quantitative Risk Analysis**; measuring the probability and consequences of risks and estimating their implications for project objectives.
- ✓ **Risk Response Planning**; developing procedures and techniques to enhance opportunities and reduce threats to the project`s objectives.
- ✓ **Risk Monitoring and Control** monitoring residual risks, identifying new risks, executing risk reduction plans, and evaluating their effectiveness throughout the project life cycle.

Table 2.2 Construction Risks

Construction Risks	**Description**
Labor availability and quality of labor pool	If the contractor can‘t access the proper labor needed to Complete project, significant delays may be experienced. Quality issues resulting from an inexperienced workforce can also result in rework and cost overruns
Differing site conditions	Sometimes the conditions on the building site are not Communicated in the plans and specs. This discovery can lead to significant cost increases and delays.
Site access, traffic, parking issues	Projects located in highly congested areas can cause significant delays and storage issues for the contractor when trying to coordinate work.
Property damage or theft issues	The project site might be located in an area where security is an issue. The contractor has to protect the project, materials and equipment against vandalism and theft.
Coordination with utilities, adjoining	Significant coordination efforts must be made when tying in electrical, plumbing, water, and gas lines to main supply lines.

Neighbors, and so on	This often requires working with a local utility office, and their schedule and the contractor‘s schedule do not always coincide.Utility coordination can cause big delays.
Adverse weather	Weather is one of the most unpredictable construction risks. Contractors try to plan activities to avoid adverse weather conditions, but it isn‘t always possible. Having to place asphalt concrete in august in Addis Ababa can be a challenge and add cost to the job.
Labor disputes, strikes	The use of union labor on public projects is often a requirement in some jurisdictions. When this is the case, delayed labor negotiations, disputes, and even strikes are always a possibility.
Availability of materials	The architect may specify materials that are difficult to get or have significant lead times.
Safety	Safety should be paramount on any project. Injuries always impact construction operations at some level and should be avoided at all cost. OSHA inspections will also have an impact on the project workflow and schedule.

Source: Jackson (2010)

- Work Health and Safety Management Plan- a WHS management plan sets out the arrangements to manage work health and safety on a construction project. One of the problem in construction management is according to Olatunji (2010) is lack of a health and safety plan. The intention of a WHS management plan is to ensure the risks associated with a complex construction project are managed, as there are usually many contractors and subcontractors involved and circumstances can change quickly from day to day. The WHS management plan must be in writing. It should be easily understood by workers (including contractors and subcontractors). It may not be necessary to communicate the entire WHS management plan to all workers; however, they must be made aware of the parts that are applicable to the work they are carrying out.

All the above plans prepared for a specific project and revised if either there is a delay or accomplishment greater than the plan is a base for monitoring and evaluation.

- Quality plan: according to Jackson (2010) the best way to track quality performance on a project is to prepare and implement a comprehensive quality plan. quality of work is checked against design and specification and A number of administrative and physical checks are used to track quality:
    - Field observations
    - Submittals
    - Shop drawings
    - Mock-ups
    - Inspections
    - Field tests

2.4. Monitoring and Evaluating

Monitoring and evaluation are project management tools for decision making. According to Metalign (2015) while monitoring and evaluation are always referred to as the singular term M&E, they are two related but very different processes.

2.4.1. Project Monitoring

Is a systematic and continuous process of collecting, analyzing, and using of information for the purpose of management and decision making. As to Metaling (2015) Monitoring is a systematic and continuous process of collecting, analyzing and use information to track efficiency (efficiency measures how productively inputs such as money, time, equipment, personnel etc. were used in the creation of outputs). It is an activity, which assesses whether project inputs are being delivered, are being used as intended to create output and are having the initial effects as planned. It therefore, represents an exhaustive and regular examination of the resources, outputs and results of a project. Monitoring is an essential part of good management and is a tool to identify strength and weakness and provide the people responsible for the project with sufficient information to make the right decision at the right time to provide its quality.

According to Jody and Ray (2004) Monitoring gives information on where a project is at any given time (and over time) relative to respective targets and outcomes. It is descriptive in intent. According to Jackson (2010) the three primary elements associated

with managing the construction project are quality, cost, and time. These factors must be monitored throughout the duration of the job. Data for monitoring the project must be directly related to the project plans, outputs, schedules, budgets , materials purchasing invoices, worker time cards, change notices, test results and standards Monitoring & evaluation (2001) describes Monitoring involves**:**

- Establishing indicators of efficiency, effectiveness and impact;
- Setting up systems to collect information relating to these indicators;
- Collecting and recording the information;
- Analyzing the information; using the information to inform day-to-day management.

Monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives.

2.4.1.1 Types of Monitoring

According to Jody and Ray (2004) project monitoring includes the following major items.

- Physical project progress monitoring
- Finance progress monitoring
- Project quality Monitoring
- Assumption monitoring

Project Physical progress Monitoring

Physical project progress monitoring informs managers and owners of the project in keeping a check on weather activities in project are up to schedule. if not managers need to be able assess how significant the delay is , and weather remedial action needs to be taken .managing physical progress can be linked to managing time .the items to be considered during physical monitoring are

- Results of activities / project out puts
- Project inputs
- Progress of project according to objectives
- The way the project is managed and style of work.

Project milestones are the simplest method for monitoring physical progress monitoring. Wysocki (2003) describes mile stones as it is the main step to test if the goals are achieved, and it helps in discovering the status of the project. Milestones define certain

phases of the project, and represent decisive steps during the whole phases. They are set after a certain number of work packages that belong together in certain way. Effective monitoring and control over a project physical progress requires systematic performance analysis‘this calls for answering the following questions:

- Is the project as a whole (and its individual component) on schedule, ahead of schedule, or behind schedule?
- If there is a variation? Where did it occur, why did it occur, who is responsible for it, and what would be its implications?
- What is the trend of the physical performance? What would be the likely final cost and completion date of for the project and its individual components?

Financial progress/Expenditure/Monitoring

One of the budget monitoring or cost performance measurement techniques is the earned value technique (EVT). According to Lewis (2004), the earned value technique compares the cumulative value of the budgeted cost of work performed (earned) at the originally allocated budget amount, to both the budgeted cost of work scheduled (planned) and to the actual cost of work performed (actual). Budgeted cost of work scheduled (BCWS) or planned value (PV): Planned value is the budgeted cost for the work scheduled to be completed on an activity or work break-down structure component up to a given point in time.

Actual cost for the work performed (ACWP) or actual cost (AC): Actual cost is the total cost incurred in accomplishing work on the schedule activity or WBS component during a given time period. It is obtained by summing up the actual cost incurred to date in progressing work package. According to Lewis (2004), the most commonly used measures are cost variance (CV) and schedule variance (SV). Cost variance: CV is computed by comparing actual performance with the budgeted cost of work performed. CV equals EV minus actual cost (AC).CV = EV – ACThe cost variance at the end of the project will be the difference between the budget at completion (BAC) and the actual amount spent. Schedule variance: SV is computed by comparing budgeted cost of work performed with the budgeted cost of work scheduled.SV = EV – PV Schedule variance will ultimately equal zero when the project is ompleted because all of the planned values will have been earned. If schedule variance is positive, then the project is ahead of its

planned cost, i.e. earned value of the work performed is higher than the planned or schedule earned value. If it is negative than the planned or schedule earned value. If it is negative then the project is behind its planned cost.

Project quality Monitoring:

The first goal of the quality management plan is to get things done right the first time. Getting it right in construction doesn‘t always mean getting it perfect. Quality monitoring primarily deals with issues relating to conformance to the plans and specs. All of the materials, systems, and workmanship applied to the project must conform to the requirements set forth in the contract documents. Quality control is accomplished using a number of different mechanisms: submittals, mock-ups, shop drawings, inspections and testing which are all called for in the project manual.

Assumption monitoring:

You need to monitor and control the project risks. The process of writing down the risks and assessing them makes everyone on the project team aware of their existence and is a good place to start. You need to put together a risk log. This document lists all risks that you want to manage, identifies who is supposed to manage the risk, and specifies what should be done to manage the risk event.

- The ID Number always remains the same, even if the risk event has occurred and been managed. If you take the risk off of the list and file it elsewhere, don‘t assign the old number to a new risk. Leave the number the same or there will be a great deal of confusion.
- The Risk Description is a short statement of the risk event.
- The Risk Owner is the person who has to manage the listed risk.
- The Action to Be Taken lists what the owner is going to do to deal with the risk event.
- The Outcome tells you what happened. Other process to be monitored incldes procurement, payment, equipment and labour output monitoring.

2.4.1.2 Monitoring tools

There are three most widely used communication tools as mentioned by Metalign (2015) which includes progress reports, meetings and site observation**.**

Progress reports progress reports prepared at regular intervals for reviewing of the status of the project. Progress reports enable the assessments of progress and achievements and helps focus on results of activities, enabling the improvement of subsequent work plans. Reporting helps from the basis for decision-making and learning at the management level Reporting communicates how effectively and efficiently a project is meeting its bjectives.

Review meetings regular progress review meetings help managers to inform all the members about the general progress and to identify where and when problems are likely to arise and then to act to prevent them from occurring as much as possible.

Site Visits site visit is another important means of communication in the monitoring of project activities and output progress .site visit is an in-depth gathering of project information for monitoring purpose.

2.4.2. Project evaluation

Project Evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making. Evaluations, like monitoring, can apply to many things, including an activity, project, program, strategy, policy, topic, theme, sector or organization. According to UNDP (2009) the key distinction between the two is that evaluations are done independently to provide managers and staff with an objective assessment of whether or not they are on track. They are also more rigorous in their procedures, design and methodology, and generally involve more extensive analysis. However, the aims of both monitoring and evaluation are very similar: to provide information that can help inform decisions, improve performance and achieve planned results. Performance evaluation is the periodic evaluation of completed action to date to actually measure the degree of deviation completed activities and plans. Abubeker (1992) among others identified three for performance evaluation as follows:

- Computational methods which are used when deviations, whether favorable or unfavorable, are results of routine activities which are specific in nature, e.g. concreting. Such methods Include profit and loss accounting, job costing, direct comparisons, variance analysis, and ratio analysis.
- Judgmental approach; employed when deviations result from activities that are difficult to define with any reasonable degree of precision, e.g. supervision. In such

cases rationality would be applied and deviations would be measured against organization policies, rules and so forth. Judgments are made concerning whether actions are in conformity with generally accepted organization guides.

- Whenever there is a clash of judgmental values. Compromises should be used to determine the deviations.

Table 2.3.The difference between monitoring, reporting, and evaluation

	Montioring	**Reporting/Communcations**	**Evaluation**
When?	Daily activity	Can be weekly, monthly, quarterly	Can be weekly, monthly, quarterly.Usually at completion but slao at mid-term,ex-post
What action?	To verity	To report/ communicate	To evaluate
Why?	Improve the execution and the efficiency, adjust the work satge check Progress take remedical action	Be accountable to the board	Improve the efficiency and effectiveness of the project learn broad lessons applicable to others project provide accountability
Focus?	Resources,Porcesses, activities and outputs	Results outputs,benefits	Out puts, Oitcomes and bebefits/Impact
References?	Project plan, work stage Plans	Reports,Lessons Learned report, End Date report	Project document, business case, organization strategy
Done by whom?	The project manager	The project manager and the team manager	Exteral evaluatiors
To whom?	The executive, the quality assurances	The project board, the supplier, the users	Stakeholders,project board, the executive, the organization clients

Source: Jihane Roudias (2015)

Finally, Ireland (2006) states monitoring and evaluation as one of the management function called controlling and it is the process of monitoring, evaluating, and comparing planned results with actual results to determine the progress toward the project cost, schedule etc.

2.5. Empirical Evidences

The theoretical part of this paper shows project planning, Monitoring and Evaluation is very important instrument in project management. It is impossible to determine what is needed for projects to be completed as per the defined budget, cost, time and quality if there is no a properly defined project plan, Monitor and Evaluation.

When we come to the empirical literature review, a paper by Ashenafi (2008) indicates that project success is highly determined by the quality of the project plan, monitor and evaluation. The probability of successfully completing a given project will be high if it has a well-established plan, Monitor and Evaluation. A research paper by Garg and Yadav (2014) states that project planning and management is a key framework for successful completion of any project. Planning, Monitoring and Evaluation are very essential for any project with its tools and techniques.

So, from the reviewed literature project Planning, Monitoring and Evaluation are an aggregate of specific developed from each knowledge area. In addition preparing a sound project planning, monitoring and evaluation are a very important factor for successfully completing of any project.

2.6. Conceptual Framework

It has been learnt from the literature review that construction projects often necessitate project management knowledge, tools and techniques. It is also understood that project planning,Monitoring and Evaluation are one of the most important process in project cycle which entails all knowledge areas; such us project integration, scope, time, quality, cost, human resource, communication, risk and procurement.

This study derived its conceptual framework in relation to the above nine Project Management knowledge areas that are supposed to be applied during the Planning,Monitoring and Evaluation of a project cycle with the application of different project planning tools and techniques. To this effect; the study will assess the project planning, Monitoring and Evaluation practices of the Army Foundation.

Provide a synthesis of the reviewed interatage

Like any of the other developing countries in Africa Ethiopia as a developing nation, she is trying to grow its economy as much as possible and in as much amount. In order to achieve the growth needed projects are necessary. So there are many projects which are underway in the country. The main objective of projects is to help achieve the desired results. In order to achieve what is needed from projects there should be a proper project management. Project management has different parts and the project manager is also responsible for successfully completing the project. One of the main responsibilities of the project manager is to properly plan the project because planning, Monitoring and Evaluation what is needed for the project is the first thing that should be done and which also determines the success or failure of it. So the role of project planning, Monitoring and Evaluation is highly important for any project to be completed successfully. Planning, Monitoring and Evaluation in general, can best be described as the function of selecting the objectives and establishing the policies, procedures, and programs necessary for achieving them. It is desirable that the project manager be involved from project conception through execution. Project planning Monitoring and Evaluation must be systematic, flexible enough to handle unique activities, disciplined through reviews and controls, and capable of accepting multifunctional inputs. Successful project managers realize that project planning Monitoring and Evaluation is an iteractive process and must be performed throughout the life of the project.

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter is a review of the various approaches to data collection and analysis adopted in conducting this research; it explains the type of research strategy adopted the mode of data collection and the methodology used in carrying out this research. It includes the research design, sample size and sampling technique, data source and collection method, procedure of data collection, method of data analysis and questionnaire reliability test was presented.

3.1. Research Design and Approach

Based on the purpose of the study a descriptive research design is employed by the researcher assuming it will help to portray accurately the characteristics of the situation. According to Kothari (2008); the major purpose of descriptive research is description of the state of Affairs as it exists at present. Moreover, Based on the process of the research and the type of data involved, both qualitative and quantitative research approach were used. Because descriptive survey is an excellent vehicle for measuring a wide variety of unobservable data. The major research approach of the study was conducted to analysis quantitative method. Quantitative designs are plans for carrying out research oriented towards quantification and are applied in order to describe current conditions or to investigate relationships. The study also applied qualitative approach using structured interviews in order to allow the researcher provide elaborate interpretations of phenomena.

The two common data collection techniques and analysis procedures widely used in business and management research according to Saunders *et.al* (2009) are quantitative and qualitative methods. One way of distinguishing between the two is the focus on numeric (numbers) or non-numeric (words) data. Quantitative is predominantly used for any data collection technique (such as a questionnaire) or data analysis procedure (such as graphs or statistics) that generates or uses numerical data. In contrast, qualitative is used predominantly as a synonym for any data collection technique (such as an interview) or data analysis procedure (such as categorizing data) that generates or uses non-numerical data.

In order to make it suit to the collection of the required information from a larger sample and make the analysis easier, the study was used a quantitative method by incorporating a qualitative item in to the questionnaire. Mixed methods are especially useful in understanding contradicitions between quantitative results and qualitative findings. Reflects participants' point of view. Saunders *et.al* (2009) also divides research design in to longitudinal and cross-sectional, based on time horizon. Cross-sectional studies are the study of a particular phenomenon at a particular time. It includes research projects undertaken for academic courses. Cross-sectional studies often employ the survey strategy. Longitudinal research has capacity to study change and development over time the researcher is able to exercise a measure of control over variables being studied. In this study, the researcher had used a cross-sectional study because data were collected from a cross-section of management staff, Project managerial, Project Monitoring, Project cost Planning, procurement Planning, Bid evaluation and professional engineers management staff and professional engineers and others of the Army Foundation once.

3.2. Types of Data and Instrument of Data Collection

3.2.1. Type and Source of Data

Both primary and secondary data are obtained using different data collection methods and instruments. The source for primary data is the sample group which is management staff and professional engineers and others of the Army Foundation. Secondary data on the other hand will be obtained through the use of published and unpublished documents.i.e. Proclamation, Procedure, reports and other relevant written publications.

3.2.2. Instruments of Data Collection

Questionnaire Survey

A closed- ended questionnaire developed and the response options for a closed-ended question will be exhaustive and mutually exclusive. For this purpose nominal scale such as yes or no and a Likert scale measurement considered. For the likert scale, the items scored on the 5 point Likert scale ranging from strongly agree (5) to strongly disagree (1). The researcher has chosen to use the questionnaire survey because it is thought to be cheap and fast to administer; and even it increases the degree of reliability as well enhances the chances of getting valid data.

Interviews

An interview is conducted among management members. The content of the interviews were manipulated in a way that it would prove or disprove the feeling expressed by the participants who responded the questionnaire. All the interview question were structured and ten group based so that it match the contents of the items enlisted in the questionnaire. An interview is considered because it has the advantage of ensuring probing for more information, clarification and capturing facial expression of the interviewees.

Documentary Review

Documentation cannot be underestimated as it provides necessary background and much needed context both of which make re-use a more worthwhile and systematic endeavor. Secondary data is obtained through the use of published and unpublished documents. These include various reports, tender documents, contract documents, etc.

3.3. Population and Sampling Technique

3.3.1. Target Population

The population under study is 118 Military Members and 51 Civilan engineers, contractors and others direct participate in the project of army foundation.

3.3.2. Sampling Techniques

Both probability and non-probability sampling techniques are adopted in selecting the sample **Probability Sampling**;-The size of simple random sampling is include its ease of use and its accurate representation of the larger population determined based on a simplified formula proposed by Yamane (1967), as cited by Singh, A. & Masuku M. (2014). By considering the above size of target population: n = N/1+ N (e2) Where, n is sample size, N is the population size and e is the level of precision. A 95% confidence level and e = 0.05, is assumed for the purpose of determining sample size for this study. Based on this 73 questionnaire were distributed and 73 responses were obtained; out of which 3 were rejected; and this is believed to be sufficient.

Non-Probability Sampling: - Non probability is a type of sampling that adopts non randomness in selecting the sample. The study also adopted purposive sampling techniques technique is used for data collection. The questionnaires were distributed for army foundation vise executive, directorates. Project managers, Group leader, different

expertise, contractors and the necessary staff all foundation project On the other hand the contractors working with the study foundation with in the past three years are considered.

Table 3.1: Sample frame and proportionate

Strata	**Head Office**	**Housing Project**	**Total Population**	**Sample size**
Military Members	80	38	118(70%)	44 (60.2%)
Civilan engineers	12	39	51(30%)	29 (39.7%)
Total	**92 (54.4%)**	**77 (45.6%)**	**169 (100%)**	**73 (100%)**
Sample Size	44 (60.2%)	29 (39.7%)		73 (100%)
Actual Response	41 (59%)	29 (41%)		70 (95%)

(**Source: Army Foundation** Human Resource Directoratet **August, 2020**)

3.4. Procedures of Data Collection

The following data collection procedure has been followed by the researcher.

Data collection instrument has been developed by the researcher. The instrument is given to selected persons for review and updated /improved as per the comment forwarded. Then with the final questionnaire the researcher has made a short briefing on objectives of the research and its confidentiality.

The data collection was head office included administered and projects around Addis Ababa, Amhara, Oromia, South Nation Nationality and Tigray regional states where all of the Army foundation housing building projects by using both primary and secondary data sources. The primary data is collected using questionnaire and key informant interview guide and it is the main method for data collection. It contains close ended questions with five Liker-scale from (strongly agree to strongly disagree) and was distributed to respondents. The Secondary data collected from reports released by the foundation is used. Interviews were made and their feedback was gathered. As the researcher himself is working at the Inspector General Office, he had the opportunity to closely follow up on the collected of the survey. For the interview purpose, all the interviewees were contacted and time schedule was prepared. Then, the interview was conducted by him

Finally, the survey instruments distributed to respondents after a short briefing about the objective of the assessment. Similarly person to person interview is undertaken; relevant secondary data were also obtained

3.5. Methods of Data Analysis

The methods of analysis used in this research were selected due to the type of data available for the analysis and the objectives of the research. The questions in the questionnaire were qualitative; hence the descriptive method of analysis is best suited for the analysis. Such method was applied for the presentation, interpretation and discussion parts on various dimensions of the appropriate to analyze, interpret, tabulate and present the result of the study.The data gathered through questionnaires was coded, entered into computer and analyzed and presented in the form of tables by using SPSS Statics version 20 soft ware. The results of the interview questions were integrated to the responses of management and employees through questionnaires and were analyzed accordingly. Finally, conclusions were made based on the results/findings of the study and recommendations were forwarded on the basis of the data analyzed.

3.6. Result of Pilot Test

Pilot study of the questionnaire is achieved by as couting sample, which consisted of 09 questionnaires. These questionnaires were distributed to Group leaders, projects managers, at head office and projects around Addis Ababa first to give their comment on the questions and then to fill the questionnaire. The following items are summary of comments obtained from pilot study:

- There are few technical defects such as punctuations ,missing letters,etc
- It is well prepared and organized.
- Some choices should be added in part three of questionnaire in order to achieve more accurate and suitable choice of respondents.

After making some amendments according to the comments 09 questionnaires were distributed to test the reliability of the questionnaire and 09 questionnaires were returned. The reliability of an instrument according to Saunders et al. (2009) is the degree of consistency which measures attribute, in particular, whether or not it will produce consistent findings at different times and under different conditions, such as with different samples. Internal consistency involves correlating the responses to each question in the questionnaire with those to other questions in the questionnaire. It therefore measures the consistency of responses across either all the questions or a sub-group of the questions from the questionnaire. There are a variety of methods for

calculating internal consistency, of which one of the most frequently used is Cronbach‘s alpha. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. Cronbach's alpha can be written as a function of the number of test items and the average intercorrelation among the items.

A commonly accepted rule of thumb according to Saleh (2009) for describing internal consistency using Cronbach's alpha is as follows. $0.9 \leq \alpha \leq 1.0$ Excellent, $0.8 \leq \alpha < 0.9$ Good, $0.7 \leq \alpha < 0.8$ Acceptable, $0.6 \leq \alpha < 0.7$ Questionable, $0.5 \leq \alpha < 0.6$ Poor, $0.0 \leq \alpha < 0.5$ Unacceptable.

Table 3.2: Reliability sample testing scale

Case Processing Summary			
		N	%
Cases	Valid	9	100.0
	Excluded [a]	0	0
	Total	9	100.0
a. List wise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
0.997	83

Source: Survey data

The reliability scale result is 0.997 which indicates that there is a very high consistency. Therefore, it can be said that the questionnaire is reliable and ready for distribution for the population sample.

Due to individual and group variations in human experience, one cannot rely on only single method and producers. One way of securing validity is triangulation. It permits the verification of information and regarded as one way of securing validity (Cohen, 2005).

As a result, this study was applied different interconnected methods and producers as all of the data collection methods have their own strengths and weaknesses. By selecting complimentary techniques, researcher tried to cover the weakness of one technique with the strength techniques of data collocation so as to triangulate his findings.

3.7. Ethical Consideration

According to Saunders et al (2009) “Research ethics therefore relates to questions about how we formulate and clarify our research topic, design our research and gain access, collect data, process and store our data, analyze data and write up our research findings in a moral and responsible way.” An attempt was made to ensure all respondents to keep their identity and responses as confidential; so that all the information was given in full confidence. The questionnaire was distributed based on willingness of each respondent. In addition, the purpose of the questionnaire was clearly indicated in a cover letter along with the questionnaire.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Introduction

This chapter explains and discusses the results of findings based on the analysis done on the data collected. The result of the survey was discussed by triangulating the different source results: questionnaire results, interview and document review results. The discussion attempts to accomplish the objectives of the study and answer the research questions. A total of 73 questionnaires which dealt with construction project planning, monitoring and evaluation practice were distributed to the respondents of the Army Foundation. However 70 questionnaires were collected and usable responses (95.89% response rate), interview and relevant documents have been also reviewed.

The questionnaire contains variables which include issues such as work plan, manpower plan, risk plan, procurement plan, equipment plan, safety plan, quality and payment plans and monitoring and evaluation. All items in the questionnaire are arranged in a form of likert items to capture the feelings of respondents in scale ranging from 1 to 5. All the data has been analyzed in SPSS so that the accuracy of the information is maintained.

In addition to this a self-administered close ended questionnaire is included to support the researcher to discuss the results more clearly and an interview is conducted among management members. The content of the interviews were manipulated in a way that it would prove or disprove the feeling expressed by the participants who responded the questionnaire. All the interview questions were structured so that it matches the contents of the items enlisted in the questionnaire.

4.1. General Information about Respondents

The information generated to address the stated research objectives is solicited from respondents with diverse demographic characteristics. The first part of the questionnaire consists of the demographic information of the participants. This part of the questionnaire requested a limited amount of information related to personal and professional characteristics of respondents. Accordingly, the demographic variables about the respondents were summarized and described in different figures and tables. These variables include: educational qualification.work experience and job position.

Table 4.1 General Information about Respondents

Variables	Frequency	Percent
Educational qualification		
PHD	02	2.9
MA/MSC	13	18.6
BA/BSC	46	65.7
College diploma	09	12.9
Total	70	100
Work experience		
Less than 5 years	15	21.4
5-10 years	17	24.3
10-15 years	18	25.7
Above 15 years	20	28.6
Total	70	100.0
Job Description		
Directorates	01	1.4
Group Leader	08	11.4
Site Project manager	08	11.4
Other	53	75.7
Total	70	100

Source: Survey data

Table 4.1 shows general information about educational qualification, work experience and job position of the respondents. Most (65.7%) of respondents has an educational qualification of first degree and followed by (18.6%) of the respondents have second degree, (12.9%) college diploma and PhD holders (2.9%). These academically qualified participants were instrumental to gain pertinent, reliable and scientific data on the Project

planning, monitoring and evaluation. Hence, those educated respondents were addressed the issue in a scientific and acceptable manner as a result of prior discussion between the researcher and the study participants. As shown in table 4.1 majority (28.6%) of the respondents have a work experience of above 15 years followed by 10-15 years (25.7%) and 5 above 10 years (24.3%) less than 5 years and (21.4%) work experience. This implies that the majority of the respondents were capable enough to rationally task experience for the Project planning, monitoring and evaluation. Finally most (75.7%) of respondents are professional engineers (which includes construction engineers, office engineers , site engineers , case team leaders, follow-up or civil engineers and different supporting Staff), Site Project Managers (11.4%), Group leader (11.4%), Directoraters (1.4%) respectively. This means that there was a deliberate involvement of the project they were freely expressing their Job description of project Planning, monitoring and evaluation.

4.2. Planning

Based on the response gathered from the employees of the foundation, since the questionnaire was designed by using Likert Scale and almost all the statements were measured on a five point scale with 1= Strongly Disagree; 2= Disagree; 3= Neutral; 4=Agree; 5=Strongly Agree. The information obtained from the questionnaires were summarized and discussed in the following manner.

4.2.1. Work Schedule

Ten questions were provided for respondents on the questionnaires in work schedule planning and interview questions were asked to respondents regarding

Table 4.2: work schedule (plan)

S/N	Variable	1	2	3	4	5
1	Prepared detailed project plan on mobilization phase of the project	39 (55.7)	16 (22)	3 (4.3)	10 (14.3)	2 (2.9)
2	All project stake holders participate in project planning	5 (7.1)	43 (61.4)	5 (7.1)	9 (12.9)	8 (11.4)

3	Writteen standards, guide lines and manuals &procedures for planning project works.	1 (1.4)	2 (2.9)	9 (12.9)	35 (50)	23 (32.9)
4	WBS is used when defining the schedule activities	1 (1.4)	4 (5.7)	12 (17.1)	40 (57.1)	13 (18.6)
5	Relationships among activities are identified and the activities sequenced in planning process	2 (2.9)	2 (2.9)	15 (21.4)	36 (51.4)	15 (21.4)
6	Estimate of resources (materials, people, equipment) needed are prepared	1 (1.4)	3 (4.3)	7 (10)	42 (60)	17 (24.3)
7	Revise its plan and communicate with the client of the project	1 (1.4)	4 (5.7)	10 (14.3)	39 (55.7)	16 (22.9)
8	Uses planning software's for planning	6 (8.6)	12 (17.1)	16 (22.9)	26 (37.1)	10 (14.3)
9	The sub-contractors or suppliers submit their detail activities plan	4 (5.7)	18 (25.7)	18 (25.7)	24 (34.3)	6 (8.6)
10	Project schedule (finished dates are approved and fixed)	2 (2.9)	5 (7.1)	17 (24.3)	35 (50)	11 (15.7)

Source: Survey data, 2020 Note Figure in () are %

Table 4.2 involved the assessment of work plan schedule preparation in Army Foundation.Where 50% of the respondents agreed that the Foundation has written standards, guide lines, manuals and procedures for planning. 57.1% of the respondents agreed also that in planning process activities are break down, 51.4% relationship among activities are identified and sequenced,needed resources are estimated plans are revised quarterly.the Army Foundation use fixed finished dates for time planning using excel sheet computer software including subcontractors and or suppliers detail activity plan. But as shown in the table 4.2 the respondents 55.7 % strongly disagree that the Army Foundation prepare detailed project plan on mobilization phase of the project and 61.4% disagree that on the planning process all project stakeholders participate.

The Army Foundation as shown in work schedule plan result prepares detail plan and revise it quarterly but the planning process lacks participating the people who must do the work and completing the plan at project mobilization time.

4.2.2. Human Resource

Three questions were provided for respondents on the questionnaires in human resource planning and interview questions were asked to respondents regarding

Table 4.3 Human resource (Man power plan)

S/N	Variable	1	2	3	4	5
11	Human resource management team members participate in project planning.	7 (10)	20 (28.6)	20 (28.6)	16 (22.9)	7 (10)
12	The project plan incorporate man manpower plan	1 (1.4)	3 (4.3)	7 (10)	44 (62.9)	15 (21.4)
13	The man power plan of the project includes detail skill requirement, Roles & Responsibilities of the position	2 (2.9)	5 (7.1)	6 (8.6)	38 (54.3)	19 (27.1)

Source: Survey data, 2020 Note Figure in () for %

As indicated in table 4.3 most of the respondents (more than 54%) agreed that the project plan of the Army Foundation incorporate manpower plan which includes detail skill requirement, roles and responsibilities of the position. But the respondents are neutral and equally disagree that the human resource team members participate in project planning. The Army Foundation prepares its project plan including detail man power as one of the project resource plan.

4.2.3. Risk

Considering risk in planning and planning risk response plan is uncommon in most plans but is important two questions were asked and the following responds were gathered from the respondents.

Table 4.4 Risk plan

S/N	Variable	1	2	3	4	5
14	Risks are considered in planning the projects activities as assumptions	6 (8.6)	41 (58.6)	10 (14.3)	10 (14.3)	3 (4.3)
15	Detailed risk response plan prepared for risks that warrant action/attention	6 (8.6)	43 (61.4)	6 (8.6)	12 (17.1)	3 (4.3)

Source: Survey data, 2020 Note Figure in () for %

Table 4.4 shows that 58% of the respondents disagree in that risks are considered in planning the Army Foundation projects and 58% also disagree that the Foundation prepare detailed risk response plan that warrant action. From the interview result the

respondent states that the engineer in charge of planning the project activity uses only specification and bill of quantities as a source for planning and does not have the information of the site condition at planning stages unable to identify the risk and the office engineer also use the same format to revise the plan without considering risks and detailed risk response plan.

4.2.4. Procurement

The following four questions were included in the questionnaire to assess the practice of procurement plan in the Army Foundation.

Table 4.5 Procurement plan

S/N	Variable	1	2	3	4	5
16	Prepared detailed procurement plan of goods and service needed for a project.	19 (27.1)	31 (44.3)	7 (10)	9 (12.9)	4 (5.7)
17	Major and/or special supply items (such as those required in large quantity or those requiring special manufacturing or long lead time etc.) identified and special attention is given for them	13 (18.6)	36 (51.4)	11 (15.7)	7 (10)	3 (4.3)
18	There is awareness about the importance of project procurement plan.	21 (30)	35 (50)	7 (10)	5 (7.1)	2 (2.9)
19	The procurement plan of the project revised with the revision of a project time plan.	14 (20)	45 (64.3)	7 (10)	3 (4.3)	1 (1.4)

Source: Survey data, 2020 Note Figure in () for %

From table 4.5 most of the respondents disagree in that the Army Foundation have the practice of preparing detailed procurement plan of goods and service needed for a project with identifying items that needs special attention and revised with the revision of the project work plan. The respondents also claims that there is no awareness about the importance of project‘s procurement plan in the Army Foundation.

4.2.5. Equipment (Machinery)

Resource plan include large and small equipment in construction project and it is the major resource especially in housing construction. The following three questions were asked to assess the practice of equipment/machinery plan practice of the Army Foundation.

Table 4.6 Equipment (Machinery plan)

S/N	Variable	1	2	3	4	5
20	Project plan includes detail what, how much and when equipments are needed.	1 (1.4)	7 (10)	8 (11.4)	38 (54.3)	16 (22.9)
21	Equipment sharing among projects are planned and facilitated.	16 (22.9)	30 (42.9)	1 (1.4)	15 (21.4)	8 (11.4)
22	Projects have an equipment maintenance plan.	17 (24.3)	40 (57.1)	3 (4.3)	7 (10)	3 (4.3)

Source: Survey data, 2020 Note Figure in () for %

As can be seen from table 4.6 54% of the respondent‘s agree that the Army Foundation project plan includes detail equipment plan even if the equipment administration maintenance support process team members doesn‘t participate in the planning process. Equipment sharing among projects are planned and facilitated for the foundation was ranked disagree by 42.9% of the respondents. The respondents perceptions showed that, the Army Foundation equipment plan doesn‘t include equipment sharing plan among projects in order to use the equipment efficiently. The respondent also ranked disagree (57.1%) to The Army Foundation projects have an equipment maintenance plan. meaning the Foundation project which has equipment plan doesn‘t include maintenance plan.

4.2.6. Material

Construction materials plan quantified from the working drawing and bill of quantity with detail specification must include in project plan. These questions were prepared to gather information on the practice material planning in the Army Foundation.

Table 4.7 Material Plan

S/N	Variable	1	2	3	4	5
23	Plan to acquire and use project materials	2 (2.9)	7 (10)	2 (2.9)	46 (65.7)	13 (18.6)
24	Risks associated with unavailability and cost increase considered in material planning	13 (18.6)	35 (50)	1 (1.4)	14 (20)	7 (10)
25	Material requiring long-lead time and critical items given special consideration in planning	3 (4.3)	41 (58.6)	5 (7.1)	13 (18.6)	8 (11.4)

Source: Survey data, 2020 Note Figure in () for %

The research finding shows that about 65.7% of the respondent agreed and 18.6% strong agree that “The Army Foundation has planned to acquire and use project materials.But

50% of the respondents disagree in that risks associated with unavailability and cost increase considered in material planning." In addation 58.6%of respondents also disagree that "Material requiring long-lead time and critical items given special consideration in planning." The interview result shows that the project plan includes detailed material plans but doesn't include risks associated with unavailability of the material. If any material is unavailable in the market mostly materials will be replaced by the consultants with its equivalent. The Army Foundation material supply and administration manual incorporates materials lead-time but it needs some modification.

4.2.7. Safety

Respondents were asked two question regarding safety standards, requirement plan and availability of safety procedures, guidelines, polices and safety management.

Table 4.8 safety plan

S/N	Variable	1	2	3	4	5
26	Prepare safety plan (determining safety standards and requirements and devising action plan)	6 (8.6)	27 (38.6)	16 (22.9)	14 (20)	7 (10)
27	Organizational policies. Procedures and guidelines for safety management	5 (7.1)	19 (27.1)	22 (31.4)	16 (22.9)	8 (11.4)

Source: Survey data, 2020 Note Figure in () for %

Table 4.8 shows that 38.6% of the respondents disagree that the Army Foundation prepare safety plan 22.9% of the respondents are neutral and 20%are agree with the issue. The table also shows that 18.5% of the respondents also neither agree nor disagree in that The Army Foundation has organizational policies. Procedures and guidelines for safety management but the interview result shows that the Foundation human resource manual includes safety management which requires Safety barriers, warning sign and protective clothing and footwear. All projects have insurance for a variety of risks, ranging from theft to fire. By buying insurance, they have effectively transferred risk to the insurance company in that, if anything occurs the insurance company will compensate the company.

4.2.8. Quality and Payment

Three important factors were set to check monthly payment request practice, project quality plan and the availability of quality management policy, procedures and guidelines of the Army Foundation.

Table 4.9 quality and payment plan

S/N	Variable	1	2	3	4	5
28	Request monthly payment certificates for the accomplished work	1 (1.4)	3 (4.3)	5 (7.1)	39 (55.7)	22 (31.4)
29	Quality management policies procedures & guidelines	1 (1.4)	7 (10)	13 (18.6)	33 (47.1)	16 (22.9)
30	The project quality plan. (Requirements & quality standards determinedand strategic are devised).	1 (1.4)	42 (60)	3 (4.3)	9 (12.9)	15 (21.4)

Source: Survey data, 2020 Note Figure in () for %

The majority (about 87.1%) of the respondents agreed that the Army Foundation projects prepare and request monthly payment for the accomplished work and about 70% of the respondents also agreed that the Army Foundation has quality management policies, procedures and guidelines for the construction work. However most of the respondents (about 61%) disagree as the project quality requirements determined and strategies are devised.

4.3. Monitoring

4.3.1. Sources of Monitoring and Evaluation

Monitoring and evaluation needs standards, construction project uses plans as standards for monitoring and evaluation of projects.

Table 4.10 Source of monitoring and evaluation

S/N	Variable	1	2	3	4	5
31	Plans are the source and inputs for project monitoring & evaluation project	1 (1.4)	1 (1.4)	9 (12.9)	46 (65.7)	13 (18.6)

Source: Survey data, 2020 Note Figure in () for %

About 84.3% of the respondent agreed that the Army Foundation use plans as source for project monitoring and evaluation purpose.

4.3.2. Project Evaluation

Six factors were set to check what the Army Foundation evaluate, who is responsible to evaluate and how the project planning, monitoring and evaluation team evaluate the project.

Table 4.11 project evaluation

S/N	Variable	1	2	3	4	5
32	The Army Foundation use project plan to evaluate					
	a.Performance	1 (1.4)	1 (1.4)	2 (2.9)	39 (55.7)	27 (38.6)
	b. Material usage	1 (1.4)	6 (8.6)	9 (12.9)	35 (50)	19 (27.1)
	c. Equipment efficiency	1 (1.4)	5 (7.1)	19 (27.1)	31 (44.3)	14 (20)
	d. Procurement activity status	1 (1.4)	43 (61.4)	2 (2.9)	15 (21.4)	9 (12.9)
33	Has a central project planning, monitoring & Evaluation team	1 (1.4)	2 (2.9)	12 (17.1)	37 (52.9)	18 (25.7)
34	Project planning, monitoring and evolutions team have formal meetings for monitoring & evaluating the project progress.	11 (15.7)	38 (54.3)	1 (1.4)	13 (18.6)	7 (10)

Source: Survey data, 2020 Note Figure in () for %

As shown in table 4.11 more than 64.3% of the respondents agreed that the Army Foundation evaluate its project performance of the work, resources utilization, and equipment efficiency, but 61.4% of the respondent disagreed that the Army Foundation use project plan to evaluate procurement activity status. The table also shows that majority (78.6%) of the respondent agreed that the Army Foundation has a central project planning, monitoring and evaluation team. in the table 70% of the respondent disagreed in that the central project planning, monitoring and evaluation team have formal meetings for monitoring and evaluating the project progress.

According to the interview results most of the time project evaluation is conducted by management members includes the Vise Executive, Diretoraters, Group Leader, Site Project manager and other with formal meetings.

4.3.3. **Project** Report and Evaluation

There were eight question requested to the respondents on the project progress report content, report evaluation, on report format and submission date.

Table 4.12 project report and Evaluation

S/N	Variable	1	2	3	4	5
35	The progress report produced by the Army Foundation's project provide sufficient information to monitor and evaluate the project activity.	1 (1.4)	4 (5.7)	6 (8.6)	47 (67.1)	12 (17.1)
36	The reports submitted to the Army Foundation project planning, monitoring & Evaluation team provides feedback that support the project.	43 (61.4)	8 (11.4)	4 (5.7)	9 (12.9)	6 (8.6)
37	People involved in monitoring and evaluation has knowledge or experience or receive training about monitoring and evaluation of projects	1 (1.4)	9 (12.9)	25 (35.7)	29 (41.4)	6 (8.6)
38	Projects are evaluated					
	a. Projects own report	1 (1.4)	1 (1.4)	4 (5.7)	43 (61.4)	21 (30)
	b. On meetings	2 (2.9)	1 (1.4)	3 (4.3)	47 (67.1)	17 (24.3)
	c. On observation report	2 (2.9)	47 (67.1)	9 (12.9)	7 (10)	5 (7.1)
39	Progress Reports					
	a.Have a standard report format	2 (2.9)	3 (4.3)	3 (4.3)	46 (65.7)	16 (22.9)
	b. The report submission dates are fixed	1 (1.4)	1 (1.4)	1 (1.4)	57 (81.4)	10 (14.3)
	c. The report format includes all the necessary information for management decision.	3 (4.3)	2 (2.9)	4 (5.7)	48 (68.6)	13 (18.6)
	d. Reports are evaluated and issues are	25	33	5	7	0

	resolved.	(35.7)	(47.1)	(7.1)	(10)	
40	Financial reports are prepared regularly for the project	1 (1.4)	1 (1.4)	3 (4.3)	44 (62.9)	21 (30)
41	Project procurement progress reports are prepared and evaluated regularly with project accomplishment	37 (52.9)	9 (12.9)	9 (12.9)	10 (14.3)	5 (7.1)
42	Standard procurement report format	5 (7.1)	39 (55.7)	6 (8.6)	11 (15.7)	9 (12.9)

Source: Survey data, 2020 Note Figure in () for %

From table 4.12, 84.2% of the respondent (with mean of 3.93) and 50%(with a mean of 3.43) agreed that the project report provide sufficient information to monitor and evaluate the project activity and people involved in monitoring and evaluation has knowledge or experience or receive training about monitoring and evaluation of projects respectively. But 72.8% of the a respondent disagree with the parameter the reports submitted to the Army Foundation project planning, monitoring and evaluation team provides feedbacks that support the project. On the other hand more than 91.4 % of the respondent agreed that the Army Foundation projects are evaluated on their own reports in meetings, but most disagreed on the parameter that projects are evaluated on observation report prepared by central project planning, monitoring and evaluation team members. Surprisingly 87.2% of the respondents agreed that the Army Foundation has standard project activity progress format, the report submission dates are fixed and the report format includes all the necessary information for management decision.But 82.8% the respondent disagreed on that reports are evaluated and issues are resolved.With 92.9% of the respondent agreed that the project report include financial report .the interview result also shows that the project prepares biweekly detail report for the Housing Construction Project and monthly detail manpower, budget utilization, equipment utilization and fuel consumption, material utilization and financial report for support process and Housing Construction Project monthly. Finally 52.9% and 55.7% of the respondents disagreed in that the Army Foundation has standard procurement report format and project procurement progress reports are prepared and evaluated regularly with project accomplishment.

4.4. Evaluation

4.4.1. Cost of Montioring and Evaluation

Project evaluation includes cost evaluation. The following questions were asked to the respondents in order to understand the Army Foubdation cost evaluation practice.

Table 4.13 Cost, quality, employ performance and risk evaluation.

S/N	Variable	1	2	3	4	5
43	The following project costs are evaluated against plan					
	a. Direct cost	1 (1.4)	1 (1.4)	4 (5.7)	42 (60)	22 (31.4)
	b. Indirect cost	1 (1.4)	5 (7.1)	8 (11.4)	47 (67.1)	9 (12.9)
	c. Material cost	3 (4.3)	1 (1.4)	6 (8.6)	40 (57.1)	20 (28.6)
	d. Labor cost	2 (2.9)	3 (4.3)	7 (10)	46 (65.7)	12 (17.1)
	e. Equipment cost	1 (1.4)	3 (4.3)	4 (5.7)	47 (67.1)	15 (21.4)
	f. Fuel cost	1 (1.4)	3 (4.3)	6 (8.6)	38 (54.3)	22 (31.4)
44	Monitor project finance to ensure that money are spent appropriately as planned and with proper authorization	1 (1.4)	1 (1.4)	13 (18.6)	36 (51.4)	19 (27.1)

Source: Survey data, 2020 Note Figure in () for %

From table 4.13 above, it can be concluded that all the cost factors listed and money transferred to projects are evaluated against plan as majority of respondent (more than 78.5%) agreed and with all construction cost which includes direct, indirect, material labor equipment and fuel costs.

4.4.2. Project Risk and Quality of Work Evaluation

Construction project monitoring and evaluation contains risk and quality evaluation of the project. In order to assess the practice of the project risk and quality of work evaluation four questions were asked to respondents as shown below.

Table 4.14 Evaluation of risk and quality

S/N	Variable	1	2	3	4	5
45	Qualities audits are done in the project are view to determine where project activities comply with polices processes and quality requirements.	4 (5.7)	36 (51.4)	14 (20)	13 (18.6)	3 (4.3)
46	Inspects and evaluate quality of subcontractor work to ensure compliance with quality requirements	3 (4.3)	7 (10)	12 (17.1)	33 (47.1)	15 (21.4)
47	Monitor and evaluate project risks (i.e. identifying and documenting new risks, closing those outdated and tracking those already identified)	39 (55.7)	15 (21.4)	1 (1.4)	7 (10)	8 (11.4)
48	Used risk register/log in the risk to document identified risks with their attributes and to track their status while monitoring and evaluating	37 (52.9)	14 (20)	3 (4.3)	8 (11.4)	8 (11.4)

Source: Survey data, 2020 Note Figure in () for %

Table 4.14 shows that 57.1% of the respondents disagreed in the existence of quality audits in the Army Foundation projects to determine where activities comply with policies, procedures and quality requirements. But 68.5% agreed in that the Army Foundation inspects and evaluate quality of subcontractors work to ensure compliance with quality requirements. The result also shows that the largest percentage (above 63%)of the respondents disagreed that the Army Foundation monitor and evaluate project risks and used register /log in the risk document to identify risks with their attributes and track their status while monitoring and evaluation project risks.

4.4.3. Employees Performance and Equipment Productivity Evaluation

Project skilled manpower and professionals and the equipment productivity have to be evaluated at fixed period of time. The following two questions were asked to employees and management staff to the practice of Army Foundation.

Table 4.15 Employees Performance and Equipment productivity Evaluation

S/N	Variable	1	2	3	4	5

49	Standard for monitoring performance of the projecte quipment their productivity, maintenance cost, time worked etc.	2 (2.9)	6 (8.6)	9 (12.9)	38 (54.3)	15 (21.4)
50	Project Employees performance evaluation tracked regularly & feed backs are provided.	3 (4.3)	4 (5.7)	16 (22.9)	38 (54.3)	9 (12.9)

Source: Survey data, 2020 Note Figure in () for %

More than 67.2% of the respondents as shown in table 4.15 agreed that the Army Foundation use its own standards to monitor and evaluate performance of the project equipment activity and the employ performance regularly.

4.4.4. Project Profitability and Delay Evaluation

Table 4.16 contain two questions to asses on factors that affect project profitability and time of completion and resource supply of construction project in Army Foundation.

Table 4.16 profitability and delay evaluation

S/N	Variable	1	2	3	4	5
51	The Army Foundation profitability is affected by					
	a. increase in cost of input	2 (2.9)	4 (5.7)	9 (12.9)	41 (58.6)	14 (20)
	b. delay in supply of resource	2 (2.9)	4 (5.7)	3 (4.3)	47 (67.1)	14 (20)
	c. Quality of work	5 (7.1)	6 (8.6)	13 (18.6)	36 (51.4)	10 (14.3)
52	There is a delay on the Army Foundation's project					
	a. Due to poor planning	3 (4.3)	14 (20)	7 (10)	32 (45.7)	14 (20)
	b. Due to material supply problem	2 (2.9)	3 (4.3)	7 (10)	47 (67.1)	11 (15.7)
	c. Due to late equipment delivery	1 (1.4)	6 (8.6)	9 (12.9)	36 (51.4)	18 (25.7)
	d. Late manpower assignment	2 (2.9)	17 (24.3)	10 (14.3)	33 (47.1)	8 (11.4)
	e. Completion on estimated time	2 (2.9)	9 (12.9)	12 (17.1)	35 (50)	12 (17.1)

	f. Decision making	2 (2.9)	12 (17.1)	11 (15.7)	36 (51.4)	9 (12.9)
	g. payment request and approval	1 (1.4)	14 (20)	13 (18.6)	30 (42.9)	12 (17.1)

Source: Survey data, 2020 Note Figure in () for %

The analysis in table 4.16 shows that the first three factors, as more than 65.7% of the respondents agreed, affect the profitability of the Army Foundation projects. All the factors described as the cause of delay on the project is agreed by more than 58.5% of the respondent.

4.5. Discussion of the Results

The Army Foundation as shown in work schedule plan result prepares detail plan and revise it quarterly but the planning process lacks participating the people who must do the work and completing the plan at project mobilization time. Lewis (2005) described five common mistakes in planning and the first is unilateral planning (not participating people who must do the work) and Jackson (2010) one of the activities in mobilization time is to prepare and submit project plan to the client & its representative. Generally, the Army Foundation prepare its project plan including detail man power as one of the project resource plan as White& Fortune (2002) but it lacks participating the human resource support process people. As the result shows the Army Foundation does not consider risks in planning and does not prepare risk response plans. As described in literature review by Jackson, (2010) construction risks has to be considered and risk response plans have to be developed. The result also shows that the Army Foundation did not incorporate procurement plan in the project master and revised plan. But as described by Jackson, (2010) procurement is one of the three project activity that needs properly planning.Yimer(2011) also suggests that in order to complete the project work on contract time procurement plan must be prepared properly. As 77.2% of the responds the Army Foundation was prepared equipment plan for the project but the equipment plan lacks maintenance and sharing among projects. According to Subramani (2014) the construction project plan includes equipment plan that perform work on activities across all projects. Generally, construction material planning was prepared for the Army Foundation project. It involves as Subramani, (2014) identify the material required defining specification, estimate the quantity &forecasting requirements. The Army

Foundation has organizational policies, procedures & guide lines for safety management but lacks safety plan and creating awareness on the safety management policy of the Army Foundation according to Olantunji, (2010) lack of health and safety plan can exert influence on the delivery time of projects. Payments according to the research result prepared monthly and the Army Foundation has quality management procedures and guidelines but does not have quality plan. According to ministry of work and urban development general condition of contract MOWUD (1994) clause 60, the contractor shall submit payment request statement to the engineer after the end of each month with price escalation and/or price adjustment. In the first category monitoring and evaluation 4.10 (84.3%) which indicate the existence of above average monitoring and evaluation of projects using project plan as a source. Examining the four major components evaluation i.e. performance the work, resource utilization, equipment efficiency and procurement activity status. Except procurement activity status all the activities were monitored and evaluated, as UNDP (2009) without planning monitoring and evaluation is un-thinkable. The result shows 4.12 (91.4%) that meetings were arranged quarterly by the Army Foundation management team including the project managers to evaluate the project reports. But the meeting uncovers problems and issues reported by the projects. The result shows that project planning monitoring & evaluating team neither prepare and submit an observation report nor evaluate and forward feedback to the projects. The project evaluation and monitoring activity includes according to Jody and Ray (2004) physical progress, finance progress, project quality, risks & equipment productivity. The research shows that the Army Foundation monitor and evaluate all costs, quality of sub-contractors work, equipment productivity and employees performance but not monitor and evaluate risks & own work quality. The result shows that the Army Foundation project plan were not include the purchasing plan for required goods and service which is a causes for a delay on material supply, an increase in cost of input, which leads to work procedures problem and quality of work which also leads to rework and additional cost and which in turn reduce the expected project profit.

Finally, from the research result most of the Army Foundation project was delayed to due to improper planning, late resource supply and late management decision making. As Merith.et.al.(2013) project must managed well by continually planning, checking on

progress, taking corrective action if not revise the plan to bring progress in to agreement with the master plan otherwise there exist a time and cost overrun.

CHAPTER FIVE

5. SUMMARY OF FINDING, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter has three sections. The first section presents the summary of major findings, the second section presents conclusion of the research derived from findings and the third section deals with recommendation that were made on basis of the findings.

5.1. Summary of Major Findings

Regarding the project planning, monitoring & evaluating practice, the selected Army Foundation housing project sites has written standards, guide lines, manuals and procedures for planning. In planning process activities are break down relationship among activities are identified and sequenced needed resources are estimated plans are revised quarterly. The Army Foundation use fixed finished dates for time planning including subcontractors and or suppliers detail activity plan. But the planning process lacks preparing the plan on mobilization phase of the project, participating all project stakeholders, including procurement plan, considering risk, preparing detailed risk response plans, including construction equipment sharing among project and maintenance plan and project quality plan and project quality plan when analyzed based on the data collected form the respondents and the review of documents. The Army Foundation use the prepared plan, (except quality, risk and procurement plan), as a source for monitoring and evaluation of project performance of the work, resources utilization, all costs and equipment efficiency with project‘s own report. The report submitted every two weeks contains all the required information to evaluate the project on time by the Army Foundation evaluation team but the team did not evaluate the report and recommend any possible way to resolve the issues which requires action to be taken by the project stake holders. The Army Foundation nether outsource the planning activity to construction planning specialist firm, nor prepare complete project plan and monitor and evaluate accordingly there exists a reduction in the expected profit and a delay on supply of resources and project completion time.

5.2. Conclusion

This study examines the construction project planning, monitoring and evaluation practice at Army Foundation.

Generally as the result obtained from the study and based on its specific objectives the following conclusions were drawn:

- ☞ The foundation did not have the practice of completing its construction project planning in project mobilization phases and did not also participate peoples who actually do the work especially the support activity.
- ☞ The foundation prepared directives and operational manual for the construction work which guides the planners how and when to prepare and revise the project.
- ☞ Neither risks considered in planning nor risk response plans were prepared in planning the foundations project. This is a common mistake in planning project.
- ☞ Special supply item that needs long long-lead time were not given attention to prepare procurement plans which must be included in the project masters revised schedule .the research result shows that procurement plans not prepared by the foundation and most of the workers and management members don‘t have the awareness of the importance of project goods and service procurement plan.
- ☞ The plan prepared for the foundation project includes the required equipments but lacks equipment sharing among projects and protective maintenance plan to facilitate efficient use of the foundation‘s equipment
- ☞ The result of the study reveals that the existence of construction safety policy manual at foundation but affirms also that the employees don‘t have the information to use and management members didn‘t apply it.
- ☞ The foundation is good at preparing monthly progress payment but the document lacks quality to be approved on time by the consultants and collect the money on time.
- ☞ The study reveals the foundation does not prepare a quality plan for the projects.
- ☞ The foundation project planning, monitoring and evaluation team do not have the practice of formally evaluating each progress report and give feed backs, but the reports include all the necessary information for evaluation and problems that needs management especial attention is also included.

- ☞ It was revealed in the study that foundation does not have well organized and integrated project evaluation system. The foundation evaluate projects every quarter based on their own reports in management meetings without planned site observation report and procurement progress report.
- ☞ Survey result reveals that the foundation project strongly monitor and evaluate it‘s money and all project cost categories.
- ☞ The foundation inspects the quality of the subcontractors work but poor in monitoring and evaluation of it‘s own work quality.
- ☞ There were delays in project due to poor planning, material supply problem, shortage of manpower and late decision making and the projects profitability were mostly affected by quality of work which leads to rework, delay of resource supply and in an increase in the cost of input.

5.3. Recommendations

Based on the result of the study and conclusion reached together with lesson drawn from literature on experience of the construction project planning, monitoring and evaluation practice the following important remarks are recommended.

- ☞ Detailed plan including construction, administration and procurement activities should be prepared on project mobilization time.
- ☞ It is very important to consider risks and prepare risk response plan in project planning.
- ☞ Special consideration have to be given to items that needs long-lead time in requesting for delivery and in preparing procurement plans
- ☞ In preparing the Army Foundation project master and annual plan teams have to be formulated from each support and Housing Construction Project.
- ☞ The Army Foundation construction equipment administration and support process needs to prepare its equipment maintenance and equipment sharing among project plan by consulting the Housing Construction Project.
- ☞ All progress reports submitted by projects have to be evaluated housing and building Housing Construction Project with equipment administration and resource supply support process respectively and feed backs have to be forwarded to projects and Army Foundation management members.

- ☞ Milestones plans have to be prepared for quality, safety and risk on site evaluation for each project by the Housing Construction Project.
- ☞ The Army Foundation management needs to focus on creating awareness to all employees on safety issues.
- ☞ Training programs should be compulsory for the Army Foundation Group leaders, project managers, office, site and follow-up engineers to develop their planning, monitoring and evaluation abilities, skills and knowledge.
- ☞ Since lack of project management knowledge, tools and techniques is identified in the assessment, it is recommended that the organization should equip project officers with the concept and application of project management knowledge through trainings.
- ☞ It is an independent project risk management team (focal person is established) assigned so that it will be possible to effectively deal with construction project related risks are identified earlier and risk response planning, monitoring and evaluation system is adopted.
- ☞ The contract administration department is further restructured to accommodate the responsibility of procurement planning and management of all construction projects that are under the management and consultancy of the study organization. This will help the organization in order to schedule and proactively work on how the procurement and solicitation processes for internal projects as well as external projects owned by other public bodies in the region whose procurement process is endorsed by the organization under the study.

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APPENDICES A-C

Appendix A. Questionnaire

Questionnaire for data collection

Dear respondents

I am undertaking a research survey on construction project focusing on planning, monitoring and evaluation practice in Army Foundation. The research is an individual research project as part of my study for Master of Project Management at St.Mary's University.

The main purpose of the research questionnaire is to collect information regarding the current condition of construction project planning, monitoring and evaluation practice in Army Foundation. As a key staff you are invited to participate in this survey. The information you provide in response to the items in the questionnaire will be used as part of the data needed for the study.

All the information you provide will kept in strict confidentiality and it will be used only for academic research .please answer each question carefully .there is no right or wrong answer. If you are unsure of an answer, please respond with your best estimate. I value your participation and thank you for the commitment of time, energy and effort. If you have any further question, I can be reach at the address below.

Sincerely

Fetene Kinfe

Email Fetene1852@gmail.com

Cell phone no +251904521852

General Instructions

There is no need of writing your name, in all cases were answers options are available please tick (√) in the appropriate box.

Part I. Back ground information about the respondents please use (√) in the relevant box for your response

A. Educational back ground

PHD	MA/MSC	BA/BSC	. College Diploma
⬭	⬭	⬭	⬭

B. Years of experience of the respondent

Less than 5 years	5-10 years	10-15 years	Above 15 year
⬭	⬭	⬭	⬭

C. Job title of the respondent

Directorates	Group Leader	Site Project manager	Others (……)
⬭	⬭	⬭	⬭

Please write your title.....

Part II.

Listed below are statements about project planning, monitoring & Evaluation. Please indicate your level of agreement with the statement so that your answer to these questions will enable the researcher to assess what you think about the project planning monitoring and evaluation practice in your Army Foundation.

S/N	Questions	Strongly DisAgree	DisAgree	Neutral	agree	Strongly agree
	Work schedule /plan					
1	Prepared detailed project plan on mobilization phase of the project					
2	All project stake holders participate in project planning					
3	Writteen standards, guide lines and manuals &procedures for planning project works.					
4	WBS is used when defining the schedule activities					
5	Relationships among activities are identified and the activities sequenced in planning process					
6	Estimate of resources (materials, people, equipment …) needed are prepared					
7	Revise its plan and communicate with the client of the project					
8	Uses planning software's for planning					
9	The sub-contractors or suppliers submit their detail activities plan					
10	Project schedule (finished dates are approved and fixed)					
	Human resource (manpower plan)					
11	Human resource management team member's participate in project planning.					
12	The project plan incorporate man manpower plan					
13	The man power plan of the project includes detail skill requirement, Roles & Responsibilities of the position					
	Risk plan					
14	Risks are considered in planning the projects activities as assumptions					
15	Detailed risk response plan prepared for risks that warrant action/attention					

S/N	Questions	Strongly DisAgree	DisAgree	Neutral	agree	Strongly agree
	Procurement plan					
16	Prepared detailed procurement plan of goods and service needed for a project.					
17	Major and/or special supply items (such as those required in large quantity or those requiring special manufacturing or long lead time etc.) identified and special attention is given for them					
18	There is awareness about the importance of project procurement plan.					
19	The procurement plan of the project revised with the revision of a project time plan.					
	Equipment (Machinery Plan)					
20	Project plan includes detail what, how much and when equipments are needed.					
21	Equipment sharing among projects are planned and facilitated.					
22	Projects have an equipment maintenance plan.					
	Material Plan					
23	Plan to acquire and use project materials					
24	Risks associated with unavailability and cost increase considered in material planning..					
25	Material requiring long-lead time and critical items given special consideration in planning.					
	Safety plan					
26	Prepare safety plan (determining safety standards and requirements and devising action plan)					
27	Organizational policies. Procedures and guidelines for safety management.					

S/N	Questions	Strongly	DisAgree	Neutral	agree	Strongly agree
	Quality and Payment plan					
28	Request monthly payment certificates for the accomplished work					
29	Quality management policies procedures & guidelines					
30	The project quality plan. (Requirements & quality standards determinedand strategic are devised).					
	Sources of Monitoring & Evaluation					
31	Plans are the source and inputs for project monitoring & evaluation project.					
	Project Evaluation					
32	The Army Foundation use project plan to evaluate					
	a.Performance					
	b. Material usage					
	c. Equipment efficiency					
	d. Procurement activity status					
33	Has a central project planning, monitoring & Evaluation team					
34	Project planning, monitoring and evolutions team have formal meetings for monitoring & evaluating the project progress.					
	Project Report and Evaluation					
35	The progress report produced by the Army Foundation's project provide sufficient information to monitor and evaluate the project activity.					
36	The reports submitted to the Army Foundation project planning, monitoring & Evaluation team provides feedback that support the project.					

S/N	Questions	Strongly DisAgree	DisAgree	Neutral	agree	Strongly agree
37	People involved in monitoring and evaluation has knowledge or experience or receive training about monitoring and evaluation of projects					

38	Projects are evaluated					
	a. Projects own report					
	b. On meetings					
	c. On observation report					
39	Progress Reports					
	a. Have a standard report format					
	b. The report submission dates are fixed					
	c. The report format includes all the necessary information for management decision.					
	d. Reports are evaluated and issues are resolved.					
40	Financial reports are prepared regularly for the project					
41	Project procurement progress reports are prepared and evaluated regularly with project accomplishment					
42	Standard procurement report format					
	Cost of Montoring and Evaluation					
43	The following project costs are evaluated against plan					
	a. Direct cost					
	b. Indirect cost					
	c. Material cost					
	d. Labor cost					
	e. Equipment cost					
	f. Fuel cost					

S/N	Questions		DisAgree	Neutral		Strongly agree
44	Monitor project finance to ensure that money are spent appropriately as planned and with proper authorization					
	Evaluation of Risk and Quality					

45	Qualities audits are done in the project are view to determine where project activities comply with polices, processes and quality requirements.					
46	Inspects and evaluate quality of subcontractor work to ensure compliance with quality requirements					
47	Monitor and evaluate project risks (i.e. identifying and documenting new risks, closing those outdated and tracking those already identified)					
48	Used risk register/log in the risk to document identified risks with their attributes and to track their status while monitoring and evaluating					
Employees Performance and Equipment Prodctivity Evaluation						
49	Standard for monitoring performance of the projecte quipment their productivity, maintenance cost, time worked etc.					
50	Project Employees performance evaluation tracked regularly & feed backs are provided.					
Profitability and Delay Evaluation						
51	The Army Foundation profitability is affected by					
	a. increase in cost of input					
	b. delay in supply of resource					
	c. Quality of work					
52	There is a delay on the Army Foundation's project					
	a. Due to poor planning					
	b. Due to material supply problem					
	c. Due to late equipment delivery					
	d. Late manpower assignment					
	e. Completion on estimated time					
	f. Decision making					
	g. payment request and approval					

Appendix B. Interview Question

INTERVIEW QUESTIONS

This interview questions will be answered by purposively selected respondents

1. How are project schedules developed? What scheduling software, methods, techniques are used? Are these software, methods, and techniques effective? What other software, methods, and techniques be more effective for project planning in your Army Foundation?
2. What role does each of the project stakeholders on projects within your Army Foundation play in the project planning process?
3. Are Army Foundation policies and procedures developed to support the project planning? Would the development of a project management manual increase the effectiveness of the project planning process in your Army Foundation?
4. How is project performance observed in your Army Foundation? What comparisons are made to standards? What corrective actions are taken?
5. Are project monitoring and evaluation performed in your Army Foundation? Who is responsible for project monitoring and evaluation? Are the monitoring and evaluation effective? Why or why not?

Appendix C. Army Foundation Organizational Structure