St. Mary's University

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ASSESSMENT OF PROJECT MONITORING AND EVALUATION PRACTICE AT BAMACON ENGINEERING PLC.

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A THESIS SUBMMITED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION IN PROJECT MANAGEMENT

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BY

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DECLARATION

I, Bezawit Tesfaye, declare that this thesis entitled "assessment of project monitoring and evaluation practice at BamaCon engineering PLC" is my original work, prepared under the guidance of the research advisor. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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ENDORSEMENT

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

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ACRONYMS

SPSS	Statistical packages for social science
UNDP	United Nation Development Program
PMI	Project management institute
PMBOK	Project management body of knowledge
EVT	Earned value techniques
BCWS	Budgeted cost of work scheduled
PV	Planned value
BCWP	Budgeted cost of work performed
EV	earned value
ACWP	Actual cost for the work performed
AC	Actual cost
CV	Cost Variance
SV	Schedule Variance
IFRCS	International Federation of Red Cross and Red Crescent Societies
WBS	work breakdown structure
BAC	budget at completion
UNDP	United Nations Development Program

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ABSTRACT

M&E system is a system that involves continues gathering of information and assessment of it in order to determine whether progress is being made towards the initial goals and objectives of a project. It is an integral part of the project cycle and of good management practice. The overall objective of the study is to assess M&E practices at BamaCon Engineering PLC. The study used a census method of sampling; project managers, onsite office engineers and project coordinators located at the head office, who are the direct participants of the M&E system of the firm, were involved in this study. The study adopted a descriptive research design that used questionnaires and key informant interviews for data gathering. SPSS (Statistical Package for Social Science) version 25 and MS Excel were used for data analysis. In addition, summary tables and charts are used for describing data. According to the findings of the study BamaCon Engineering PLC has well-organized M&E system but it is not entirely systematized one, but it does not have a guide or framework that guides the process as a whole. Physical progress monitoring, technical monitoring, financial monitoring and quality monitoring are applied on projects, but assumption monitoring is not applied on projects. Only a formative evaluation type and performance indicators are used as the M&E tools and techniques applied. The information generated through the M&E system are directly provided to the managing director, the consultant and to stakeholders/client of the project. In addition to that, the data gained is also used in making decisions for projects. Training regarding M&E has never been given to the staff. Data tampering during the gathering and reporting period of the system is also a major problem. Therefore, the firm should prepare a framework and guidelines for the M&E system. All the staff at the firm should be informed about the significance of the system. Training on M&E for direct participants of the system should be provided to avoid the inadequacy of staff and the data tampering issues.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The construction industry hugely influences the economy, the environment and the society all around the world. In 10 trillion USD revenue and added value of 3.6 trillion, the sector is account for about six percent of the world GDP, according to World Economic Forum's 2016 report. The sector's contribution is greater in the case of developing countries including Ethiopia and the industry has been playing a crucial role in sustaining country's rapid and equitable socio-economic development and changing the livelihood of millions of peoples. Information obtained from Ministry of Construction indicated that the sector had a 9.5 percent share from Ethiopia's total Gross Domestic Product (GDP) in 2016.

Project success is the question of completing a project against its main design parameters set at the start of the project and on time, within budget, in accordance with the set specifications or standards, and with customer satisfaction respectively (Ottosson, 2013). The successful execution of construction projects and keeping them within estimated cost and prescribed schedules depend on a methodology that requires sound engineering judgment (Al-Najjar, 2008).

According to Meredith and Mantel (2011) M&E is an important activity in projects for the reason that it determines project success. In this process all stakeholders are regularly informed, in good time and accurately, the actual status of a project at a given time compared to the original objectives.

Monitoring and evaluation (M&E) is described as a process that assists project managers to scale up performance and influence the results. M&E aims at improving present and future use outputs, outcomes and impact (UNDP, 2012). Gyorkos (2013) asserts that monitoring provides management and stakeholders with clear indicators of advances and attainment of forecasted results using the available resources.

Day (2010), asserts that effective M&E is increasingly being appreciated as an important requirement for both project and portfolio management. This is because M&E provide grounds for being accountable in utilizing the resources available for development. Further M&E can be applied to make the project even stronger at the design stage, implementing it and stimulating potential partners among the stakeholders.

BamaCon Engineering PLC is one of the most competitive and highly specialized BC-1 contractor in the construction sector. As any other entity, the successful completion of its project is one of the driving forces at the company. Based on the firm's previous experience, effective project monitoring and evaluation is proved to be one of the key elements in achieving project successes. The firm uses M&E on projects, to determine whether a project has achieved the desired outcomes, which in turn facilitates the decision-making process in terms of the performance of the project. Monitoring and evaluation can play a major role in enhancing the effectiveness of projects. Hence, the M&E system is really one of the pillar activities at the firm.

Nowadays, there is a growing realization of the need of Monitoring and Evaluation practices across the globe. Monitoring and evaluation helps the company learn from past successes and challenges and inform decision making process (Gudda, 2011).

The aim of this study is therefore to investigate deeply the practice of monitoring and evaluation of construction projects at BamaCon Engineering PLC.

1.2. Statement of the problem

The success of projects depends on various factors. One of the key factors for project success is having a sound monitoring and evaluation system and practices to make informed decisions and document lessons learnt for future programming, design and implementation (Gudda, 2011).

With the above statement in mind projects at BamaCon Engineering PLC are monitored and their progress is evaluated on a weekly basis. Project's cost, time, scope, quality and resources (material, equipment and labor) are the major parameters which are assessed continuously.

The aims of monitoring and evaluation is to provide information that can help inform decisions, improve performance and achieve planned results (Ottosson, 2013). Gudda (2011) states monitoring and evaluation as one of the management functions called controlling and it is the process of monitoring, evaluating, and comparing planned results with actual results to determine the progress toward the project objectives. Determining the relevance and fulfillment of project objectives, developmental efficiency, effectiveness, impact and sustainability based on Project M&E guide (IFRCS, 2011). However, the quality of data reported, the consistency of the reporting period, the effectiveness of this system, its strength and weakness has never been studied. The

significance of the system on the firm project performance and success has also never been clearly identified and properly peached to the company employees too.

Even though the company is using M&E in its project management process, the current status of this specific practice has never been studied before. Recognizing the current status of the companies M&E 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 M&E 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 M&E system is critical.

Existing conditions at the firm 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 an M&E 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 M&E practices of the company and its impact on projects. The question of how and by whom it is done, as well as where and when the information for M&E 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 M&E practices. Finally, the study will point out the overall significance of the company's M&E practice and identify its strength and weakness too.

1.3. Research Questions

In light of the problems discussed above the research specifically aims to answer the following key research questions:

- What is the project monitoring and evaluation framework in BamaCon Engineering PLC?
- How are the project monitoring and evaluation processes practiced at BamaCon Engineering PLC?
- What could be recommended to improve the monitoring and evaluation practice at the company?
- What is the significance of using monitoring and evaluation system at the company?

1.4 Objectives of the Study

1.4.1. General Objective

The general objective of this study is to investigate the project monitoring and evaluation practices at BamaCon Engineering PLC.

1.4.2. Specific Objective

The specific objectives of the study include:

- To assess the M&E practices at BamaCon Engineering PLC.
- To evaluate the M&E practices at BamaCon Engineering PLC.
- To forward recommendations on how to improve the M&E practices at the company.
- To recognize the significance of using M&E at the company.

1.5. Significance of the study

Managing construction projects embody a complex and intricate processes, hence require a persistent monitoring and evaluation of those processes is really important. The research will give full understanding about the monitoring and evaluation practices currently being employed at BamaCon Engineering PLC.

The research has a great importance for the company in that, the findings will bring insights on the role of M&E at company. The strengths and weaknesses of the M&E systems are going to be recognized and consequently take corrective actions to improve this system. The firm is currently using M&E during managing its projects and yet little is known about it and its effect on realizing project objectives. Therefore, the study aims at creating awareness on this issue and its effect on realizing project objectives.

Furthermore, it can also be used as a reference for future studies to be conducted at the firm, concerning the practices of M&E at the company. Findings from this study can also be used in

improving the current M&E system of the company. Finally, the study is felt to be important for it may help those who make an in-depth study in this particular subject matter and related case.

1.6. Scope of the study

This research focus on the assessment of the monitoring and evaluation practices at BamaCon Engineering PLC, which has been in this line of business for the past fifteen years. During this period, the company has been engaged on more than 56 projects, which vary in project amount, contract type, type of final project building use, project location, key personnel and equipment assigned, etc. However, due to the difficulty of finding significant project documents and also the difficulty to find key informants required for the research, the time frame of this research is going to be restricted to be with in the past five years (2015-2019GC). In addition to that, even though it is not sufficient, secondary data sources are available on projects which are completed within the past five years and for current contract commitments of the company.

1.7. Limitation of the study

All of the firm's projects are located in our capital city Addis Ababa except for two projects, which are located at Bahirdar and Bako respectively. Due to the lack of time and financial resources and shortage of time, the study will be focusing on only the projects located in Addis Ababa, Ethiopia.

1.8. Description of the study organization

BamaCon Engineering PLC is a share, privately owned construction firm with a reliable record of accomplishments and a bright prospect that matches its high aspiration. The firm was established as a grade VII construction firm in 2003 using the name of the owner and general manager as Girma Gelaw Building Contractor.

The company through years of vast experience dealing with project management and contract administration issues in different construction projects, has specialized in construction of Residential Houses, Office Building Complexes, Hospitals, Hotels, Factories, Warehouses and Multi-Purpose (mixed use) Buildings respectively. Furthermore, the present and past performance of the company shows the capability of fulfilling its projects on time, within budget, according to the set specifications and most importantly with client's satisfaction. Currently the company is a Gread-1 Building contract with 26 active projects and 8 on handing over process.

1.9. Definition of Terms

1. High rising:

   Having many stories.

2. BC-1:

   Building Contractor with a Grade 1 Certification of competency.

3. Specialized:

   An expert in a particular skill.

4. Contractor:

   A person or a firm who undertakes a contract to provide material or labor for the construction of a building.

1.10 Organization of the research paper

This research paper is organized into five chapters. The first chapter deals with background of the study, statement of the problem, objectives of the study, research questions to be addressed, and significance, scope and limitations of the study. The second chapter presents review of conceptual as well as empirical literatures relevant to objectives of the study. Whereas, chapter three distinctively deals with the research methodology implemented, chapter four presents findings and discussion. Finally, chapter five presents conclusion and recommendations.

CHAPTER TWO

REVIEW OF THE RELATED LITERATURE

2.1 Theoretical Review

2.1.1 Construction Projects

The term project has been defined by different scholars in a variety of ways. According to the PMI, 2013 project is defined as "A project is a temporary endeavor undertaken to create a unique product, service, or result."

A project is a one-time, unique, multitask job with a definite starting point, definite ending point, a clearly defined scope of work, a budget, and usually a temporary team. In addition, projects need capital and commitment of other resources and most of the time involve conflict. A project is completed when its goals and objectives are accomplished to the satisfaction of the stakeholders and when objectives are attained (PMI, 2013).

The construction industry is heterogeneous, enormously complex, sophisticated and time-consuming undertakings. It is subject to the influence of highly variable and sometimes unpredictable factors. No two construction projects are exactly the same, to a great extent each are unique, no two jobs are ever exactly the same. (Sears et al, 2015)

Adding to the complexity of construction projects is the mix of team specialists that include a multidisciplinary team of engineers (civil, electrical, sanitary), architects, financial, insurance, legal, design, safety and engineering specialists; construction teams of various trades; and an efficient supply chain for materials and equipment are needed to deliver the project (PMI construction extension, 2016).

Levy, (2010) states that the construction industry is a business of high risk and relatively low profit margins. The goal of any construction project is to build something. What differentiate the construction industry from other industries is that its projects are large, built on-site, and generally unique in nature (Ritz & Levy, 2013).

Construction contractors are the major actors in any construction project and are also the ones who are highly affected by the success or failure of a project. Hence, constant follow up and frequent evaluation of project status is one of the major activities undertaken throughout the project life time (Sears et al., 2015)

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

- Construction projects are undertaken at a fixed location or site, requiring a closer look at the logistical complexities involved. Resources required will have to be procured and taken to the site.
- Weather condition like snow, heavy rain, storm, sand, etc. 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.
- External influences and constraints would be different are different and change throughout the project timeline. These can include rates of technological change, sources of financing, market forces, climate change, politics, and changing client requirements.
- The timelines of construction projects are typically measured in years. Accordingly, clients would typically be required to have prepared and formalized at a very early stage, a design and budget. With some projects, the finer details and points are not fully worked out until after the works have commenced, thereby negatively impacting cost, quality, and timelines for the completion of activities.

2.1.2. Project Success

According to PMI (2013), the success of a project should be measured in terms of completing the project within its scope, in time, on budget, to the required quality, with the right amount of resources and also the constraint of risk as aggraded up on, between the project manager and senior managers. Project success should be referred to the last baselines approved by the authorized stakeholders.

In order for a project to be successful, the project team should Select appropriate processes required to meet the project objectives, Use a defined approach that can be adapted to meet requirements, Establish and maintain appropriate communication and engagement with stakeholders, Comply with requirements to meet stakeholder needs and expectations, and Balance the competing constraints of scope, schedule, budget, quality, resources, and risk to produce the specified product, service, or result (PMI, 2013).

Project success is the completion of projects within the specified period of time, within the budgeted cost, at the proper performance or specification level, with customer satisfaction and acceptance, with minimum or mutually agreed upon scope changes, without disturbing the main work flow of the organization and without changing the corporate culture, (Kerzner, 2009).

2.1.3. Project Processes

Project management involves five process groups as identified in the PMI (2013), which are the necessary competencies that must be achieved in order to secure the most effective use of project resources, namely initiation, planning, execution, monitoring and evaluation and project closing respectively. From the start to the end, a project goes through a whole lifecycle that includes defining the project objectives, planning the work to achieve those objectives, performing the work, monitoring and controlling the progress, and closing the project after receiving the product acceptance.

Project initiating process group: this stage defines and authorizes the project. The project manager is named, and the project is officially launched through a signed document called the project charter, which contains items such as the purpose of the project, a high-level product description, a summary of the milestone schedule, and a business case for the project.

It Involves Selection of the best project given resource limits, Recognizing the benefits of the project, Preparation of the documents to sanction the project and Assigning of the project manager. it consists of defining effectively the beginning of a project. Setting clear phases for work to be completed, initializing teams, and having the budget in place before work begins are also going to be conducted.

Project planning process group: In this stage, the project objective will be refined, and project management plan will be developed. The plan is a collection of several plans that constitute a course of actions required to achieve the objectives and meet the requirements of the project. Project scope management plan, a schedule management plan, and a quality management plan are the major outcomes of this process group. It involves defining the work requirements, defining the quality and quantity of work, defining the resources needed and scheduling all activates of the project. The projects' goals and expectations are going to be explained.

Project Executing Process group: The project plan is going to be implemented to achieve the objectives of the project. The main output of this stage is the project's deliverables. Changes, modifications and omissions, if there are any, are going to be implemented at this stage. The project

team is hired, and works are going to be started. It involves managing teams effectively while achieving time line expectations and reaching at milestones of the project. It is the process group where most of the projects budget will be utilized.

Project Monitoring and controlling process group: It is a process group which is performed through a project's lifecycle. Monitoring and controlling includes defending the project against scope creep, observing the project progress and performance and provide corrective actions if there are any deviations from the plan. It involves tracking progress, comparing actual outcome to predicted outcome, analyzing variance and impacts and also making adjustments. Monitoring and Controlling is where project team can get back on track, compare plan to actual, measure variance and take corrective action.

Project closing process group: It is a process group that involves conducting a project review for lessons learned, verification of the attainment of the project's objective and contractual closure, financial closure and administrative closure is done.

2.1.4. Monitoring and Evaluation

2.1.4.1. Monitoring and Evaluation System

Monitoring and Evaluation (M&E) is a process that helps improve performance and achieve results. Its goal is to improve current and future management of outputs, outcomes and impact. The past, present and the future will be linked through this system. It is one of the most powerful tools that influence the performance of a project (Gudda, 2011).

M&E is a key component of project management that gives control over the main parameters that define a project; scope, quality, resources, completion time and cost (Kerzner, 2017). Basically, we start the M&E process by measuring actual performance, which is then compared against planned performance. If there is any deviation (or variance), we analyze the causes. We formulate corrective actions and implement them to correct the variance, then repeat the process by measuring the revised performance and comparing it to planned activities until there is no more (Ritz & Levy, 2013).

2.1.4.2. Project Monitoring

According to Gudda (2011) monitoring is collecting the necessary information with a minimum effort in order to make a routing decision at the right time. The information gathered contains an important and necessary data base for analysis, discussion, evaluation and reporting. It is a regular and systematic process integrated in all the cycle of projects. It is a continuous function that aims

primarily to provide project managers and stakeholders of ongoing project with early indications progress or lack thereof, in the achievement of project objectives.

Monitoring is a broad management strategy aimed to see if programs are doing the right thing and are doing it right, in order to improve their quality. A good motoring is focused on results, records this results in reports, makes recommendations and follows-up with decisions and action. Its scope includes assessing the progress of projects and also providing managers with information that will be used as a basis for making decisions and taking action (Ritz & Levy, 2013).

According to J. 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, and budgets, materials purchasing invoices, worker time cards, change notices, test results and standards. Project monitoring tools and mechanisms include; field visits, annual project report, outcome groups and annual review (Sinha & Labi, 2011).

Monitoring involves repeated assessment of a situation over time. Having an initial basis for comparison helps you to assess what has changed over a period of time and if this is a result of the project's presence. So, you must have information about the initial starting point or situation before any intervention has taken place. This information is what is commonly known as the "baseline" of information. It is the line of the base conditions against which comparisons are made later on (Simon, 2013).

2.1.4.3. Types of Monitoring

According to Gudda (2011) the types of monitoring include process monitoring, technical monitoring, assumption monitoring, financial monitoring and impact monitoring.

Process monitoring/ physical progress monitoring: It involves a routine data collection and analysis in order to establish whether the project tasks and activities are leading towards the intended project results. This kind of monitoring measures the inputs, activities and outputs. It informs managers and owners of the project in keeping a check on weather activities in project are up to schedule. Managing physical progress can be linked to managing time. Project out puts, Project inputs, Progress of project according to objectives and the way the project is managed, and style of work are items to consider during physical progress monitoring. Project milestones are the simplest method for monitoring physical progress monitoring.

As stated by J. Jackson (2010) those three methods can be used for measuring physical progress of a project:

A. Quantifying output of the activity in absolute terms. It is used to determine what percentage of the work is completed on the project. It can be calculate by measuring the quantity of work executed to date relative to the total quantity of work planned.

$$\frac{\text{Work performed}}{\text{Work planned}} * 100(\%)$$

B. Valuing the output of the activity .it involves calculating earned value of the completed work and compare with total value of work planned.

$$\frac{\text{Value of work done}}{\text{Total value of Work planned}} * 100(\%)$$

C. Using time spent on the project /activity.

$$\frac{\text{Time spent to date}}{\text{Total time to complete}} * 100(\%)$$

Technical monitoring: assess the strategy that is being used in project implementation to establish whether it is achieving the required results. It involves the technical aspects of the project such as the activities to be conducted.

Assumption monitoring: any project has its working assumptions which have to be clearly outlined in the project log frame. These assumptions are those factors which might determine project success or failure, but which the project has no control over. Assumption monitoring involves measuring these factors which are external to the project. it involves the process of writing down the risks, assessing them and making all project team members be aware of their existence.

Financial Monitoring: refers to monitoring project expenditure and comparing them with the budgets prepared at the planning stage. Financial monitoring is important for accountability and reporting purposes, as well as for measuring financial efficiency and ensuring there is no excess or wastage of fund. It is used to estimate project cost at completion (PMI, 2013).

One of the budget monitoring or cost performance measurement techniques is the earned value technique (EVT). According to J.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. It shows what is planned for execution

Budgeted cost of work performed (BCWP) or earned value (EV): Earned value is the budgeted amount for the work actually completed on the schedule activity or work break down structure component during a given time period.

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.

An important part of the cost control is to determine the cause of variance, the magnitude of the variance and to decide if the variance requires corrective action. The earned value technique involves developing these key values for each schedule activity, work package or control account. The PV, EV and AC values are used in combination to provide performance measures of whether or not work is being accomplished as planned at any given time. 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).

$$CV = EV – AC$$

The 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.

$$SV = EV – PV$$

If schedule variance is positive, then the project is ahead of its planned cost. If it is negative, then the project is behind its planned cost. Schedule variance will ultimately become zero when the project is completed because all of the planned values will have been earned.

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.

Impact Monitoring: it is a type of monitoring which continually assesses the impact of project activities to the target population.

2.1.4.4 Project Evaluation

Garbutt, (2013) defined evaluation as "a learning and management tool; assessing what has taken place in order to improve future work, determine how far objectives have been achieved and whether the initial assumptions about what would happen were right; and, to make judgments about effectiveness, efficiency, impact and sustainability of the work." Additionally, (Catherman, 2013) also defines "Evaluation is the periodic assessment of changes in desired outcomes that can be attributable to a program's interventions. The aim is to determine the relevance and fulfillment of objectives, developmental efficiency, effectiveness, impact and sustainability.

Evaluation is the systematic and objective assessment of an ongoing or completed project, program, or policy, including its design, implementation, and results. An evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision-making process of both recipients and donors (IFRCS, 2011).

According to the IFRCS, 2011 the evaluation standards that guide us in evaluating our work are Utility, Feasibility, Ethics and legality, Impartiality and independence, Transparency, Accuracy, Participation and Collaboration.

2.1.4.5 Types of Evaluation

According to IFRCS, (2011) the different types of evaluation are;

Based on evaluation timing:

Formative evaluation: evaluation done during project implementation to assess project performance, providing continuous feedback to inform on-going changes and improvements.

Summative evaluation: is a form of assessment that traces its roots back to measuring the attainment of goals and objectives over time. It occurs at the end of project/program implementation to assess effectiveness and impact.

Midterm evaluations: is evaluation that occur midway through the project evaluation formative in purpose.

Final evaluations: are summative in purpose and are conducted at the completion of project implementation to assess how well the project achieved its intended objectives.

Ex-post evaluations: are conducted sometime after implementation to assess long term impact and sustainability.

Based on who conducts the evaluation:

Internal or self-evaluations: are evaluations conducted by those responsible for implementing a project.

External or independent evaluations: are evaluations conducted by evaluator(s) outside of the implementing team, lending it a degree of objectivity and often technical expertise.

Participatory evaluations: are evaluations conducted with the beneficiaries and other key stakeholders, and can be empowering, building their capacity, ownership and support.

Joint evaluations: Are conducted collaboratively by more than one implementing partner, and can help build consensus at different levels, credibility and joint support.

Based on evaluation technicality or methodology:

Real-time evaluations: are undertaken during project/program implementation to provide immediate feedback for modifications to improve ongoing implementation.

Meta-evaluations: are used to assess the evaluation process itself.

Thematic evaluations: focus on one theme, such as gender or environment, typically across a number of projects, programs or the whole organization.

Cluster/sector evaluations: focus on a set of related activities, projects or programs, typically across sites and implemented by multiple organizations (e.g. National Societies, the United Nations and NGOs).

Impact evaluations: focus on the effect of a project/program, rather than on its management and delivery.

2.1.4.6. Monitoring Vs. Evaluation

Monitoring and evaluations are interactive and mutually supportive processes. The main difference between monitoring and evaluation is their timing and focus of assessment. Monitoring is ongoing and tends to focus on what is happening. On the other hand, evaluations are conducted at specific points in time to assess how well it happened and what difference it made. Monitoring data is

typically used by managers for ongoing project implementation, tracking outputs, budgets, compliance with procedures, etc. Evaluations may also inform implementation, but they are less frequent and examine outcomes. However, monitoring and evaluation are essentially associated too; monitoring typically provides data for evaluation, and elements of assessment take place when monitoring (IFRCS, 2011).

2.1.4.7 Monitoring Tools

The most common and widely used communication tools in M&E system are progress reports, meetings and site observation respectively (OECD, 2011).

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

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

2.1.4.8. M&E Information and Data Collection Methods

M&E by themselves, they are not a solution, but they are valuable tools. There are various processes involved in the monitoring and evaluation of projects which when done correctly can lead to improvement and good delivery of projects in future. The most important benefit of having an information system is that in its own rights, it acts as a communication, planning and re-planning tool Meredith et al, (2013).

An information system facilitates recording, organization, retrieval, and dissemination of knowledge, which may include documents, reports, procedures, practices and skills. Generally, we need information to track and assess what has changed, both intended and unintended, and to understand the reasons for the changes. The information collected might either be; Quantitative information expressed in numerical terms as numbers and ratios for example and allow us to answer ‘what’, ‘how many’ and ‘when’ questions or Qualitative information is expressed through

descriptive prose and can address questions about 'why' and 'how', as well as perceptions, attitudes and beliefs (Hobson & Mayne, 2013).

Data collection methods and tools are an important element in M&E. The baseline survey, which aims at collecting baseline data about a situation, is an early element in the monitoring and evaluation plan whose information is used to systematically assess the circumstances in which the project commences. It provides the basis for subsequent assessment of how efficiently the activity is being implemented and the eventual results achieved. A baseline survey, simply put, is a study that is done at the beginning of a project to establish the status quo before a project is rolled out (Estrella & Gaventa, 2010).

At the beginning of the M&E process a baseline data on indicators is necessary to know or understand the situation before the project is started. They are derived from outcomes and indicators. Indicators are measures of change(s) brought about by an activity. They communicate information about progress towards particular goals. They provide both qualitative and quantitative data that reveal the effectiveness of project implementation that is, problems encountered, and successes achieved so far (Gudda, 2011).

M&E findings have many potential audiences and the main purpose of communicating findings is to ensure accountability and motivate stakeholders to action. A key communication task is to ensure that your findings are correct and are properly archived to be accessed at any time (Gudda, 2011)

2.1.4.9. Purpose of Monitoring and Evaluation

According to Hobson & Mayne, (2013) M&E helps to determine the extent to which the project is on track and make the necessary corrections accordingly, to make an informed decision regarding the management process, to ensure the most effective and efficient use of resources and also helps to evaluate the extent to which the project is having or has had the desired delivery.

The aim of M&E is to determine the fulfillment of objectives, determine efficiency, effectiveness and impact of a project (OECD, 2011). Monitoring and evaluation systems can be an effective way to provide constant feedback on the extent to which the projects are achieving their goals, Identify potential problems at an early stage and propose possible solutions, Monitor the accessibility of the project to all sectors of the target population, Monitor the efficiency with the extent to which the project is able to achieve its general objectives and Provide guidelines for the planning of future projects (Gudda, 2011).

Monitoring and evaluation can help organization extract relevant information from past and ongoing activities that can be used as the basis for programmatic improvement, 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 (Hobson & Mayne, 2013).

Both big and small organizations should monitor and evaluate their projects to have its benefit which is outlined in project/ program monitoring and evaluation guideline (IFRCS,2011) , according to this guideline performing monitoring and evaluation to any project will be important to the organization because:

- It Support project implementation with accurate, evidence-based reporting that informs management and decision-making to guide and improve project performance.
- It Contribute to organizational learning and knowledge sharing by reflecting upon and sharing experiences and lessons so that can gain the full benefit from what do and how organization do it.
- It Uphold accountability and compliance by demonstrating whether or not the work has been carried out as agreed and in compliance with established objectives.
- It Provide opportunities for stakeholder feedback, especially beneficiaries, to provide input into and perceptions of work, modeling openness to criticism, and willingness to learn from experiences and to adapt to changing needs.
- It Promote and celebrate the work by highlighting, accomplishments and achievements of contributing to resource mobilization.

2.1.4.10. Challenges in M&E

M&E is an important component of project design and implementation. It is also a management tool that generates a large amount of vital information that allows project administrators to identify the major problems, constraints and successes encountered during implementation, adjust project activities, plans and budgets, and to provide information for accountability and advocacy. M&E therefore plays a crucial role in enhancing a project's success (Hobson & Mayne, 2013). However, there are a number of constraints and challenges that hinder the implementation and use of M&E in an organization. The major challenges include; poor organizational capacity, paucity of competent staff (lack of skilled employees), misunderstanding on the role and utility of M&E,

inadequate mandate of those charged with M&E responsibilities and no or little budget allocation for M&E activities, (FAO, 2010).

According to OECD, 2011 difficulties in M&E system include the following.

- Poor system design in terms of collecting more data than are needed or can be processed
- Inadequate staffing of M&E both in terms of quantity and quality
- Missing or delayed baseline studies. Strictly these should be done before the start of project implementation, if they are to facilitate with and without project comparisons and evaluation
- Delays in processing data, often as a result of inadequate processing facilities and staff shortages. Personal computers can process data easily and quickly but to make the most of these capabilities requires the correct software and capable staff
- Delays in analysis and presentation of results. These are caused by shortages of senior staff, and by faulty survey designs that produce data that cannot be used. It is disillusioning and yet common for reports to be produced months or years after surveys are carried out when the data have become obsolete and irrelevant. This is even more the case when computer printouts or manual tabulations of results lie in offices, and are never analyzed and written up. finally, even where monitoring is effective the results often remain unused by project staff

2.1.5. Construction Project Costs

Building contractors agree to undertake projects for a certain contract amount, which is estimated based on construction projects cost estimating standards and make it their basis for preparing the cash flow of the project. The contractor takes this amount as its income and register all the costs it inquires to attain the project objectives as expenses of the project. Each task of the project is assigned a cost estimate per unit, that can breakdown to direct and indirect cost necessary to do that specific task (Ottosson, 2013).

Construction contractors are the major actors in any construction project and are also the ones who are highly affected by the success or failure of a project. Hence, constant follow up and frequent evaluation of project status is one of the major activities undertaken throughout the project life time (Sears, 2015).

Direct costs of construction project

The costs and expenses that are accountable directly on a project are called as direct costs. Direct costs in construction projects are direct material costs, direct labor costs, subcontractor costs, and direct equipment costs. These costs for a construction project are developed as estimates by means of detailed analysis of the contract activities, construction method, the site conditions, resources and standard cost break down analysis. They tend to be variable.

Indirect costs of construction project

Indirect costs are costs that are not directly accountable for a particular project. Indirect costs can be either variable or fixed. These costs do not have a direct connection with the construction project. They can be costs that cannot be directly allocated for a specific task like cost of stores, safety facilities, workshops, onsite offices, staffs and parking facilities. They can also be costs that cannot be directly charged for a specific project like costs cost of the design engineers, expenses of head-office, cost of directors and managers, schedulers etc. they most of the time are fixed or periodic in nature.

2.2. Empirical Review

Some empirical literatures that were related to the research are reviewed by the researcher and presented as follows:

Hidaya (2011) in his research states 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 follow up, communications and collaboration to manage and control these activities.

The importance of planning monitoring and controlling projects in construction projects was stated in the research conducted by Abebe (2015). The criticalness of evaluating progress reports and also forwarding feedback on the results of these evaluation was also stated in this research. Monitoring project cost must not be the only focus of monitoring and evaluation of construction project was also one of the issues stated.

The data collected through an M&E system should have an excellent quality, since it is going to be used in the decision-making process of the company. In addition to that the data collection mechanism should be effective too. Trainings on M&E system should also be provided for the

organization staff so that their interest and knowledge can mature to the expected level (Demissie, 2014).

2.3. Conceptual Framework

Based on different literatures reviews, the researcher developed the conceptual framework shown on the diagram below. Monitoring and evaluation system contains input activities, process and outputs which are clearly stated in the figure below. It is the sum total of all those interrelated activities.

M&E system of the firm starts with collecting data on the income of the project, expense of the project and problems encountered during the implementation of the project. The total quantity of work executed multiplied by the rate of that specific work item provides with the income of the project. Project schedule & milestones, Projects' contract agreement and project's financial report are also going to be collected. Expense of the project includes direct material cost, direct labor cost, direct equipment costs for the work item executed. It also includes site overhead cost and office overhead costs of the project too. All the above data is collected on a weekly basis. The evaluation part will be conducted at a weekly meeting that is held at the head office of the company. The existence of resources wastage, schedule deviation, project cost variation (material, labor and equipment costs variation), comparison of planned VS actual work performed and project status regarding time, project cost, project scope and expected standard quality are also issues that are going to be discussed during the process. Details of the calculation of quantity of work executed is also part of the weekly report of projects. After all the analysis is completed, physical progress report, project financial status report, current project status details regarding time, cost and scope, report on material usage, report on quality of work performed are all the outputs of the system.

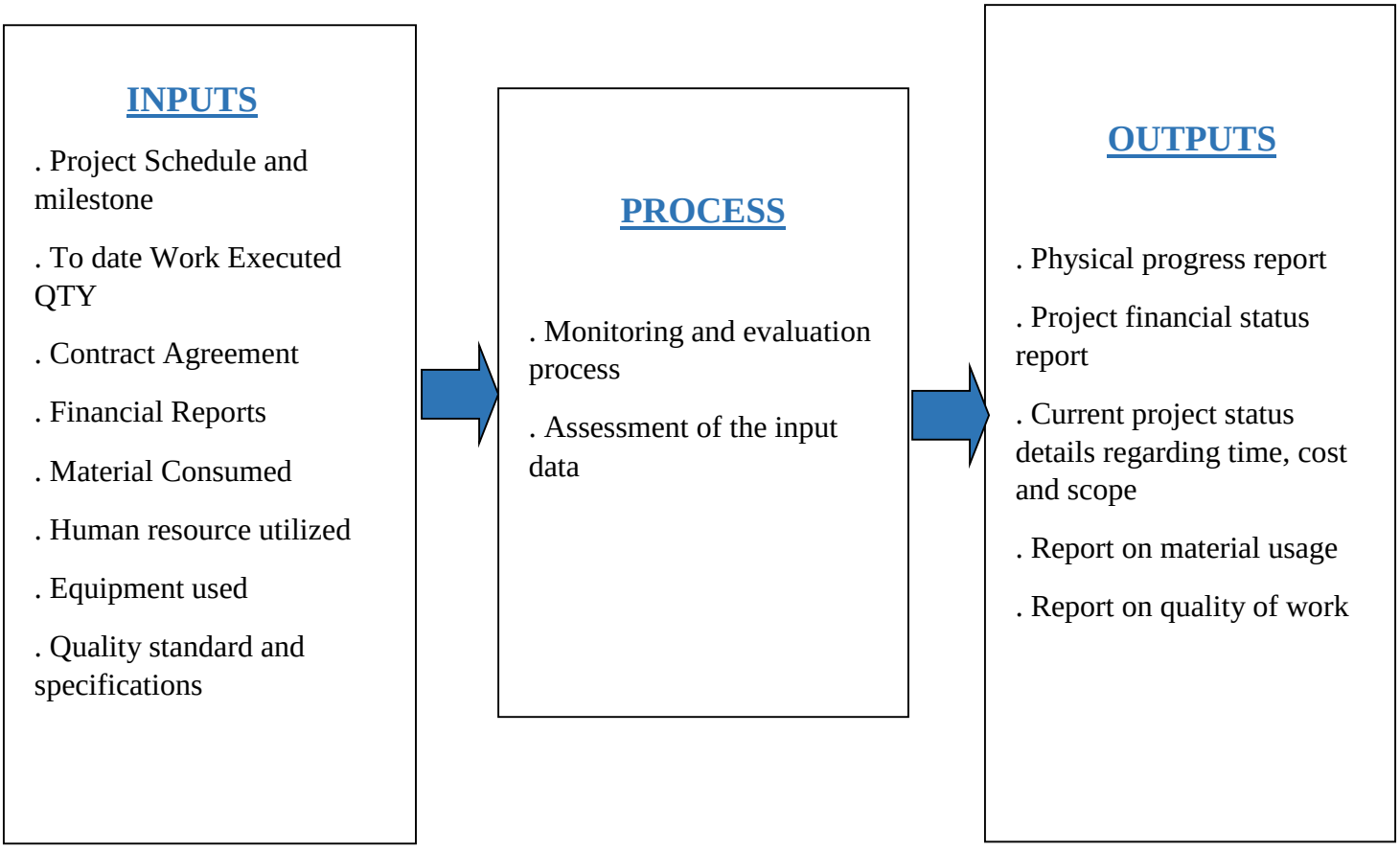


Figure 2.1: Conceptual framework, source: developed by the researcher

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter is a review of methods of data collection and analysis implemented in conducting this research; it explains the type of research strategy used, 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

A research design provides a framework for the collection and analysis of data (Bryman & Bell, 2011). This study intended to realize how the firm monitor and evaluate its projects and also it seeks to assess the current state of the monitoring and evaluation practice at the firm, therefore, a descriptive research methodology is used. According to Kothari (2008), a descriptive research design is used to describe an event or a feature of things as it exists at present and is appropriate when the study is concerned in specific predictions, narrative of facts and characteristics concerning individuals or situations.

A descriptive study is concerned with finding out the what, where and how of a phenomenon, Saunders et.al (2009). Hence, a descriptive research will enable us to answer the questions of who, what, when, where and how details of the M&E system of the company. By doing this, this study will also be building a profile about monitoring and evaluation.

3.2. Data type

In order to make it suitable for the collection of the required information from sample and make the analysis easier, the study used both quantitative and quantitative methods. Using a combination of qualitative and quantitative data can improve an evaluation by ensuring that the limitations of one type of data is covered by the strengths of the other.

3.3. Data sources

Both Primary and secondary data were used in this research study. The primary data was attained directly from key informants which included project managers, office engineers and project coordinators by employing both questionnaire and key informant interview. In addition, the

questioner and key informant interview were self-administered. Secondary data, was collected by reviewing records of the company's weekly reports, monthly reports and other essential reports related to M&E.

3.4. Sample size and sample design

The target group in this research study were firsthand participants of project observing and assessment process of the company, which include the Project managers, on site office engineers and project coordinators were all included in this research. According to the human resource management department of the firm there are 26 active projects which involved 26 project managers, 22 onsite office engineers and 4 project coordinators located at the head office. The number of key informants for this research was manageable, so a census method of sampling technic was employed.

3.5. Data collection method and tools

Data collection instrument, both the questioners and interview questions were developed by the researcher. When finalized, the questioners were distributed to respondents after a short briefing about the objective of the assessment. Similarly, person to person interview with key informants was undertaken; relevant secondary data were also obtained from the company's documents.

Basically, two major data collecting methods were employed by the researcher. To collect primary data from key informants a semi-structured open-ended interview questions along with questioners were deployed.

The semi-structured interview guide was developed by taking the research questions and the objectives of the study into considerations. All relevant variables have been included to help in identifying as well as conclude the problems and to provide appropriate recommendations. The main reason for using a Semi-structured open-ended question was that the interviewee can elaborate more on issues that require additional explanation. The primary advantage for interview is that they provide much more detailed information than data collected via other data collection methods such as survey Carolyn and Palena (2006).

The questionnaire contains mainly closed ended and few open-ended questions. It is an appropriate instrument to obtain variety opinions within a relatively short period of time. The questionnaire

statements were evaluated on a 1-5 Likert-scale, where _1‘indicates strongly agree with the statement, _2‘agree, _3‘neutral, _4‘disagree and _5‘strongly disagree with the statement. In addition, respondents were asked to rank on a scale of 1-3, the current M&E effectiveness and current condition as Poor =1(one), medium = 2(two) and Good=3(three) too. Since the media of communication in the company and on projects indirect labor force is English, the questionnaire was constructed in English. The questionnaire consisted of different parts mainly focusing on the monitoring and evaluation practices and its current status.

3.6. Data analysis and presentation

Data is analyzed using both quantitative and qualitative techniques of data analysis. For quantitative analysis, data were evaluated based on the responses from the distributed questionnaire and each response was administered by using a software application SPSS (Statistical Packages for Social Science) version 25 and excel. The questionnaires were collected, coded and entered in to a data entry template. In addition, summary tables and charts were also used for describing data. The results of the interview questions were also integrated to the responses of the questionnaires and analyzed accordingly. Finally, conclusions were made based on the findings of the study and recommendations were forwarded built on the data analyzed.

3.7. Reliability and validity

Validity refers to the ability of the instrument to measure what it is designed to measure. Saunders et al., (2009) states that validity is the strength of our conclusions, implications or propositions. It is concerned with whether an instrument is on target in measuring what is expected to measure. To check the validity of the instrument the researcher worked with the adviser as the expert and agreed whether the instrument was valid or not. The survey and interview questionnaire were also developed based on the literature review and frame of reference to ensure validity of the results.

According to Saunders et al., (2009) reliability indicates the extent to which the items in a questionnaire are related to each other and also it verifies whether or not it will produce steady findings at different times and under different conditions. One of the most commonly accepted measures of reliability is Cronbach's alpha. It measures the internal consistency of the items in a scale that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. The normal range of Cronbach’s coefficient alpha value ranges between 0-1 and

the higher values reflects a higher degree of internal consistency and values less than 0.5 are unacceptable. Internal consistency involves correlating the responses to each question in the questionnaire with those to other questions in the questionnaire. The formula for the standardized Cronbach's alpha is as shown below:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Where

N is equal to the number of items,

C-bar is the average inter-item covariance among the items and

V-bar equals the average variance.

Table 3.1: Reliability sample testing scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.877	34

Saleh (2009) states that internal consistency using Cronbach's alpha can be described 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

The reliability scale result of this research is 0.877 which indicates that there is a very high consistency. As a result, it can be said that the questionnaire is reliable and ready for distribution to respondents.

3.8. Ethical consideration

Ethics in research deals about questions on 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 (Saunders et al., 2009). Ethics is there to minimize harm and to ensure that the research participants are not subjected to any risk or exposure due to improper methods of protecting privacy.

Therefore, the researcher was granted permission by the concerned authority of BamaCon Engineering PLC to use all the necessary information required in conducting this research. Each participant was asked to voluntarily participate in the study. They were informed about the study and willingly filled the questioner. The responses of each participant are kept confidentially. Research findings are purely the results of analysis of the collected data without trimming and cooking. There is no intentional unacknowledged use or incorporation of any other person's work in my thesis.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

In this section, summaries of the data obtained in the study are presented, analyzed, interpreted and discussed in detail. Frequencies and mean were used to analyze the data gather through questioners, interview and document review and were analyzed using SPSS and Excel.

A total of 52 questionnaires which focused on the monitoring and evaluation practice of the company were distributed to employees who directly participate in the M&E process. However, 47 questionnaires were filled appropriately and returned, which is a 90.38 % response rate.

The questionnaire contains close ended questions and some open-ended questions which will focus on issues such as by whom M&E is conducted, its significance on projects, difficulties on the process and the M&E system as a whole. Most 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. The data has been analyzed in SPSS so that the accuracy of the information is maintained. In addition to this a self-administered semi-structured open-ended interview questionnaire is also used to support the researcher in discussing the issues raised more clearly. All the interview questions were structured so that it match the contents of the items enlisted in the questionnaire.

4.2. General Information

This part of the questionnaire consists of the demographic information of the participants. Accordingly, the demographic variables about the respondents were summarized and described using variables like sex, age, level of education, job position, and work experience on current work position and whether they participate in the M&E system of the firm or not is also.

Tables below shows general information about sex, age, level of education, job position, work experience and participation in the M&E system of the respondents.

Table 4.1: General information about respondents

Variables	Frequency	Percent
Sex		
Female	18	38.3
Male	29	61.7

Total	47	100
Age		
<= 30 Years	18	38.3
31 – 40 Years	25	53.2
41 – 50 Years	4	8.5
Total	47	100
Level of Education		
B.Sc. Degree	36	76.6
Masters	11	23.4
Total	47	100
Position at the firm		
Project Manager	23	48.9
Project Coordinator	4	8.5
Office Engineer (Onsite)	20	42.6
Total	47	100
Number Of years on current position		
<= 1year	10	21.3
2 - 5 years	20	42.6
6-10 years	13	27.7
>10 Years	4	8.5
Total	47	100
Participation on M&E system of the firm		
Yes	47	100
Total	47	100

Source: Survey Data

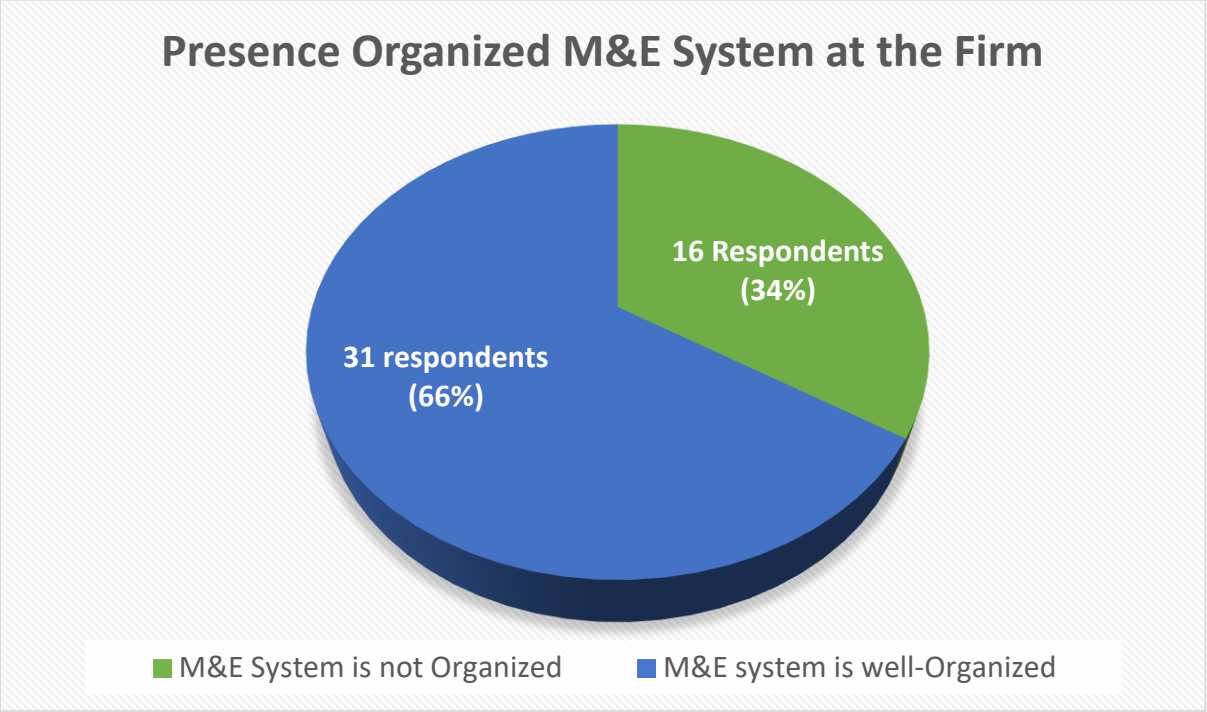
Based on the analysis 18 (38.3 %) of respondents are female and 29 (61.7 %) of the respondents are male. When we look at the age range of this research respondents, 18 respondents (38.3%) are <= 30yeras old, 25 respondents (53.2%) are between the age of 31 – 40 and 4 respondents (8.5%) are between the age of 41 – 50 respectively. As it can be seen, majority 76.6% of respondents have an educational qualification of first degree and followed by 23.4 % of the respondents having

second degree (Master's Degree). The table 4.1 shows that 48.9% of the respondents are Project managers, 8.5% are Project Coordinators and 42.6% are Onsite Office Engineers respectively. In addition to that majority 42.6% of the respondents have a work experience of 2 – 5years, followed by 27.7% between 6-10 years, 21.3% less than 1year and 8.5% greater than 10 years of working experience on their current position. Finally, all the respondents are involved in the M&E practices of the company.

4.3. M&E System of the firm

A well-organized M&E system is crucial in construction project management and 66% of the respondents agreed that the firm has a well-organized M&E system and 34% do not agree to it at all.

Chart 4.1: Structure / Organization of the M&E System



Source: Survey study

Regarding a written M&E plan, guide and frame work of the firm 4 (8.5%) of the respondents believe that there is, 13 (27.7%) respondents say there is no frame work for it and 30 (63.8%) of the respondents have no opinion on the matter at hand.

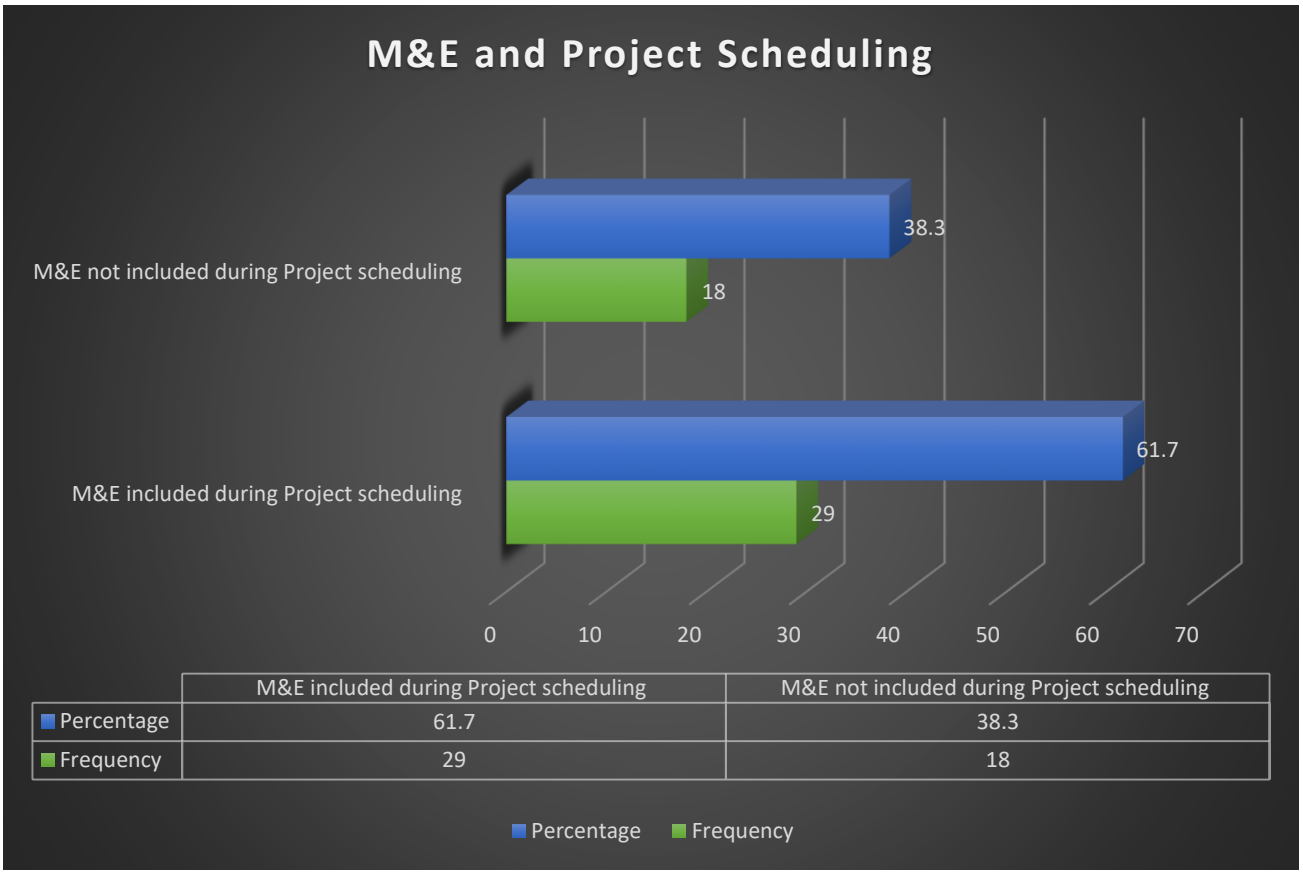
Table 4.2: Existence of M&E plan or guide or framework

Number Of years on current position	Frequency	Percent
Yes	4	8.5
No	13	27.7
No Opinion	30	63.8
Total	47	100

Source: Survey Data

Based on many literatures reviewed above, M&E process should be included in the project management process, starting from the planning stage of a project. Results of this research show that 61.7% respondents state that the process is included during the project schedule establishment period and project schedule is one of the inputs for monitoring and evaluation of projects and 38.3% respondents state that it is not included during this establishment.

Chart 4.2: M&E and Project Scheduling



Source: Survey Data

The data gathered from the questionnaires shows that all the respondents choose more than one type of monitoring applied on projects. Table 4.3 shows that 66% of the respondents reported that they use Process/Physical progress, Technical, Financial and Quality Monitoring on the projects, 19.1% Process/Physical progress, Financial and Quality Monitoring and 14.9% of them reported that they use Process/Physical progress and Quality Monitoring only.

Table 4.3: Types of Monitoring conducted

Types of monitoring	Frequency	Percent
Process/Physical Progress Monitoring, Technical Monitoring, Financial Monitoring And Quality Monitoring	31	66
Process/Physical Progress Monitoring, Financial Monitoring And Quality Monitoring	9	19.1
Process/Physical Progress Monitoring And Quality Monitoring	7	14.9
Total	47	100

Source: Survey Data

Regarding the type of evaluation implemented, all the respondents replied that Formative evaluation, which is done during project implementation to assess project performance, to providing continuous feedback and to inform on-going changes and improvements is used as an evaluation technique for the firm's projects. Performance indicators are used as the M&E tools and techniques used. The M&E system is a team work effort, involving project managers, Onsite office engineers and project coordinators.

When it comes to the M&E communications, 46.8% respondents stated that the M&E system output report is only submitted to the managing director, 19.1% of them submit reports to the consultant and the managing director and 34% of them report to the managing director, to the consultant and as well as to the stakeholders/client of projects.

Table 4.4: Submittal of M&E Information

M&E Information submittal	Frequency	Percent
To managing director only	22	46.8
To consultant and Managing Director	9	19.1
To managing director, to consultant and to stakeholders	16	34
Total	47	100

Source: Survey Data

When it comes to the general M&E practices of the firm, most the respondents (78%) disagreed the fact that the firm's effective communication of its M&E functions and roles to all its staff and 21.3% did not disagree nor agree to the statement. According to the respondents, the firm compares planned project activities schedule against actual schedule in order to determine project schedule performance of projects. Additionally, they also established that there is a routine collection and analysis of data in order to measure performance of projects. 53% of the respondents disagree on the existence of adequate staff in performing the M&E process and 46.8% agreed on the presence of adequate staff for the system. This implies that the staff for the practice requires some improvement regarding its capability.

The respondents conveyed that the firm does not provide any type of trainings on monitoring and evaluation of projects. They also strongly agreed on the fact that the M&E information is used in assisting the decision-making process of the company and also the planning process on its projects too.

Table 4.5: The General M&E System of the firm

No	Variable	Mean	Medina	Mode	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
10	The firm effectively promotes and communicates M&E functions and roles to all its staffs.	4.23	4	5	-	-	10	16	21
11	The firm compares planned project activities	1	1	1	31	16	-	-	-

	schedule against actual schedule in order to determine project schedule performance								
12	Data is routinely collect and analyzed to measure project performance.	1.34	1	1	47	-	-	-	-
13	The staffs conducting M&E are adequate.	2.28	3	3	12	10	-	25	-
14	The firm provides M&E training to its staffs involved in M&E.	4.8	5	5	-	-	-	8	39
15	The M&E training provided is effective and it improves the capacity of the staffs.	4.83	5	5	-	-	-	8	39
16	M&E information is used to assist in decision-making and planning.	1.13	1	1	41	6	-	-	-

4.4. Difficulties in M&E practice

As indicated on table 4.10, the 74.5% respondents agreed on the fact that there is an inadequate understanding of M&E system at organizational level and 25.5% have a neutral opinion on the situation. 61.7% of the respondents disagreed lack of competent staff/skilled staff to carry out M&E practices, 31.9% had neutral opinion and 6.4% agreed to the idea. They strongly agreed on lack of time and resources to conduct M&E and strongly disagreed on the implementation of inappropriate M&E strategy and the unavailability of data gathering and analyzing tools too. Difficulty in communicating the results of M&E and Data Tampering during M&E Result Reporting period are also the strongly agreed up on difficulties of the system. 31.9% of

respondents agreed to the problem of M&E practices not being given priority by the management of the firm whereas 68.1% of respondents disagreed with this difficulty.

Table 4.6: Difficulties in M&E Practice

No	Variable	Mean	Medina	Mode	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	There is an inadequate understanding of M&E at organizational level.	2	2	2	12	23	12	-	-
2	There is lack of competent staff/skilled staff to carry out M&E practices	3.55	4	4	-	3	15	29	-
3	Lack of time and resources to conduct M&E.	1.21	1	1	37	10	-	-	-
4	Inappropriate M&E implementation strategies are applied.	4.3	4	4	-	-	-	33	14
5	Unavailability of data gathering and analyzing tools.	4	4	4	-	-	-	47	-
6	M&E practices are not give priority by the management of the firm.	3.36	4	4	-	15	-	32	-
7	Difficulty in communicating the results of M&E.	1.38	1	1	29	18	-	-	-
8	Data Tampering during M&E Result Reporting period.	1.13	1	1	41	6	-	-	-

4.5. Benefits of M&E practice at the firm

Based on the response gathered from key informants the information obtained from the questionnaires were summarize and discussed the significance of M&E practices at the firm as follows. The respondents strongly agree the current M&E practice at the firm helps in improving project performance. 29 (61.7%) respondents agreed, 11 (23.4%) neutral and 7 (14.9%) respondents disagreed on the fact that sufficient data can be acquired from the system, which can be used as a basis during project modification works. All the respondents strongly agreed on the fact that M&E helps to identify problems, to provide solution to them and can be used to monitor the progress of a project respectively. They also strongly agreed on the fact that it can be used to evaluate the achievement of our project objectives too. 23respondants agreed on the fact that the M&E system can be used to communicate information regarding the project to the staffs, but 14 respondents have a neutral opinion and 10 of them disagreed on the above issue. All of them agreed on the help of M&E system in learning from experience and in adapting necessary changes.

Table 4.7. Benefits of M&E practices at the firm

No	Variable	Mean	Medina	Mode	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The current M&E practice of the firm helps in improving project performance.	1.21	1	1	37	10	-	-	-
2	The M&E practice helps in acquiring sufficient data to be used as a basis for project modification.	2.53	2	2	-	29	11	7	-
3	M&E can be used to monitor the progress of a project.	1	1	1	47	-	-	-	-
4	M&E helps to identify problems and provide solutions.	1	1	1	47	-	-	-	-

5	M&E can be used to evaluate the achievement of project objectives.	1.17	1	1	39	8	-	-	-
6	Information regarding the project can be communicated to the staffs and to the stakeholders/owners of the project through M&E.	2.72	3	2	-	23	14	10	-
7	M&E helps in learning from experience and in adapting necessary changes.	1.6	2	2	19	28	-	-	-

Source: Survey Data

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS & RECOMMENDATIONS

5.1. Introduction

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

5.2. Summary of Findings

The responses given by the respondents and interviewees have been analyzed and interpreted. Based on the data presentation and analysis, the study comes up with the following findings.

Based on the results of the research study, the firm has not completely but a well-organized M&E system on its projects, but it does not have a guide and framework for it. The M&E process is also part of the project schedule. The firm applies physical progress monitoring, technical monitoring, financial monitoring and quality monitoring types, but it does not apply assumption monitoring in its process. A formative evaluation type only is used for the evaluation part and performance indicators are used as the M&E tools and techniques applied. Project manages, onsite office engineers, project coordinators, the managing director and consultant representative are involved in the M&E process of the firm. The information gathered through this process are directly provided to the managing director, the consultant and to stakeholders/client of the project. The function and role of the M&E system is not effectively promoted to the staff. The planned project activities scheduled are compared against actual work progress to determine the project's schedule performance. Data regarding the project is routinely collected and analyzed to measure project performance on a weekly basis. The staff conducting the M&E do not have any prior training provided to them or what so ever. They conduct the process from previous experience only. There is some inadequacy of the staff. Overall the M&E is used in the firm's decision-making process regarding its projects all the time.

5.3. Conclusion

Generally, in response to the research problem and hence answering the research questions, the following conclusions were drawn:

- The firm has a well-organized M&E system but not entirely a well thought-out one. It has some weaknesses and drawbacks that some participants in the process mentioned. It also does not have an M&E plan, guide or framework too.
- The firm does not conduct assumption monitoring, which involves measuring factors that are external to projects but can determine the success or failure of the projects.
- The M&E system is significant in the company in that it supports the attainment of the project objectives.
- The monitoring and evaluation practices are consider during the planning phase of projects, which is a good thing for the firm. The firm uses a limited sort of technique in conducting its M&E system.
- The study revealed that the M&E system does not have its own department, but it is a team effort among the participants of the system.
- The study revealed that the firm applies information generated by its M&E in the decision-making process, but the role of the system is not effectively communicated to the staff.
- With respect to challenges in the M&E practice, several challenges are evidenced from the study. Among other things, data tampering during the reporting process, lack of time and resources in conducting the M&E and so forth.
- Based on this analysis it is clearly known that the firm does not involve all staff in the process of its M&E and also data gained from the process is not disseminated to them too.
- According to the respondents, data is gathered on a daily basis and reported to the management, stakeholders and consultant representatives on a weekly basis.

5.4. Recommendation

Based on the result of the study and conclusion made together with lesson drawn from literature on monitoring and evaluation practice, the following important statements are recommended.

- In order to have an effective M&E system, the firm needs to establish a monitoring and evaluation plan, guide and framework at organization level.

- Assumption monitoring, which deals with external factors that can affect our project, should be included in its system.
- The firm should improve the adequacy of its staff performing the M&E. A department which is specifically responsible for M&E should be created and a continuous training for the members should be provided.
- Sufficient time for preparing conducting M&E and adequate resources should be assigned to the process.
- The communication methods of the M&E system should be revised and improved in to a more technological one. A less time taking tools should be implemented for the information transferring purpose.
- In order to avoid the data tampering concerns of the system, a constant awareness creation program on the need for the M&E system, the importance of raw data and the effect of a tampered data on the system should be enforced.

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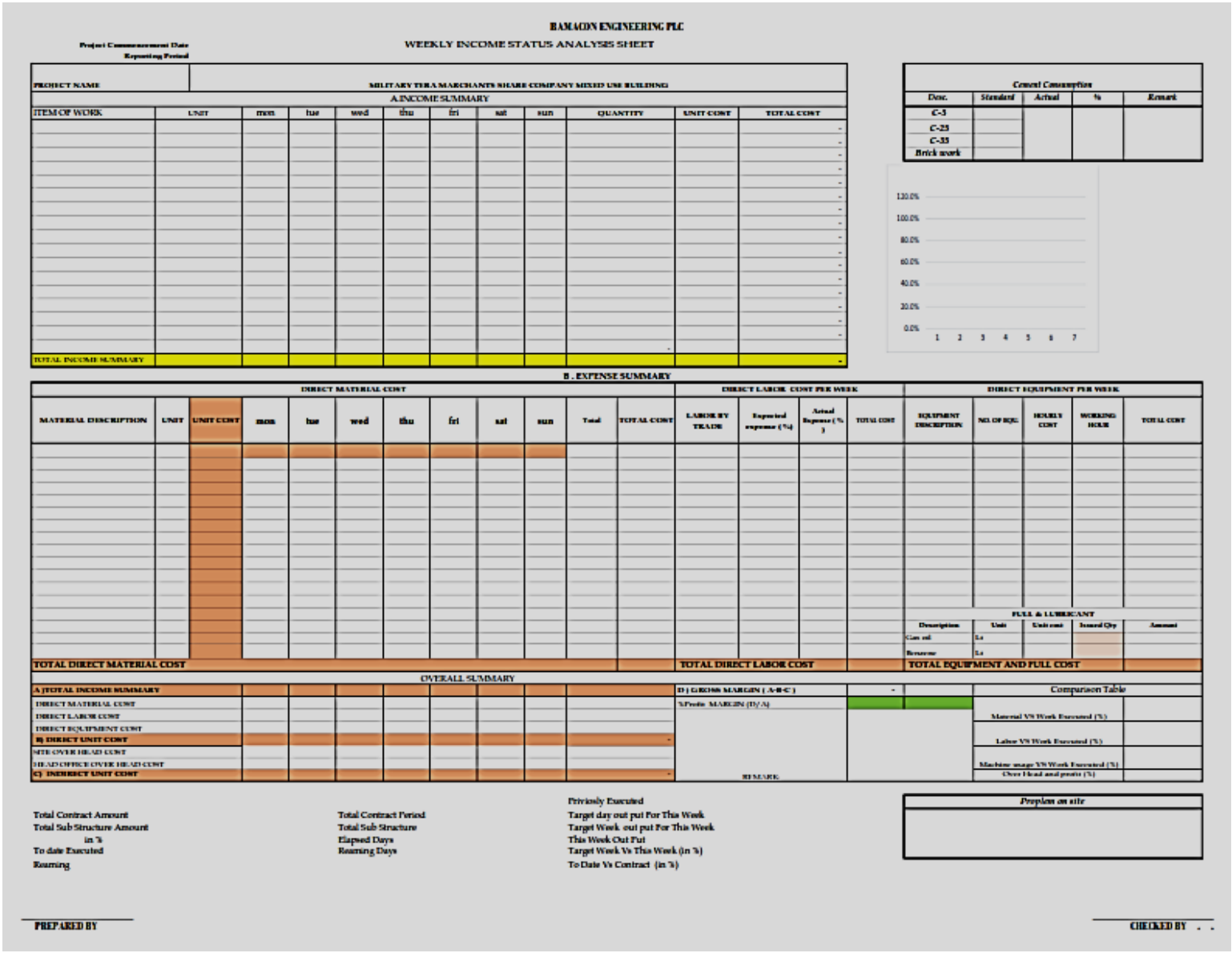
APPENDIX

Appendix I – Weekly Report



BAMACON ENGINEERING PLC

WEEKLY INCOME STATUS ANALYSIS SHEET

Project Commencement Date
Reporting Period

PROJECT NAME	MILITARY TERA MARCHANTS SHARE COMPANY MIXED USE BUILDING

A.INCOME SUMMARY

ITEM OF WORK	UNIT	mon	tue	wed	thu	fri	sat	sun	QUANTITY	UNIT COST	TOTAL COST
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
											-
TOTAL INCOME SUMMARY									-		-

Cement Consumption

Desc.	Standard	Actual	%	Remark
C-5				
C-25				
C-35				
Brick work				

B . EXPENSE SUMMARY

DIRECT MATERIAL COST												DIRECT LABOR COST PER WEEK				DIRECT EQUIPMENT PER WEEK				
MATERIAL DESCRIPTION	UNIT	UNIT COST	mon	tue	wed	thu	fri	sat	sun	Total	TOTAL COST	LABOR BY TRADE	Expected expense (%)	Actual Expense (%)	TOTAL COST	EQUIPMENT DESCRIPTION	NO. OF EQU.	HOURLY COST	WORKING HOUR	TOTAL COST
																FUEL & LUBRICANT				
																Description	Unit	Unit cost	Issued Qty	Amount
																Gas oil	Lt			
																Benzene	Lt			
TOTAL DIRECT MATERIAL COST												TOTAL DIRECT LABOR COST				TOTAL EQUIPMENT AND FULL COST				

OVERALL SUMMARY

A)TOTAL INCOME SUMMARY										D) GROSS MARGIN (A-B-C)	-		Comparison Table	
DIRECT MATERIAL COST										%Profit MARGIN (D/A)			Material VS Work Executed (%)	
DIRECT LABOR COST														
DIRECT EQUIPMENT COST													Labor VS Work Executed (%)	
B) DIRECT UNIT COST									-					
SITE OVER HEAD COST													Machine usage VS Work Executed (%)	
HEAD OFFICE OVER HEAD COST														
C) INDIRECT UNIT COST									-	REMARK			Over Head and profit (%)	

Total Contract Amount
Total Sub Structure Amount in %
To date Executed
Running

Total Contract Period
Total Sub Structure
Elapsed Days
Running Days

Priviously Executed
Target day out put For This Week
Target Work out put For This Week
This Week Out Put
Target Work Vs This Work (in %)
To Date Vs Contract (in %)

Peoplem on site

PREPARED BY

CHECKED BY

Appendix II – Takeoff Sheet

TakeOff Sheet

Project:

Location:

VOLUME/AREA			ITEM/DESCRIPTION/ SKETCH	VOLUME/AREA			ITEM/DESCRIPTION/ SKETCH

Prepared By Checked By Approved By

Appendix III – Reinforcement bar schedule

REINFORCEMENT BAR SCHEDULE

NO	LOCATION	dia	Length	spacing length	spacing	No of Bar	No of members	Totla Length	Diamete							
									6.000	8.000	10.000	12.000	14.000	16.000	20.000	24.000
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
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									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
									-	-	-	-	-	-	-	-
			TOTAL LENGTH, M						-	-	-	-	-	-	-	-
			UNIT WEIGHT , KG/ M						0.222	0.395	0.617	0.888	1.209	1.579	2.467	3.552
			TOTAL WEIGHT,KG						-	-	-	-	-	-	-	-

Appendix IV- Questionnaire

St. Mary's University

School of Postgraduate Studies

College Of Business Administration

Department Of Project Management

The objective of this Questionnaire is to gather first-hand information that will help in Assessing the Project Monitoring and Evaluation Practice at BamaCon Engineering PLC. All data and information that will be gathered through this Questionnaire will be used for the sole purpose of the research and remains confidential. Therefore, you are kindly requested to respond to the questions with utmost good faith, freely and to the best of your knowledge.

Thank you in advance for your time and kind cooperation.

Section I: General Information

1. Sex:

☐Female ☐Male

2. Age:

☐<= 30 Years ☐41 – 50 Years

☐31 – 40 Years ☐>50 Years

3. Level of Education:

☐Diploma ☐Masters

☐BSc. Degree ☐above Master

4. Current position at the firm:

☐Project manager ☐Project coordinator ☐Office engineer

5. Number of years worked in current position:

☐<= 1 year ☐2-5 years

☐6-10 years ☐ >10 years

6. Have you ever been involved in M&E practice of the firm?

☐Yes ☐No

Section II: M&E System

1. Does the firm have a well-organized M&E system on its projects?

☐Yes ☐No ☐No opinion

2. Is there a written M&E plan/guideline/framework in your firm?

☐Yes ☐No ☐No opinion

3. Are Monitoring and Evaluation activities part of the project schedule?

☐Yes ☐No ☐No opinion

4. What type of Project Monitoring does the firm uses?

☐Process / physical progress monitoring

☐Technical monitoring

☐Assumption monitoring

☐Financial monitoring

☐Quality monitoring

☐Other (please specify below)

_____

_____

5. What type of Evaluation does the firm uses?

☐Formative evaluation ☐Participatory evaluation

☐Final evaluation ☐Real-time evaluation

☐Internal evaluation ☐External evaluation

☐Other (please specify below)

_____

_____

6. What kind of M&E tool/techniques or method does the firm uses?

   ☐Performance indicators

   ☐Log Frame approach

   ☐Formal survey

   ☐Rapid appraisal method

   ☐Other (please specify below)

   _____

   _____

7. Who conducts M&E at a particular project/site?

   ☐Project manager ☐Project coordinator

   ☐Site engineer ☐Office engineer

   ☐ Other (please specify below)

   _____

   _____

8. To whom is M&E information provided?

   ☐To all staffs

   ☐To the management

   ☐To stakeholders and owners of the project

   ☐Other (please specify below)

_____

_____

9. What tools and techniques does your organization use to collect data? (You can select more than one if it uses more than one technique)

a. Questionnaire
b. Interview
c. Observation
d. Case study
e. Site Visit Report
f. Focus group discussion
g. weekly reports
h. No standard tools/techniques used

Pleas indicate your level of agreement with the statement listed below.

No	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
10	The firm effectively promotes and communicates M&E functions and roles to all its staffs.					
11	The firm compares planned project activities schedule against actual schedule in order to determine project schedule performance					
12	Data is routinely collect and analyzed to measure project performance.					
13	The staffs conducting M&E are adequate.					
14	The firm provides M&E training to its staffs involved in M&E.					
15	The M&E training provided is effective and it improves the capacity of the staffs.					
16	M&E information is used to assist in decision-making and planning.					

Section III: Difficulties in M&E practice

The following table contains list of difficulties observed on the M&E practices of the firm, Pleas indicate your level of agreement with the statement.

No	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	There is an inadequate understanding of M&E at organizational level.					
2	There is lack of competent staff/skilled staff to carry out M&E p0ractices					
3	Lack of time and resources to conduct M&E.					
4	Inappropriate M&E implementation strategies are applied.					
5	Unavailability of data gathering and analyzing tools.					
6	M&E practices are not give priority by the management of the firm.					
7	Difficulty in communicating the results of M&E.					
8	Data Tampering during M&E Result Reporting period.					

2. What would you recommend in order to overcome those difficulties in practicing M&E?

_____

_____

_____

Section IV: Significance of M&E practice

Pleas indicate your level of agreement with the statement listed below.

No	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The current M&E practice of the firm helps in improving project performance.					
2	The M&E practice helps in acquiring sufficient data to be used as a basis for project modification.					
3	M&E can be used to monitor the progress of a project.					
4	M&E helps to identify problems and provide solutions.					
5	M&E can be used to evaluate the achievement of project objectives.					
6	Information regarding the project can be communicated to the staffs and to the stakeholders/owners of the project through M&E.					
7	M&E helps in learning from experience and in adapting necessary changes.					

Appendix V- Interview Questions

This interview questions will be answered by purposively selected respondents

1. How is project performance observed in your organization? What comparisons are made to standards? What corrective actions are taken?
2. Are project monitoring and evaluation performed in your organization?
3. Who is responsible for project monitoring and evaluation?
4. Are the monitoring and evaluation practices of the firm effective? Why or why not
5. Does the M&E system provide a valuable project status report or not?
6. Do you think the M&E practices of the company is significant in the project management practices of the firm?