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THE PRACTICE OF MONITORING AND EVALUATION IN ETHIOPIAN ROAD PROJECTS: THE CASE OF FEDERAL ROAD PROJECTS

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THE PRACTICE OF MONITORING AND EVALUATION IN ETHIOPIAN ROAD PROJECTS: THE CASE OF FEDERAL ROAD PROJECTS

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DECLARATIONS

I Bezawit Girma registration number ID No SGS/0651/2012A, do hereby declare that this Thesis work is my original work and that it has not been submitted partially; or in full, by any other person for an award of degree in any other university/institution.

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CERTIFICATE

This is to certify that Bezawit Girma has carried out her research work on the topic The Practice of Monitoring and Evaluation in Ethiopian Road: The Case of Federal Road Projects in partial fulfillment of the requirements for the award of a Masters Degree in PROJECT MANAGEMENT.

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ACRONYMS

M&E	Monitoring & Evaluation
ERA	Ethiopian Roads Authority
RSDP	Road Sector Development Program
RRAs	Regional Roads Authorities
WRO	Woreda Road offices

ABSTRACT

Project monitoring and evaluation is generally one of the components for effective project management. It gives responsibilities, indicates stakeholders' transparency and promotes corporate training by recording lessons gained in the execution of projects and applying them in the succeeding project planning and delivery or sharing experiences with other implementing organizations. The Ethiopian Roads Authority's Monitoring and Evaluation practice is assessed in this study, as the majority of its projects experience significant time and cost overruns, as well as quality issues. The data was obtained using a questionnaire and a key informant interview from the three stakeholders, and various Authority records. The study design was descriptive, and the data type was both qualitative and quantitative. The target population consists of 150 people who take part in project planning, implementation, monitoring, and evaluation. Despite consultants and contractors' claims that the Authority's central M&E unit does not function as it should, the research revealed that the Authority does have one. In terms of M&E tools, ERA uses a particular guideline and manual, but it does not regularly use a specific M&E approach. The M&E results are primarily used to make decisions. However, there is a communication gap between key staff involved in the M&E process, as well as members of management and stakeholders, indicating that the M&E results are not being communicated effectively. Finally, the Authority's defined challenges include lack of training and skilled M&E unit, communication gap among stake holders, difficulty using M&E tools and methods, capability gaps, gaps in implementing effective M&E programs supported by ICT, and employee perceptions of M&E tasks and environments. As a result, in order to improve Ethiopian Roads Authority's M&E practice, this study recommends that the M&E unit be properly staffed and equipped with the appropriate knowledge and skill. Furthermore, the Authority's decentralized M&E roles will be harmonized centrally within the M&E work unit. Mechanisms for data triangulation, approval, and validation should be structured to ensure data consistency. Furthermore, a clearly specified M&E approach and an appropriate M&E outcome communication plan should be implemented to optimize the efforts made and improve the efficiency of the M&E framework.

Keywords: M&E, Federal Roads Projects, Challenges, Project Success

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Monitoring and evaluation is the technique of obtaining and reviewing data over time to see if progress is being made toward the goals and objectives set out. It's an essential part of the project cycle and good management (Stockbridge & Smith, 2011). This is due to the fact that effective M&E practices have a huge impact on project implementation and delivery (Kissi et., al 2019).

Monitoring and evaluation are essential to the project's progress, and it helps to promote strategic decision-making and ensure effective project execution by gathering and evaluating project data in a structured and routine process. Project monitoring and evaluation refers to the commitment of project monitoring and evaluation teams (stakeholders) to achieve project goals, as well as problems including project delays, cost overruns, non-conformity, and environmental concerns (Otieno, 2000).

Road sector development, management, and maintenance are executed by the Ethiopian Roads Authority (ERA), Regional Roads Authorities (RRAs), Municipal Road Authorities (MRAs) and the Woreda Road Offices (WROs). The Ethiopian Roads Authority (ERA) is a federal agency in charge of the country's overall network planning, federal road implementation, coordination, and development of road sector guidelines and regulations (ERA, 2015).

Monitoring and evaluation is one of the factors contributing to the success of a project, a key aspect of a project management practice and also identified in several studies. Among other factors, project success appeared to be improved by monitoring and evaluating the progress of a project on a regular basis. Monitoring, evaluation and control are relevant for project scope management, time, cost, quality, human resources, communication and risk management (Kamau & Mohamed, 2015).

Many third-world countries are working on a number of projects to improve their infrastructure, which increases the standard of living for their residents. A large amount of money is invested in this operation, so it's crucial to get the best value for

the money. Monitoring and evaluation are two things that will help to ensure these. Unfortunately, many project owners and administrators are unaware of the value and effectiveness of these two aspects (Otieno, 2000).

Therefore, this research assess the practice of monitoring and evaluation system of the Ethiopian federal road project since it has a contribution for the achievement of the project objectives and this paper set out the roles of both monitoring and evaluation in successful implementation and delivery of projects and how these can be applied.

1.2. Statement of the Problem

While enormous resources are given to execute projects and despite the fact that these projects play a major role in promoting sustainable development in the community, there are constraints to monitoring and evaluation, and thus the performance of the monitoring and evaluation system is not carried out satisfactorily and intervention is necessary. While very significant for improving results, monitoring and assessment are often very complex, multidisciplinary and skill-intensive processes. There is also a need to develop guidelines for the implementation of minimum monitoring and evaluation criteria for projects that can be used to track progress and effectiveness. The establishment of a result based M&E system is a prerequisite for increasing pressure to enhance results, which is also one of the criteria for stakeholders to verify the productive use of the client funds, impact and benefits brought by the projects (Jha et al., 2010).

The success of projects is vital to the growth and sustainability of a company. Most project managers recognize that project monitoring and evaluation are essential to achieving project goals and success. By providing corrective measures for deviations from the planned standard, the project monitoring and evaluation exercise adds value to the overall efficiency of project planning, management, and execution. Project managers must conduct more thorough monitoring and evaluation of their programs, as well as establish processes and guidelines for assessing effects (Kahilu, 2010).

For planning, decision-making, and economic policy management, M&E has been a key performance management method. According to McMillan and Chavis (2001), most governments around the world are beginning to implement M&E into their economic governance structures.

The new dynamics of governance, globalization, aid lending, and citizen expectations necessitate a consultative, cooperative, and consensus-building approach, which means that stakeholders' voices and perspectives should be actively sought (Kusek & Rist, 2004).

In the context of Ethiopia, road is the most important infrastructure that provides access to rural and urban areas in the country. Road plays crucial role to reduce transportation cost and support economic growth in the country (ERA,2019).

The Authority currently manages hundreds of projects in the fields of design, construction, maintenance, supervision and technical assistance. In order to ensure the effective execution of programs, the Authority implements a variety of surveillance and assessment procedures at various levels. Some of the M&E practices that are implemented within the Authority are as follows:

- Annual, bi-annual, quarterly and Monthly performance reports;
- Site visit reports;
- RSDP and SDG Performance reports
- Project mid-term reviews
- Project (implementation) completion missions and reports
- Project/corridor/program-based Impact Evaluation Studies

Despite all these M&E activities, several of the authority's projects encounter multiple challenges including time and cost overruns and also quality problems (ERA, 2013).

M&E systems face problems that lead to their inadequacy and therefore do not work sufficiently, which require intervention. This research looks in to the existing M&E systems with in Ethiopia Road Authority, the contractors and consultants who take part in the execution of federal road projects, in regard to the assessment of practice of Monitoring and Evaluation system.

1.3.Research Questions

The research is going to be guided by the following key research questions.

- What are the existing monitoring and evaluation practice of Ethiopian Road Authority?
- What is the current practice and the standard bench marks?

- What are the main challenges in the implementation of monitoring and evaluating federal road construction projects?

1.4. Objective of the Study

1.4.1. General Objective

The general objective of the study is to assess the existing monitoring and evaluation practice in federal road projects.

1.4.2. Specific Objective

This study attempts the following specific objectives so as to achieve the above overall objective.

- Examine the existing monitoring and evaluation practice of Ethiopian Road Authority.
- To analyze the standard bench mark and the current practice of monitoring and evaluation.
- To assess the main challenges in the implementation of monitoring and evaluating federal road construction projects.

1.5. Significance of the Study

This research is done to understand the level and strength of monitoring and evaluation practices in Ethiopian federal road projects. Hence, it increases awareness about monitoring and evaluation process, practice and role in road projects. It also seeks to identify the underling challenges faced during execution of M&E. Based on the findings; this study will provide suggestions on areas that require improvement on the M&E practice. As result this study will positively contribute for betterment of road project management in general and the M&E practice in particular. This in turn will increases the likelihood of project success and improves performance of federal road sector in contributing to the overall economic development. This study will contribute to the body of knowledge. This is because it can be used as a reference material by researchers. The study will also identify areas related to M&E field that will require more research, hence a basis of further research.

1.6. Scope of the Study

The research evaluate federal road project monitoring and evaluation practices by combining the monitoring and evaluation practices of clients, contractors and consultants engaged in federal road projects. This study will address road projects managed by the federal government that concentrate on issues, overall M&E practices.

The study does not consider road projects by regional governments and subsequent administrative hierarchies. That is the M&E practices done by other government organs like Ministry of Finance and Economic Cooperation (MoFEC) and National Plan Commission (NPC) and also donor organizations on federal road projects is not included in this study.

1.7.Limitation of the Study

The most challenging aspect of this study was gathering data from respondents, which took a long time because the respondents were preoccupied with filling out the questionnaires. Due to a time constraint, all of the respondents were not able to participate in the questioner, and it took time for the respondents to assess the data they were given. COVID 19 was also another challenge especially to collect information from interviewees.

Despite the above limitations, the findings of this study will shed a light on potential areas of improvement in the monitoring and evaluation practice and its contribution to the success of the project in Ethiopian road projects.

1.8. Ethical Consideration

The researcher first obtain data collection authorization from SMU and present it to Ethiopian Road Authority and other concerned bodies (respondents) that are part of this research. The researcher also gets the full consent from the participants prior to the study by assuring the confidentiality of their information; they are not asked to include their names or any other form of identification on the questionnaires. Any form of communication in relation to the research was done with honesty and transparency starting from preliminary visit to the office to verbally explain the

purpose and importance of the study and predict some challenges that come with data collection.

1.9. Organization of the Study

This research is organized in to five chapters. The first chapter presents the introduction where the back ground of the study, statement of the problem, research questions, research objectives both general and specific, significance of the study, scope, limitation of the study and ethical consideration are clearly described. The second chapter deals with review of related literature on monitoring and evaluation concerns. In this chapter, previously conducted studies are reviewed in order to explore basic concepts and main practical activities on monitoring and evaluation and related concerns both at global and local level. The third chapter presents the research design and methodology that will be administered in the research where the intended research approach, design, population, sampling and data source, analysis methods validity and reliability are stated. The fourth chapter deals with the analysis of the data collected are presented. The final Chapter five makes conclusions from the analysis and gives recommendation.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Theorethial Literature Review

2.1.1. Project

A project, according to the Project Management Institute, is a temporary venture undertaken to produce a specific product, service, or outcome. A project's main aim, like most corporate activities, is to fulfill a customer's need. A project's characteristics help distinguish it from the organization's other endeavors beyond this basic similarity. The following are the main characteristics of a project:

- An established objective.
- An outlined life span with a beginning and an end.
- Several agencies and experts are generally involved.
- Doing an operation that has never been done before.
- Specific time, cost, and performance requirements.

First, projects have a defined objective whether it is constructing a 12-story apartment complex by January 1 or releasing version 2.0 of specific software package as quickly as possible. Due to the lack of defined objective in daily organizational life workers usually perform repetitive operations every day.

Secondly, since there is a predetermined objective, projects have a defined completion period, which is contradictory to conventional jobs' ongoing duties and responsibilities. In certain situations, because workers don't want to remain in one position, they switch from one project to another.

Third, tasks usually involve the collective efforts of a number of experts, unlike much organizational work that is segmented as per functional qualification. Instead of operating in separate offices under separate supervisors, project members work closely together under the supervision of a project manager to finish a project, whether they are engineers, financial analysts, marketing experts, or quality management professionals.

The fourth attribute of a project is that it is not routine and has certain elements that are unique. This is not a matter of either/or but a matter of degree. Obviously, it takes

solving previously unanswered problems and breakthrough technologies to achieve something that has never been achieved before, such as creating a hybrid (electric/gas) vehicle or landing two mechanical rovers on Mars. On the other hand, even basic construction projects involving established sets of routines and processes require a certain degree of customization that makes them different (Larson & Gray, 2011).

Finally, projects are bound by clear time, expense, and performance criteria. Projects are assessed according to achievement, expense, and time consumed. Such three restrictions place a greater level of transparency than is usually found in most occupations. These three also illustrate one of project management's primary roles, which manages the trade-offs between time, expense, and performance while essentially satisfying the client (Larson & Gray, 2011).

A project is usually constrained in the modern corporate environment by three components, which can be expressed by the principle of triple constraints or the Iron Triangle. There are Scope, Time and Cost. A project can be effective by managing scope, time, and budget while achieving a company's strategic objectives (PMI, 2013).

2.1.2. The Project Life Cycle and the Project Cycle Management

A project's life cycle is the sequence of stages that a project goes through from start to finish. The names and numbers of the phases are determined by the management and control needs of the company or organizations involved in the project, as well as the nature of the project and its implementation area. Functional or partial goals, intermediate outcomes or deliverables, particular achievements within the overall scope of work, or financial availability may all be used to break down the phases. Phases normally have a beginning and an end, as well as a control point. A methodology can be used to document a life cycle. The specific aspects of the organization, industry, or technology used may define or shape the project life cycle. Although every project has a clear beginning and end, the exact deliverables and activities that occur in between can differ depending on the project. Regardless of the particular work involved, the life cycle provides the fundamental framework for project management (PMI, 2013).

PMI, (2017) states that many of the monitoring and control processes are ongoing from the start of the project, until it is closed out. The Monitoring and Controlling Process

Group monitors and controls the work being done within each knowledge area, process group, life cycle phase, and the project as a whole. It also calls for continuous monitoring and evaluation during the project lifecycle's four phases. Each stage of the project life cycle generally requires a different level of management effort. Similarly, each stage of the project life cycle involves a particular degree of monitoring and evaluation effort.

The significance of life cycles is that they illustrate the logic that regulates a project. They also assist us in developing our project implementation plans. They assist us in making decisions such as when to allocate resources to the project, how to measure its performance, and so on. Consider the simplified model of the project life cycle shown in Figure 1, which divides the life cycle into four distinct phases: conceptualization, planning, execution, and termination (Pinto, 2016).

- Conceptualization (Defining)- refers to the formation of a project's initial objective and technical specifications. The scope of the work is defined, the resources needed are identified (people, money, physical plant) and significant organizational contributors or stakeholders are signed on.

- Planning- is a stage were all comprehensive specifications, schematics, schedules, and other plans are formulated. Individual project pieces, known as work packages, are broken down, specific activities are generated, and the completion process is clearly identified.

- Execution-the actual project work is performed or carried out, the system designed or the product produced and manufactured. It is during the implementation stage where the majority of project team work is carried out. As Figure 1 shows, project costs (in man hours) ramp up rapidly during this stage.

- Termination (Closing) is when the finished project is passed to the client, reassigned its resources, and officially closed out of the project. The project reduces in scale as unique sub activities are completed and costs decrease

rapidly (Pinto, 2016).

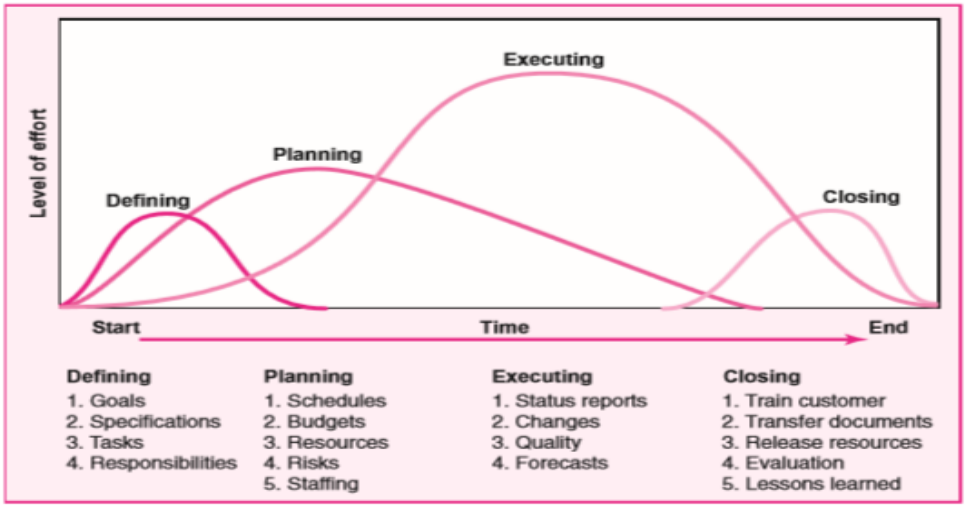

Figure 2.1 Project Life Cycle (Larson & Gray, 2011, p.7)

2.1.3. Project Management

The application of knowledge, expertise, methods, and strategies to project activities in order to accomplish project specifications is known as project management. The project management processes of initiating, planning, implementing, tracking and managing, and closing are used to achieve the overall project management process (PMI, 2012).

According to Lewis (2011) tools, people, and systems are all part of project management. Work breakdown structures, PERT scheduling, earned value analysis, risk analysis, and scheduling software are among the resources available (to name a few). Many companies that want to incorporate project management put great emphasis on tools. The use of software is an essential but not sufficient condition for project management performance. The procedures or methods are often more critical, because if you don't use the right management processes, the tools can only help you meticulously track your failures.

As a concept, Project Cycle Management is not that different from project management except it emphasizes the management of a project effectively and efficiently throughout its phases.

2.1.4. Monitoring and Evaluation

Monitoring and evaluation (M&E) has often been viewed as a separate function and planning responsibility. However, it is incredibly difficult to track and assess a project that has been poorly designed. M&E personnel and experts often find themselves needing to return to basic planning concepts before being able to assist with M&E (Woodhill, 2000).

Monitoring is the practice of observing and evaluating a project's progress when it is in progress. Monitoring a project's activities helps a manager to define and evaluate:

- the strengths and weaknesses of the system
- problems that had not anticipated
- and implement solutions to those problems as quickly as possible.

Monitoring will most definitely be conducted as part of the project team's daily and monthly activities. A monitoring review will be undertaken every two to three months to promote communication between the different partners, and the outcomes will be conveyed to stakeholders via reports. Monitoring may also be described as monitoring the degree to which planned activities (what should happen) vary from when the plan is executed (what actually happened), which will assist us in deciding what should occur (Mani, 2007).

In the other hand, evaluation is usually performed at the completion of a project cycle. It is a tool for project stakeholders to evaluate the project's success: Was the project able to achieve its objectives? What were the results? What factors supported or hindered this process? The information for the evaluation comes from the monitoring process, stakeholder focus groups, individual interviews and informal discussions with stakeholders and those impacted, and commentators who specialize in the areas involved. Putting this information together will assist in deciding if the project is meeting its objectives. The evaluation compares the trend of the desired outcomes with the actual results. Depending on the size and nature of the project this could be for the entire project or for an element component. Ongoing evaluation is also an essential element of project management. The purposes of evaluation are to:

- Determine the scope of achievement of certain project goals (this helps fulfill the accountability requirement)
- provide an opportunity to step back, think about the conduct of specific projects and why they are implemented (this fulfils the requirement to judge the state of progress)
- help a project progress by providing the necessary changes indicated in an evaluation with a clear and concrete direction, to improve project delivery
- significantly increase what you can gain from project implementation experience
- to make all stakeholders, team members and those involved, plus anyone with relevance to such a project, be aware of the information collected during the evaluation process and at the end of the project
- identify the costs and benefits to the beneficiaries and those affected
- determine whether the project generated adequate returns on investment with key stakeholders, particularly funding entities and governments
- provide the project team with feedback on the success of the used strategies, the unforeseen project factors and the effectiveness of corrective action adopted during the implementation of the project
- provide guidance on how to plan future activities and assist other groups in the same field or those wishing to improve the designs of their projects by spreading and making available evaluation results to the public.

Issues to Consider in M&E

At the design stage of project development, M&E system needs to be developed, because it can cause irretrievable damage to the system. For this reason, full attention should be given to stakeholder priorities so that it can be easily discovered what the project is entirely like, and stakeholders are involved in the monitoring and evaluation process.

Another disaster is a lack of logic or other design flaws like unrealistic project objectives for monitoring and evaluation, which will generate meaningless performance indicators. The development process of the M&E system should be used to sharpen and clarify the design itself, which means that if the design is too rigid, the monitoring and evaluation system should be clearly established. The project manager must determine how much flexibility the plans can be given and incorporate that into the monitoring and evaluation rationale (Mani, 2007).

2.1.5. Monitoring and Evaluation in Project Management

PMI, (2017) states that "the process of monitoring and control the project's work and progress and performance is the process of monitoring, reviewing and regulating the project's progress; identifies any areas where the change is required; and initiates the changes." It also explained that monitoring includes data collected on project outcomes, performance indicators generated, and information about performance published and disseminated. The monitoring process compares current performance to expected performance, analyzes variances, analyzes procedural improvement patterns, evaluates possible options, and recommends, if required, effective corrective action.

2.1.6. Role of Monitoring and Evaluation for Project Success

Monitoring and evaluation are essential tools for defining, recording, and tracking successful projects and approaches. This is especially more relevant and essential in resource developing countries, where difficult decisions need to be made with respect to resource allocation priorities.

The aim of monitoring and evaluation is to systematically track implementation and outputs of projects. The basis for amendments and measures and the assessment of the consistency of the work carried out is monitoring and evaluation. It is possible to use monitoring and evaluation to show whether or not the project has achieved the desired results. It is essential in helping managers, planners, implementers, policy makers and funding agencies acquire the information and generate informed decisions about project implementation (UN Women, 2010).

For different projects, monitoring and evaluating projects can be of great importance. The main advantage of M&E is that project output is assessed and evaluated at frequent basis, convenient activities, or when conditions of exception occur to define and correct variances from the project management plan (PMI, 2017).

The data that we obtain through M&E offers a better foundation for decision-making for project managers. We can figure out via M&E if the project is running as originally designed and notify us about the strengths and drawbacks of the implementation of the project. M&E helps us to recognize unforeseen and unintended project outcomes and results in order to identify the internal and external factors affecting the project's success. M&E documents and discusses why project activities

are successful or failing and how project planning and execution can be strengthened in the future (Ravallion, 2008 & Robbins, 1996).

Monitoring and evaluation makes it easier to identify the most efficient use of resources and provides the information needed to better manage strategic planning, design, and implementation (Khan, 2015).

2.2. Empirical Review

The study conducted by Callistus and Clinton, (2018) in "The role of monitoring and evaluation in construction project management" indicates M&E has been shown to be a basic management method for the execution of construction projects. Despite the various different challenges faced in M&E, including the limited financial resources for M&E, the poor institutional capacity of M&E departments or teams, and the poor relation between project planning and M&E, when M&E is carried out adequately, projects are completed with efficiency, expense, schedule, health and safety regulations and to the satisfaction of stakeholders.

Specific to the construction sector, Abebe ,(2015) conducted a study on ''Assessment of Construction Project Planning, Monitoring and Evaluation Practice'' at Defense Construction Enterprise. The practice of construction project planning, monitoring, and evaluation at the defense construction enterprise is investigated in this report. The study uses a descriptive approach, and one of the findings is that the enterprise project planning, monitoring, and evaluation team does not have a regular practice of reviewing each progress report and providing input, but the reports provide all of the required details for evaluation, as well as issues that need special attention from management. The study also showed that DCE does not have a well arranged and coordinated framework for project assessment. Based on its own findings at management meetings, the company reviews projects every quarter without having an expected site monitoring report and a progress report on procurement.

Kissi et al., (2019) published a report in Gana titled "Effects of monitoring and assessment activities on construction project performance criteria." Their findings indicate that, functionally, M&E serves as a switch to estimate the project's start date, progress over time, and the prerequisites and goals represented by the strategies for executing the project within the client. The study concluded that there is a clear

association between the various criteria for project performance and M&E practices, based on the research. Furthermore, the findings indicate that detailed review of M&E practices that have a major impact on project success criteria be required. To support this, Naidoo (2011) emphasized the importance of improving and encouraging M&E experts in project settings to assist in the strict implementation of M&E practices that contribute to project success. While successful project completion remains a critical goal for clients, there is a need to place a premium on the relationship that exists between these parameters in project execution processes in order to achieve such results. As a result, practicing M&E on a daily basis helps to ensure that tasks are completed on schedule and within budget. Since scope management deals directly with standard procedures, midterm and end assessments of M&E practices, it is to be anticipated that project scope management reported a good significant relationship with M&E. This is in line with the results of Papke-Shields et al., (2010), who found that project scope management is related to M&E activities and remains a performance criterion for project execution.

2.2.1. Major Challenges in Implementing Monitoring and Evaluation

Worldwide projects have encountered numerous challenges in their implementation. As a solution, project monitoring and evaluation are key components in improving project performance. These challenges are influenced primarily by the types of action and the minimum level of attention given to the practice. The effectiveness and success of every monitoring plan largely depends on the institution's capacity or person responsible for carrying out the work. Thus, weak institutional capacities challenge the implementation of project monitoring and assessment. Institutions' capacity building is important not only to immediately correct poor performance, but for participation, based on a broad analysis of objectives and results (Bhagavan & Virgin 2004).

Monitoring and evaluation are processes, so synergies with other activities in the project cycle, such as planning and budgeting, are needed. The ultimate objective of PM&E will be adversely affected by the weak link between planning and budgeting, on the one hand, and project monitoring and evaluation, on the other. Identifying any shortcomings, biases, and risks to the accuracy of the data and analysis is an essential factor in planning for data collection and analysis. The data management of the M&E

framework, which limits time and resource waste, must also be carefully planned (Chaplowe, 2008).

International Fund for Agricultural Development, (2002) Where necessary, budgeting for PM&E tasks and overall responsibilities must be listed and analyzed. It is necessary to determine the items associated with each task, including their cost, and there must be a staffing budget, including full-time staff, external consultants, capacity building/training, and other expenses for human resources. Furthermore, all capital expenditures, including facility charges, office equipment and supplies, travel and accommodation, computer hardware and software, and other expenses, should be included in the budget. Budgeting must also specify whether all activities, such as funding for an information management system, field transportation, equipment repair, translation, and printing and publication of M&E documents/tools, are included in the overall project budget. A weak correlation between these main steps in project monitoring and evaluation inevitably presents a challenge.

The type of measures used to assess the monitoring and evaluation of projects affect the successful implementation of the monitoring and evaluation of projects. Asiedu (2009) indicates that an issue with the different models of monitoring and assessment is that most of the experiments can only report outcomes after they had already occurred. According to (Beatham, Anumba, Thorpe, and Hedges (2004) a conference of leading members of the group of design and construction companies noted that the main issues with the Construction Best Practice Program (CBPP) key performance indicators (KPIs) were that they did not give the chance to enhance and that they were structured as KPIs after results.

According to the Ghana National Development Planning Commission (GNDPC) (2010). limited PM&E resources and budget allocations pose a challenge to PM&E. No-compliance with planning and PM&E guidelines, poor quality of data, data gaps and inconsistencies are also problems affecting PM&E.

The lack of an effective digital PM&E database system and the development of non-measurable PM&E goals, which can therefore not be used to evaluate project performance and milestones or to communicate project outcomes, are obstacles to the successful implementation of project monitoring and evaluation (Chaplowe, 2008). Finally, the establishment of project monitoring and evaluation goals that are not

compatible with the intended beneficiaries' needs and values, as well as project activities that do not achieve the desired results economically, are further threats to project monitoring and evaluation (GNDPC, 2010).

Other factors affecting the effectiveness of M&E system are discussed below.

- **Selection of Tools and Techniques**

  Depending on the operational context, implementing agency capability and donor criteria, projects require various M&E needs. Thus it is necessary to define approaches, procedures, and tools to meet the M&E needs of the project while planning an M&E plan (Chaplowe, 2008). Many tools and techniques are used to assist project managers in organizing and managing project operations, including: tools and techniques for project selection and risk management; tools and techniques for project initiation; tools and techniques for project management planning; tools and techniques for project management; and tracking and controlling tools and techniques for project management.

- **Management Role**

  It is the duty of project management to make decisions and to plan the project strategically. The M&E framework is also managed by tracking indicators, creating quarterly project reports and annual strategic reports (IFRC, 2011). The project manager ensures that the project staffs carry out their jobs effectively (Guijt, 2002). The project staff does the implementation role where they collect monitoring data and present it in weekly and quarterly reports (IFRC, 2011). For an M&E to function as a managing tool, the project management and M&E staff need to identify and act on the project improvements. Also for the M&E to be more effective it should be coordinated by a unit within the project management in order to facilitate management’s quick use of the M&E information (Guijt, 2002). It is the project management also that decides when project evaluation should be done (Welsh, 2005). If the project management fails to pay attention to the operations of the M&E, it diminishes its importance to the rest of the project staff. The M&E process hence provides useful information for decision-making to all levels of project management (Gaitano, 2011).

- **M&E Training and Technical Expertise**

  The UNDP (2009) handbook on planning, monitoring and evaluation for development results, stresses that human resources are necessary for successful monitoring and evaluation, noting that workers should have the requisite professional skills in the field to maintain high monitoring and evaluation. Implementing successful M&E standards for workers to obtain training as well as having analysis and project management expertise, therefore capacity building is essential (Nabris, 2002).

  In the capacity building of professionals, M&E practical training is important because it helps with the interaction and management of M&E systems. M&E preparation begins with an understanding of the M&E concept and ensures that the team recognizes the relations between the project theory of change and the framework of performance and the related indicators, training should therefore be practical focused to ensure the understanding (CPWF, 2012). Theory of change also known as the program theory/result chain/program logic model/ attribution logic (Perrin, 2012); it is a conceptual logic that connects research practices to the required improvements that a project aims to alter in the actors. Therefore, it is a blueprint of how a project is intended to work. The role of a change theory is to provide a road map of where the project is going during tests for monitoring and assessment and to refine the road map (CPWF, 2012 & Perrin, 2012).

  As M&E is a new professional sector, it faces a number of challenges in delivering results effectively. The demand for qualified professionals, capacity building for M&E systems and the harmonization of training courses, along with expert support, is therefore strong (Gorgens & Kusek, 2009). This is because qualified staff members are a major constraint in the selection of M&E systems (Koffi-Tessio, 2002).

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Introduction

This chapter outlines various approaches on how the research will be conducted. It focuses on the research design, data type and source, target population, sampling techniques, data collection methods and tools and data analysis that will be used in this study.

3.2. Research Design

According to Kombo and Delno (2009), a descriptive design should be used as a form of data collection through interviews and questionnaires in a research study that raises questions. The same Author further explained and quoted Orodho (2003) as defining descriptive survey as a means of gathering data by interviewing a sample of individuals or conducting questionnaires. This is definitely what the questions of my thesis require and is therefore direct my design choice, because the design is intended for primary data collection. Through desk analysis, the secondary data was obtained. That is, as attributed to the literature review, internet, magazines, journals, reports, and textbooks.

This research is conducted using descriptive research design followed by both quantitative and qualitative approach focusing on M&E practices over the years and currently on federal road projects.

3.3. Data Type and Source

3.3.1. Data Type

The study use both primary and secondary types of data. Using a mixture of qualitative and quantitative data, an assessment can be enhanced by ensuring that one form of data's shortcomings is balanced by the other’s strengths. In order to convey a more accurate and complementary research analysis, a combination of both qualitative and quantitative data was therefore be used.

3.3.2. Data Source

Primary Data Source

Closed-ended questionnaires and interviews were included in this analysis. Closed-ended questionnaires enable respondents to provide defined answers by selecting the appropriate one, while interview questions encourage respondents to provide subjective responses. The research used both approaches to provide a change of pace and to assist respondents in establishing relationships.

Primary data are those that are obtained new and for the first time, and therefore have a unique appeal. This is the initial data gathered directly from the respondents.

Questionnaires and interviews were used to collect primary data for this research. M&E practices in federal road construction projects, the influence of monitoring teams, the role of management in conducting M&E, challenges in implementing M&E practices, and recommendations to address challenges facing M&E practices in road construction projects are among the data collected through primary sources. The study requested that local management be introduced to M&E workers for an interview and questionnaire, and that they be given enough time to respond.

Secondary Data Source

Secondary data in this study were gathered from various sources, including M&E reports on related federal road construction projects, internet, reports, and papers in academic journals, past dissertations, reference books, published and unpublished reports. The research would also employ the written records consulted, like M&E studies.

3.4. Target Population and Sample

3.4.1. Target Population

Population is a total group or aggregation identifiable of elements (people) that are of interest to a researcher and important to the problem of knowledge specified. This involves identifying the population that the sample is drawn from. The population for this research was the concerned bodies of Ethiopian Road Authority as well as consultants and contractors who are involved throughout the implementation of federal road projects and have exposure to the implementation of project monitoring and evaluation. To get unbiased information for the questions asked in this research,

from the federal road projects among the three stakeholders 5 consulting offices and 5 contractor companies who work on federal road projects with ERA are included. Therefore, 150 staffs who are engaged in the execution of federal road projects and are responsible for monitoring and evaluation of the projects are the target population for this study.

3.4.2. Sampling Size Determination

To determine the appropriate sample size, this study uses Yamane's (1967) simplified formula, giving a significance level of about 95% by taking 5% of the population. By using formula it can be stated as:

$$n = \frac{N}{1 + N(e)^2}$$

where, n is the desired sample size, N is the population size and e is the level of precision

Therefore,

$$n = \frac{150}{1 + 150(0.05)^2}$$

$$n = \frac{150}{1.375}$$

$$n = 109.09$$

$$n = \sim 109$$

3.4.3. Sampling Selection Procedure

Gay (2012) defines random sampling as the method of selecting a sample in which all individuals in the given population have an equal independent chance of being chosen for the sample. To collect data via questionnaire, random sampling is used.

Purposive sampling is used to address specific purposes related to research questions; as a result, the researcher chooses cases that are information-rich in relation to certain questions, which are often chosen based on the expert judgment of researchers and informants. Purposive sampling procedures are small (usually 30 or fewer cases) and concentrate on the "depth" of knowledge that can be provided by individual cases (Tashakkori & Teddlie, 2009).

Using a purposive sampling method from each department, respondents to the interview are selected in a manner that ensures representation of the target population. That is, by completing the survey questionnaire, each department, team leaders and experts operating in M&E teams can respond.

3.5. Data Collection Methods and Tools

3.5.1. Questionnaire and Interview

For collecting data, the researcher used questionnaires and interview guides. The questionnaires have been used because they are simple to manage and produce a broad layout of required data simultaneously. Questionnaires guarantee the anonymity and allow the use of structured questions, especially those administered by themselves, since respondents have enough time to easily think and fill out the questionnaires, thus reducing errors.

In terms of data collection from key officials and supervisors, an interview is a data collection instrument. Interview questions were conducted for 6 selected professionals from the three stakeholders, 2 team leaders and Director of Planning and Program Management from the client (ERA), 1 project manager from contractor and 2 supervisors from consultant. The information gathered through interviews supplements the information gathered through questionnaires. Interviews are a reliable way of gathering information about respondents' reactions, perspectives, and impressions of specific circumstances (Khan, 2014).

The questionnaire consist items applying the likert scale with the responses from strongly agree, agree, disagree and strongly disagree on the rating scale of 1-4 and 1-5. Also in this study the type of questionnaires employed were close ended questionnaire. The interview is the most adaptable and efficient way of gathering knowledge from key respondents. In this study, main informant interviews were conducted with individuals who are in charge of the authority's general project/program planning and M&E operation.

3.6. Data Analysis Procedure

3.6.1. Descriptive Analysis

The study looked into the monitoring and evaluation practices in ERA. Data was gathered, examined, and double-checked for accuracy and clarity. The numerical data collected via questionnaires was coded, entered, and analyzed using the computer software program Statistical Package for Social Scientists (SPSS) version 22. The results were presented using frequency tables with varying percentages, mean, and standard deviation. The results of the interviews were subjected to a critical evaluation of each response, which was then analyzed using thematic analysis in conjunction with the study's main objectives and summarized in narrative extracts within the research.

3.7. Validity of Research Instrument

According to Bordens & Abott (2011), validity in the development of instrument items is enhanced by expert assessment. The researchers have used simple Terms to make them easy to comprehend. Specific and accurate questionnaires were also made possible with the guidance of the supervisor to prevent misunderstanding. In closed consultation with supervisor, the researcher prepared the testing instruments and the expert assessment helped improve validity of the material.

The research instruments were piloted in ERA, Consultant and Contractor offices. The same questionnaire was administered one week prior the current study to 18 respondents; this allowed the researcher to check for unclear issues and ambiguities.

3.8. Reliability of Research Instrument

The degree to which a research instrument produces reliable results or data after repeated trials is referred to as its reliability. Reliability refers to measurement consistency; the more accurate an instrument is, the more consistent the measure. A pilot study was conducted by randomly administering questionnaires to selected respondents in ERA, consultant office and contractor office, a field with similar characteristics to the case under study. It was improved further by making required changes to the questionnaire based on the pilot analysis. Following that, cronbach's Alpha was used to perform a reliability analysis. The alpha coefficient has a value

ranging from 0 to 1 and was used to characterize the reliability of variables derived from dichotomous (two possible answers) and/or multi-point formatted questionnaires or scales. (i.e., rating scale: 1 = poor, 5 = excellent). The higher the rating, the more reliable the generated scale. Creswell (2012) implies that a reliable research instrument should have a composite Cronbach Alpha, α of at least 0.7 for all items under study. Thus, reliability coefficient, α, of 0.7 was considered acceptable.

The researcher conducted a pilot study to pre-test the validity and reliability of the data gathered using the questionnaire prior to the final assessment. The pilot study allowed the research instrument to be pre-tested. Table 4.2 provides the findings on the reliability of the research instrument.

Table 3.1 Cronbach's Alpha Reliability test

Variables	Cronbach's Alpha
Type of monitoring and evaluation applied in Ethiopian Federal Road Projects	.733
Project Monitoring and Evaluation Process	.742
Strength of Monitoring Team and its Influence to the Performance of M&E	.785
Challenges in Implementing M&E	.722

The questionnaire reliability was determined using Cronbach‟s Alpha which internal consistency measures by determining whether certain items measure the same structure. The results of the pilot study suggest that the data are reliable, since the reliability values surpass the 0.7 threshold specified (Mugenda & Mugenda, 2003).

CHAPTER FOUR

4. DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1. Response Rate

The study has been carried out with the sample respondents of 109 Ethiopian Road Authority (ERA), five contractors and five consultants in the federal road project staff for whom questionnaires have been administered. Of the 109 questionnaires, 97 were completed and six interviews were held, which accounts for 94.5% of the replies.

Table 4.1 Response Rate

Target No. of respondents	No. of questionnaires Returned	Response Rate (%)
109	103	94.5%

The questionnaire was directly conducted by the researcher and therefore, as seen in Table 4.1, it is strong in response (94.5%).

4.2. Demographic Information of Respondents

As we can see from Table 4.3, Among the 97 responses 42.3% of the responses were from the clients and the rest 26.8% of the responses were from contractor group and consultants 30.9% from each group. Only 2 or 2.1% of respondents have PHD, 33 or 34% respondents have 2nd degree (Masters Degree) and 62 or 63% respondents have 1st degree.

Table 4.2 Demographic Information of Respondents

	Description	Frequency	Percent
Type of organization	Client	41	42.3
	Contractor	26	26.8
	Consultant	30	30.9
Level of education	PHD	2	2.1
	MA/MSc	33	34.0
	BA/BSc	62	63.9
Involvement in M&E	Yes	94	96.9
	No	3	3.1

Work experience	Less than 5 years	30	30.9
	6-10 years	52	53.6
	11-15 years	10	10.3
	Above 16 years	5	5.2
Current position in the organization	Monitoring & Evaluation Officer	4	4.1
	Project manager	11	11.3
	Project Officer	18	18.6
	Field Officer	12	12.4
	Project Team Leader	3	3.1
	Construction Engineer	13	13.4
	Project Engineer	18	18.6
	Senior Engineer	11	11.3
	RE	6	6.2
	Claim Expert	1	1.0

The research sought to find out how the respondents were distributed with regard to their participation in M&E of road project. The researcher presented the details in Table 4.3, majority of the respondents, 96.9% (94) stated that they had worked in the area where they were exposed to performing monitoring and evaluation of the projects, while a minority, 3.1% had not conducted monitoring and evaluation of projects in the federal road projects. These results demonstrate that individuals who worked in federal road projects had broad expertise in project M&E. Among the respondents 30.9% or 30 respondents have less than 5 years experience, 53% or 52 respondents have 6 to 10 years of experience, 10.3% or 10 respondents have 11 to 15 years of experience, and 5.2% or 5 respondent have 16+ years of experience in road construction as shown in table 4.3.

4.3. Type of Monitoring and Evaluation Applied in ERA

4.3.1. Aspect of a project monitored in Ethiopian Federal Road Projects

Table 4.4 shows time, cost and quality are monitored, that 98% of respondents to this question ranked project quality as the most monitored aspect of a project in federal road projects 88% and 85% of respondents agree that cost and time are also well monitored respectively. Other than the three aspects social and environmental issues are also included. It is also stated in Appendices C

Table 4.3 Aspect of a project monitored in the federal road projects

Aspect of a project monitored in the federal road projects	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
Cost	40	97.6%	25	96.2%	21	70%	72	88%
Time	39	95.1%	26	100%	18	60%	71	85%
Quality	40	97.6%	25	96.2%	30	100%	75	98%
social and environmental issues	1	2.4%					1	1%

The costing of the project should be explicit and sufficient to monitor and evaluate activities. The monitoring and evaluation budget can be clearly defined in the total project costs in order to provide adequate respect to the monitoring and evaluation function in the management of the project (Gyorkos, 2003 and McCoy, 2005).

Pretorius et' al (2012) identified that project management organizations with mature time management practices deliver more successful projects than those with less mature time management practices. The total time of the project is determined from the beginning of the project to the practical completion of the project as the number of days/weeks. Project execution speed is the relative time (Chan, 2001). From the secondary data the researcher observed that the other factor that is monitored is environmental issues.

4.3.2. M&E Practiced in Ethiopian Federal Road Projects

From the data collected through interview, all three interviewees from ERA agree that strict monitoring and evaluation of the project starting from data collection should take place only after actual site data are interpreted on Excel as well as ERA Ms in-house software, compared with the site's regular performance in terms of physical work and financial status. Variance can thus be easily reached, and this leads to an economic operation and to a portion where equipment, manpower or material utilization failures. The M&E team is headed by planning and program management of the authority which is responsible to Planning and ICT Deputy Director General, based on the information obtained from Key Informant, Director of Planning and Program Management. The team consists of approximately ten economists, including the team leader. The M&E team is not, however, the only one responsible for M&E in ERA. This team is responsible for central compiling and providing an organizational

image of the M&E performance. Otherwise, day-to-day monitoring and monitoring of the work units is carried out mostly by the project management bodies.

On the other hand consultants say while Monitoring and Evaluation is the main concern for ERA as a client so it has a great role on the projects of federal road. They don't think it is perceived to the fullest which is why there are always claims on delays and cost overruns in projects. Contractors interviewees' point of view is also the same, the project manager adds that the perception of the federal projects is not based on the performance evaluation method instead it relays on the functionality of the functional department which has been managed by the authority. (It lies under the same functional department and not following the project characteristics). In other words, project goals are set under the contract, as explained by the interviewee. The contract clearly shows the start and end time of the project, thus also sets out continuous objectives in the work program. However, ERA's annual objectives are defined by Top Management, and is dependent on the budget available for the year which can contradict the contract and complicate and difficult to monitor and evaluate. When it comes to specialized unit for M&E both stockholders agree that there is a counterpart on the ERA controls the consultant and contractors performance on the project frequently.

Table 4.4 M&E practiced in the federal road projects

M&E practiced in the federal road projects	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
Continuous (Process) monitoring	39	95.12	25	96.15	24	80	29	90.43
Mid-term evaluation	31	75.61	17	65.38	15	50	21	63.66
Project completion (Output) evaluation	30	73.17	12	46.15	18	60	20	59.77
Outcomes and/or impact evaluation	23	56.10	10	38.46	12	40	15	44.85

The finding regarding the practice 90.43% of respondents claim that continuous monitoring is used while 63.66% agreed evaluation at the Mid-term and impact evaluations is common. Project completion and impact evaluation are implemented relatively less with the response of 59.77% and 44.85% respectively as stated in table 4.4.

4.3.3. Tools and Techniques Used Collect, Manage and Analyze Data for M&E Purposes

Table 4.5 Tools and Techniques used in ERA

Tools and Techniques used in ERA to collect, manage and analyze data for M&E purpose	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
Observation	41	100	25	96.15	30	100	32	98.72
Interview	14	34.15	9	34.62	9	30	11	32.92
Questionnaire	8	19.51	4	15.38	16	53.33	9	29.41
Case study	7	17.07	2	7.69	11	36.67	7	20.48
Community discussion	27	65.85	13	50.00	20	66.67	20	60.84
Focus group discussion	12	29.27	6	23.08	17	56.67	12	36.34
Document review	25	60.98	22	84.62	29	96.67	25	80.75
GPS, Google earth data	10	24.39	10	38.46	14	46.67	11	36.51
Video, Audio and mobile	15	36.59	12	46.15	16	53.33	14	45.36

The respondents were requested to choose the tools and techniques used to collect, manage and analyze data for M&E purposes. The result showed that observation followed by document review are the most commonly used data collection and management techniques during M&E of federal road projects with 98.72% and 80.75% respectively. On the other hand, as depicted in table 4.5 above, the use of case study and questionnaire in ERA are seldom used as tool and techniques for data collection, management and analysis during the process of M&E.

4.3.4. Project Monitoring and Evaluation Process

Table 4.6 Monitoring and evaluation process of the organization

	Client		Contractor		Consultant		Average	
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
There are guiding principles for the M&E team	2.45	0.66	2.45	0.95	3.43	1.03	2.78	0.88
Stakeholders are adequately involved at all levels in M&E activities	1.47	0.60	2.04	1	2.77	1.19	2.09	0.93
There is a strong culture of institutional learning and knowledge sharing	1.65	0.74	2.01	0.94	2.03	0.59	1.90	0.76
Lesson learned of M&E are properly incorporated in M&E activities	1.55	0.66	2.29	0.91	2.81	1.42	2.22	1.00
There is a Culture of documentation and information sharing	2	0.77	1.91	0.96	2.92	1.12	2.28	0.95

Most respondents (2.78) agree that there are guiding principles for the M&E team, they also believe there a culture of documentation and information sharing (2.28) agrees that the lesson learned of M&E are properly incorporated in M&E activities with a mean of (2.22). Stakeholders are adequately involved at all levels in M&E activities was given (2.09), there is a strong culture of institutional learning and knowledge sharing is less (1.90).

4.3.5. Software the Authority(ERA) Apply for M&E

According to the respondents, Excel sheet and Microsoft project are majorly used 72.46% and 61.26% respectively as indicated in table 4.8; the other software is ERA Ms which is used only by ERA. In terms of software application, the findings of the survey point to an optimistic outlook for automation, but they also point to the need for a centralized automation system that will simplify the M&E system and communication.

Table 4.7 Software ERA apply for M&E

Software ERA apply for M&E	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
Microsoft project	23	56.10	15	57.69	21	70.00	20	61.26
Primavera	1	2.44	3	11.54	2	6.67	2	6.88
Excel sheet	25	60.98	19	73.08	25	83.33	23	72.46
Others	3	7.32					1	2.44

4.3.6. Tools and Methods Used in Monitoring and Evaluation Systems

Table 4.8 Tools and methods used in M&E system in federal road projects

Tools and methods used in M&E system in federal road projects	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
Performance indicators	31	75.61	23	88.46	19	63.33	24	75.80
Logical Framework	7	17.07	6	23.08	8	26.67	7	22.27
Policy and Manual	26	63.41	15	57.69	14	46.67	18	55.92

From the findings, 75.8% confirmed that Performance indicators approaches were widely used in M&E systems, while 55.9% of respondents indicated to have used Policy and Manual. Only 22.27% respond the use of logical framework.

4.3.7. ERA Provide M&E Training for Monitoring and Evaluation Staff

Foresti, (2007) it means not objective training but a whole series of learning approaches. From secondments to research institutes and possibilities to work in or elsewhere to improve impact assessments, to time spent by project personnel on evaluation and similarly to time taken by evaluators on the ground. Evaluators are also arguing that this means not training. The assessment should also be independent and relevant.

Table 4.9 M&E training for Monitoring and Evaluation staff

Training for M&E staff	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
Yes	25	61.0%	15	60.0%	10	31.3%	17	50.8%
No	12	29.3%	4	16.0%	17	53.1%	11	32.8%
Yes, but not in regular basis	4	9.8%	7	24.0%	3	15.6%	5	16.5%

This study attempt to determine whether ERA provides M&E training to its employees, and the results shown in table 4.9 show that 50.8% of respondents reported that they received M&E training, while 32.8% stated that ERA did not provide them with any M&E training, and the remaining 16.5% stated that while the authority does provide training, it is not on a regular basis.

4.4. Influence of Management on M&E Systems

4.4.1. Management Influence in Monitoring and Evaluation Systems

Table 4.10 management influence in Monitoring and evaluation systems

Ways of management influence	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
M&E Designing-Change of objectives	30	73.1	21	80.8	26	86.7	26	80.2
M&E Modifications	31	75.6	22	84.6	27	90	27	83.4
Planning of M&E	36	87.8	22	84.6	29	96.7	29	89.7
Implementation M&E systems	36	87.8	26	100	30	100	31	95.9
Resource allocation	33	80.5	19	73.1	26	86.7	26	80.1

95.9% of respondents said that the management impact M&E in the implementing process was evident from the results in Table 4.10. 89.7% agreed management influenced M&E systems during the planning process, while 83.4% claimed Management influenced M&E through its modification. Those who thought that the management affected S&E processes in design changes in objectives and the allocation of resources obtained 80.2 and 80.1% respectively.

4.4.2. The Extent to Which Management Affects the Success of M&E Systems

Table 4.11 Influence of management for the success of M&E systems

Ways of management influence	Client		Contractor		Consultant		Average	
	N	Percent	N	Percent	N	Percent	N	Percent
Not at all	1	2.44	1	3.85			1	2.1
Some extent	5	12.2	11	42.31	8	26.66	8	27.1%
Large extent	26	63.41	16	61.54	13	43.33	18	56.1%
Very large extent	19	46.34	10	38.46	17	56.66	15	47.2%

The findings in table 4.11 are proof that management influence cannot be ignored when assessing M&E systems, with 56.1% of the respondents who endorsed the large extent while 47.2% of the respondents agreed to a very large extent to which management influenced M&E systems in the projects of ERA. A smaller number of people thought that management impact was minimal, 27.1% while 2.1% of respondents were confident that management didn't affect structures of M&E. These results are in accordance with the (UNDP, 2009) Manual for Planning, Monitoring and Evaluation, which confirms how the management of M&E systems in the development programs of developing countries (UNDP, 2009).

4.4.3. Strength of Monitoring Team and its Influence to the Performance of M&E

The third objective of this study was to assess the extent in which the strength of monitoring team influences the performance of monitoring and evaluation of the federal road projects. In determining this objective, respondents were asked to respond to several statements about the need for the current study to assess the degree to which the monitoring and evaluation strength of the team and its effect on the performance of Ethiopian Road Authority's monitoring and evaluation projects. The status of this variable was rated on a 4 point Likert scale ranging from; 4 Very high extent. 3 High extent. 2 Low extent. 1 Very low extent. These results are presented in Table 4.8.

Sign of strong governance is to support and strengthen an M&E team. Supporting and strengthening of the M&E team will also play an important role in ensuring that the M&E team offers value to the company (Naidoo, 2011). Usually, a motivated team

performs highly (Zaccaro et' al, 2002). The stronger a team is, the greater the organization's performance and added value. This also apply to project management monitoring and evaluation teams. Interestingly Pretorius et' al (2012) Note that there was no meaningful correlation in project management companies between the maturity of their quality management processes and the success of their projects. Nevertheless, in order to achieve project success, the researchers believe that managers should in effect strive to attain quality in all elements, including the quality monitoring team.

Table 4.12 Strength of Monitoring Team and its Influence to the Performance of M&E

	Client		Contractor		Consultant		Average	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Providing support and strengthening of M&E team is a sign of good governance	3.29	.559	3.58	.504	3.53	.507	3.47	.523
Providing support and strengthening of M&E team will also play a key role in insuring that M&E team adds value to the organizations operations	3.34	.53	3.5	.51	3.4	.498	3.41	.513
A motivated team usually achieves high performance	3.37	.581	3.38	.496	3.47	.571	3.41	.549
Managers should indeed aspire to achieve quality in all the aspects and processes including quality monitoring team so as to achieve project success.	3.32	.471	3.38	.697	3.17	.379	3.29	.516
Various aspects which are used in assessing the strength of monitoring team which is perceived to be one of the factors influencing project success. These aspects include: Financial availability, number of monitoring staff, monitoring staff skills, frequency of monitoring, stakeholders representation	3.46	.505	3.54	.508	3.7	.466	3.57	.493

Majority of the respondents (3.57) agreed to Very high extent that various aspects which are used in assessing the strength of monitoring team which is perceived to be

one of the factors influencing project success, also respondents agreed to Very high extent that Providing support and strengthening of M & E team is a sign of good governance that influence performance of monitoring and evaluation of federal road Projects, (3.47), Providing support and strengthening of M&E team will also play a key role in ensuring that the M & E team adds value to the federal road project performance and A motivated team usually achieves high performance both have the same mean score to a High extent with a mean of (3.41). Managers should indeed aspire to achieve quality in all the aspects and processes, including quality monitoring team, so as to achieve project success (3.29), Low extent.

4.4.4. Challenges in Implementing M&E

Since the M&E function is both interdisciplinary and interdisciplinary, plus the involvement of various parties in the process, successful M&E faces different challenges, as stated in the literature review. In the instance of ERA, respondents were asked lists of frequent challenges to evaluate their experiences on a likert basis. To rate on a five-point Likert scale where 5 - Strongly agree; 4 - Agree; 3 - Neutral; 2 - Disagree, 1 - Strongly Disagree. Table 4.13 depicts the result.

Table 4.13 Challenges during the implementation of M&E

	Client		Contractor		Consultant		Average	
	Mean	Std. D	Mean	Std. D	Mean	Std. D	Mean	Std. D
Knowledge and Experience gap of the available experts	4.20	.901	4.69	.549	4.33	.922	4.41	.791
The tools and Methods used	3.71	.680	4.08	.628	4.20	.407	4.00	.572
Insufficient support of Management at different levels	3.78	.475	4.15	.732	4.50	.509	4.14	.572
Limited awareness on the importance and implication of M&E	4.07	.565	4.65	.485	4.40	.814	4.37	.621
Delay in providing information (data) from different units	4.12	.510	4.46	.508	4.27	.521	4.28	.513
Lack of coordination and interface among work units	4.12	.748	4.27	.667	4.13	.571	4.17	.662
Low quality data from reporting units	4.05	.631	4.42	.578	4.30	.837	4.26	.682

Resource and/or logistic problem	3.73	.775	4.08	.744	3.93	.740	3.91	.753
Failure in selecting the correct performance indicator	3.66	.825	4.23	.992	4.13	.776	4.01	.864

The finding indicates that Knowledge and Experience gap of the available experts with mean score of 4.41 is the most frequently cited challenge of implementing M&E in ERA. This is followed by other challenges namely Limited awareness on the importance and implication of M&E and Delay in providing information (data) from different units with mean score of 4.37 and 4.28 respectively. Low quality data from reporting units is another significant challenge with the mean score of 4.26. Lack of coordination and interface among work units have a 4.17 mean score. Insufficient support of management at different levels, failure in selecting the correct performance indicator, the tools and Methods used and resource and/or logistic problem are accorded as relatively less significant challenges that hamper proper implementation of M&E in ERA.

As per the interview there are different forms of challenges that the respondents mentioned, including data/information related, interface/coordination problem as well as capacity gaps. There are also gaps in implementing efficient M&E systems supported by ICT. Due to lack of skill, the data that has been collected from the project may not be complied very well for the decision making process and recoding system has its own problem. It is often recognized that there is a communication gap between people involved in M&E practice and stakeholders as well, which may effectively demonstrate the gap in use of this practice. The use of these M&E findings for organizational growth is often known as a void.

According to the interviewees there are some difficulties on archiving documents, consultants and contractors also complain that they can’t find information’s of others projects and are forced to take time doing some research work again and again for the information needed.

4.5. Purpose of M&E

M&E findings are used in case there is a need for decision making or action to be taken, since it clearly shows which areas have issues, such as the use of manpower, equipment, or materials, so that it can be used to make critical decisions. The interviewees believe that monitoring and evaluation is the backbone when it come to project success, it help to track the schedule and budget of the project as well as for the project to be completed with the specified quality and scope which is set under the project contract.

The study conducted by Abinet Ergando, (2018) on the Assessment of Monitoring and Evaluation Practice of Federal Road Projects: The Case of Ethiopian Road Authority shows that most important purposes of M&E are for project improvement which means to follow up the progress of the project and accountability.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary of Findings

The fact that these results are relevant to this study should be noted. In related studies in current literature, they may affirm or deny results. The results of this study must be generalized with caution, as various organizations can produce different results. The findings could therefore only represent the studied organization.

The results of the analysis are described as follows according to the objectives set.

5.2. Conclusion

- The vast majority of respondents said that document review, observation and group conversation are the three most important approaches used as regards the tools and techniques used to collect, manage and analyze data. M&E is still an employment-consuming company using more technologically enabled approaches such as GPS, ArcGIS, Google Earth, video, audio or mobile data.

- Even if ERA offers training on M&E problems, almost one third of the respondents don't think training is provided and some do not feel it is sufficient to conduct M&E actively.

- It is widely agreed that there is a communication barrier between people engaged in M&E activity and stakeholders, which can effectively illustrate the gap in this practice's application.

- The majority of challenges in proper M&E implementation arise from administrative ineffectiveness or inadequate implementation, inaccuracy in data collection, and a lack of M&E expertise. The argument here is that two of the top three obstacles to proper M&E implementation in the ERA can be traced back to a lack of necessary leadership and professional M&E expertise.

5.3. Recommendation

- The unit responsible for M&E should have the requisite expertise and skills in place to improve the operational capacities of the Authority's M&E framework. The M&E practice that is spread through various work units should be centrally aligned within the M&E unit.

- The M&E outcome communication approach must be implemented in order to ensure the use and effectiveness of the M&E framework. In addition, the building of a centralized, integrated IT system would optimize efforts and increase M&E systems performance.

- Sufficient, precise, reliable, correct and suitable data should be collected for M&E. Therefore, the data source does not come from a single source to ensure this data quality. And their mechanisms must be designed for various data sources, such as visits to the project's site, data sources from different project stakeholders and so on.

- Appropriate utilization of ERA Ms, because this software is very organized and a great way to evaluate the performance of contractors and consultants. And training should be given on a regular basis.

- Blindly planning the project without any details and main figures result in bankruptcy. Therefore, before moving into the details, managers should examine the practice of previous project information and further use the record data to assist them to carry out their project progress with minimal resources.

- Organized and archived information for the federal roads in all districts, Knowledge and Experience sharing between all experts (contractors, consultant and ERA), Proper communication between the site officers and the head office coordinators. M&E team training must be taken seriously and their performance should also be evaluated in a more regular, this is the recommendations of the interviewees from consultants.

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Appendix A **QUESTIONNAIRE**

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Department of Project Management

This questionnaire is in the context of my (Bezawit Girma) Master's thesis on the "The Practice of Monitoring and Evaluation in Ethiopian Road: The Case of Federal Road Projects" of ST. MARY'S UNIVERSITY. The information collected through this questionnaire will be treated confidentially and used for educational purposes only. Please take a moment to answer all the questions as precisely as possible.

Thank you in advance for your participation in this endeavor.

If you have any question concerning the questionnaire, please contact me

Bezawit Girma: +251932971848 or bezugirma17@gmail.com

Direction

- No need of writing your name;
- Put "X" mark in the appropriate space the choice you select whenever necessary on the multiple choice sections;
- If you can't make an appropriate choice among the alternatives given, write your reply; in the space provided for the option ―other, specify area;
- Consider M&E = Monitoring and Evaluation

SECTION 1. General Information

1. Type of organization

A. Client ( ) B. Contractor ( ) B. Consultant ( )

2. Level of education

A. PhD. ( ) B) MA/MSc ( ) C) BA/BSc ( ) D) Diploma ( )

3. Your current position in the organization

A. Monitoring & Evaluation Officer ( ) B. Project manager ( ) C. Project Officer ( ) D. Field Officer ( ) E. Project Team Leader ( )

F. Others Specify_____

4. Work Experience

A. Less than 5 years ( ) B. 6-10 years ( ) C. 11-15 years ( )

D. Above 15 year ( )

5. Have you been involved in conducting monitoring and evaluation of federal road projects?

A. Yes ( ) B. No ( )

SECTION 2. Type of monitoring and evaluation applied in Ethiopian Federal Road Projects

1. What aspect of a project is monitored in Ethiopian Federal Road Projects? (multiple responses allowed)

   A. Cost ( ) B. Time ( ) C. Quality ( ) E. Others, specify _____

2. Which one of the following is practiced in Ethiopian Federal Road Projects?

   A. Continuous (Process) monitoring ( ) B. Mid-term evaluation ( )

   C. Project completion (Output) evaluation ( ) D. Outcomes and/or impact evaluation ( )

   F. All ( )

3. What tools and techniques does ERA use to collect, manage and analyze data for M&E purposes? (multiple responses allowed)

   A. Observation ( ) E. Community discussion ( ) I) GPS, ArcGIS, Google earth data ( )

   B. Interview ( ) F. Focus group discussion ( ) J) Video, Audio and mobile ( )

   C. Questionnaire ( ) G. Document review ( )

   D. Case study ( ) H. No standard tools/techniques used ( )

SECTION 3. Project Monitoring and Evaluation Process

No		Strongly Agree	Agree	Disagree	Strongly Disagree
1	There are guiding principles for the M&E team				
2	Stakeholders are adequately involved at all levels in M&E activities				
3	lesson learned of M&E are properly incorporated in the activities				
4	There is a strong culture of institutional learning and knowledge sharing				
5	There is a Culture of documentation and information sharing				

4. Which software does the authority (ERA) apply for M&E?

   A. Microsoft project ( ) B. Primavera ( ) C. Excel sheet ( )

   D. Others, specify _____

5. What are some of the tools and methods used in Monitoring and evaluation systems at Ethiopian Federal Road Projects?

   A. Performance indicators ( )

   B. Logical Framework ( )

   C. Policy and Manual ( )

   D. Others, Specify _____

6. Do you think there is any difficulty experienced in using the M&E Tools and Methods used in Ethiopian Federal Road Projects?

   A. Yes ( ) B. No ( )

7. If yes, what do you think is contributing to the difficulty?

A. The tools and Methods used ( ) B. Influence of Management ( ) C. Lack of Training of employees on M&E systems ( ) D. Stakeholders Involvement ( ) D. Others, Specify_____

8. Does the organization (ERA) provide M&E training for Monitoring and Evaluation staff?

A. Yes ( ) B. No ( ) C. Yes, but not in regular bases ( )

SECTION 4. Influence of Management on M&E systems

1. In What ways does management influence Monitoring and evaluation systems in Ethiopian federal road projects?

A. M&E Designing-Change of objectives ( )
B. M&E Modifications ( )
C. Planning of M&E ( )
D. Implementation M&E systems ( )
E. Resource allocation ( )
F. All ( )

Using the 4-point scale tick accordingly to illustrate the extent to which management affects the success of M&E systems in Ethiopian federal road projects.

No	Management Influence Ways	Very Large Extent	Large Extent	Some Extent	Not at all
1	M&E designing				
2	M&E modifications				
3	Planning of M&E				
4	Implementation M&E systems				
5	Resource allocation				

SECTION 5. Strength of Monitoring Team and its Influence to the Performance of M&E

Using the 4-point scale tick accordingly to show the extent in which the strength of monitoring team influence success of M&E implementation in Ethiopian federal road projects.

No	Statement	Very high extent	High extent	Low extent	Very low extent
1	Providing support and strengthening of M & E team is a sign of good governance.				
2	Providing support and strengthening of M & E team will also play a key role in ensuring that the M & E team adds value to the organizations operations				
3	A motivated team usually achieves high performance				
4	Nevertheless it is the view of the researcher that managers should indeed aspire to achieve quality in all the aspects and processes, including quality monitoring team, so as to achieve project success				
5	Various aspects which are used in assessing the strength of monitoring team which is perceived to be one of the factors influencing project success. These aspects include: Financial availability, number of monitoring staff, monitoring staff skills, frequency of monitoring, stakeholders representation,				

SECTION 6. Challenges in Implementing M&E

Using the 5-point scale tick accordingly to illustrate the level of challenge in M&E implementation in Ethiopian federal road projects 1 strongly disagree, 2 disagree, 3 Neutral, 4 agree and 5 strongly agree.

No	Possible Challenges	Level of Challenge				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Knowledge and Experience gap of the available experts					
2	The tools and Methods used					
3	Insufficient support of Management at different levels					
4	Limited awareness on the importance and implication of M&E					
5	Delay in providing information (data) from different units					
6	Lack of coordination and interface among work units					
7	Low quality data from reporting units					
8	Resource and/or logistic problem					
9	Failure in selecting the correct performance indicator					

Appendix B **INTERVIEW QUESTIONS**

ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
Department of Project Management

1. How is M&E practice perceived in the Ethiopian Federal Road projects? Could you please describe it?
2. Is there a specialized M&E unit or person in the organization (ERA)?
3. Are M&E findings used in case there is a need for decision making or action to be taken?
4. What is the contribution of M&E for the success of federal road projects?
5. What are the challenges of designing M& E system at project planning stage?
6. Does the finding be conveyed to all stakeholders in meaningful, timely and appropriate ways?
7. Do the results show the failings as well as the achievements of the project?
8. Does the information emerging from M&E fed back into ongoing project design and future planning? In what way?
9. Are M&E findings well documented and archived as "lessons learnt" for future use in other implemented projects?
10. What recommendations would you give to improve on the performance of monitoring and evaluation systems in ERA?

Appendix C **REGULAR WORK PLAN**

ተ/ቁ	ግብናዋናዋና ተግባራት	ቁልፍየአፈጻጸምመለኪያ (KPI) አመላካች (Indicator)
1.0	**(የመደበኛሥራዎችእቅድ)**	
1.1	**ግብ 1፡የፕሮጀክትአፈፃፀም**	
1.1.1	ከኢ.መ.ባ.እቅድአንፃርየፕሮጀክቱአፈፃፀም	• ከእቅዱ**ከ90%** በላይካስመዘገበ .... **(አረንጓዴ)**ያገኛል • ከእቅዱ**ከ75% እስከ 90%**ውስጥካስመዘገበ .... **(ቢጫ)**ያገኛል • ከእቅዱ**ከ75%**በታችካስመዘገበ.... **(ቀይ)**ያገኛል
1.2	**ግብ 2፡የፕሮጀክቱበውሉበተጠቀሰውዋጋማለቁ (Cost Overrun)**	
1.2.1	የፕሮጀክቱበውሉበተጠቀሰ ውዋጋእየተሰራስለመሆኑ	• የፕሮጀክቱዋጋ**ምንም**ካልጨመረ.... **(አረንጓዴ)**ያገኛል • የፕሮጀክቱዋጋ**እስከ25%**ድረስብቻከጨመረ.... **(ቢጫ)**ያገኛል • የፕሮጀክቱዋጋ**ከ25 በላይ**ከጨመረ.... **(ቀይ)**ያገኛል
1.3	**ግብ 3፡የፕሮጀክቱበውሉበተጠቀሰውጊዜውስጥማለቁ (Time Overrun)**	
1.3.1	የፕሮጀክቱበውሉበተጠቀሰ ውጊዜውስጥማለቁ	• ከእቅዱ**ከ10%** ባልበለጠጊዜከዘገየ .... **(አረንጓዴ)**ያገኛል • ከእቅዱ**ከ10% እስከ 25%**ባልበለጠጊዜከዘገየ.... **(ቢጫ)**ያገኛል • ከእቅዱ**ከ25%**በላይከዘገየ.... **(ቀይ)**ያገኛል
1.4	**ግብ 4፡ጥራትንማስጠበቅ**	
1.4.1	ጥራትንማስጠበቅከ7.0 ነጥብ*	• **ከ6.3 ነጥብ (90%)**በላይአጠቃላይድምር .... **(አረንጓዴ) ያገኛል** • **ከ5.25 እስከ 6.3 ነጥብ (75% እስከ 90%)**አጠቃላይድምር.... **(ቢጫ)**ያገኛል • **ከ5.25 (75%)**በታችየመስክምርመራዎችየሚፈለገውንውጤትካሚሉ.... **(ቀይ)**ያገኛል
1.5	**ግብ 5፡የአካባቢማህበረሰባዊእናደህንነትትራፊክማኔጅመንትበተመለከተ**	
1.5.1	የአካባቢማህበረሰባዊእናደህንነትትራፊክማኔጅመንትበተመለከተከ9.0 ነጥብ*	• **ከ8.1 ነጥብ (90%)**በላይአጠቃላይድምር .... **(አረንጓዴ) ያገኛል** • **ከ6.75 እስከ 8.1 ነጥብ (75% እስከ 90%)**አጠቃላይድምር.... **(ቢጫ)** ያገኛል • **ከ6.75 (75%)**በታችየመስክምርመራዎችየሚፈለገውንውጤትካሚሉ.... **(ቀይ)**ያገኛል
1.6	**ግብ 6፡ከወሰንማስከበርጋርተያይዞ**	
1.6.1	ከወሰንማስከበርጋርተያይዞከ6.0 ነጥብ*	• **ከ5.4 ነጥብ (90%)**በላይአጠቃላይድምር .... **(አረንጓዴ) ያገኛል** • **ከ3.75 እስከ 5.4 ነጥብ (75% እስከ 90%)**አጠቃላይድምር.... **(ቢጫ)**ያገኛል • **ከ5.4 (75%)**በታችየመስክምርመራዎችየሚፈለገውንውጤትካሚሉ.... **(ቀይ)**ያገኛል