Addis Ababa University

College Of Business and Economics

School of Commerce

FACTORS AFFECTING PROJECT EXECUTION PERFORMANCE IN CONSTRUCTION PROJECTS: THE CASE OF MIDROC CONSTRUCTION ETHIOPIA PLC.

By

Hewan Tesfahunegn

A Final Project Submitted to Addis Ababa University, School of Commerce In Partial Fulfillment Of The Requirements Of The Degree Of Master Of Arts In Project Management (MAPM)

Advisor: Dr. Bahren Asrat

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Declaration

I hereby declare that the project work entitled "*Factors Affecting Project Execution Performance In Construction Projects: The Case Of Midroc Construction Ethiopia plc*.", has been carried out by me under the guidance and supervision of Dr Bahren (Ph.D.). The project is original and has not been submitted for the award of any degree or diploma to any university or institution.

Researcher's Name Date Signature

_____ _____ _____

Certificate

This is to certify that the project entities “Factors Affecting Project Execution Performance In Construction Projects: -The Case Of Midroc Construction Ethiopia PLC”, submitted to Addis Ababa University School of Commerce for the award of a degree in Master of Project Management and is a record project work carried out by Mrs. Hewan Tesfahunegn, under my guidance and supervision.

Therefore, I hereby declare that no part of this project has been submitted to any other university or institution for the award of any degree or diploma.

Advisor Name Date Signature

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Approval Page

FACTORS AFFECTING PROJECT EXECUTION PERFORMANCE IN CONSTRUCTION PROJECTS: -THE CASE OF MIDROC CONSTRUCTION ETHIOPIA PLC.

Hewan Tesfahunegn

Approved by the Board of Examiner

Research Advisor DateSignature

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Internal ExaminerDateSignature

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External Examiner Signature Date

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Contents

List of Acronyms and Abbreviations

MIC	Midroc Construction Ethiopia Private Limited Company
GERD	Great Ethiopian Renaissance Dam
UK	United Kingdom
AWPR	Aberdeen Western Peripheral Route
API	A Pioneer in The Industry
AAHDC	Addis Ababa City Housing Development Corporation's Housing
IF	Project Identification Factor
PF	Project Planning Factor
TRF	Technology and Resource Factor
EF	Economic Factor
PF	Political Factor

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Abstract

The main problem in the execution lifecycle of Midroc construction has been that completion times have taken longer than expected. The major objective of this study is to determine the factors affecting project execution of the project, and specifically analyze the identification life cycle factors, the planning life cycle factors and external factors effect on project execution success. The study used descriptive and explanatory research design and mixed research approach. Questionnaire and interview were used to collect primary and secondary data and inferential statics were employed to analyze the data. The R Square number of 0.863 which in this case means 86.3% of project execution success can be explained by, administrative factor, political factor, economic factor, monitoring & evaluation factor, identification factor, planning factor, technology &resource factors and the remaining 13.7% is explained by other factors or variables outside the model. The study's findings showed that seven out of seven aspects, including political, economic, monitoring and evaluation, identification, planning, technology, and administrative resource considerations, have a substantial impact on the effectiveness of project execution. According to the study, the best way to avoid delays and cost increases is to make pre-planning collaboration the focal point in order to address the necessary manpower, procedure, communication, equipment, and material before construction begins.

Keywords: Identification Life Cycle, Planning Life Cycle, External Factors, Project Execution Success Factors

CHAPTER ONE

1 INTRODUCTION

This chapter explains the overall concept and importance of the study. It outlines the background, the problem statement, the objectives, the scope, any limitations, and the thesis's organization.

1.1 BACKGROUND OFSTUDY

The act of supervising a group's tasks to attain all project goals within specified limitations is known as project management (Phillips, 2004).Ordinarily, details concerning these aspects are included in the project records created at the beginning of the development procedure. The three primary restrictions are cost, time, and scope. (Angelo, 2006)Another significant factor is how to distribute the necessary resources while still fulfilling predetermined objectives. Consequently, various separate stages must be finished to manage these elements. The project lifecycle consists of five phases, each of which comprises a set of interconnected procedures. These consist of planning, executing, monitoring and controlling, and closure.

After initiation and planning, project execution represents the project's third stage of lifecycle. This stage involves the implementation of the strategy that was created during the previous the project's stages lifecycle. The project's goal is to deliver the anticipated results. This stage of project administration is generally the lengthiest and most resource-intensive. The project execution group applies all the programs, procedures, and templates designed and planned in the prior phases. There are unavoidably unforeseen occurrences and situations that the project manager and project team must handle.(Development Cooperation Handbook, 2023)

According to(Chitram, 2011), a concept, idea, or method is transformed into physical structures and concrete entities throughout the project execution stage. For instance, tasks identified during the execution stage are undertaken in the most effective and efficient way possible given the limits of the project. Buildings are constructed, machinery and equipment are installed, and some form of the production process starts. Tasks outlined at the execution stage are then undertaken in the most effective and efficient way possible while keeping project restrictions in mind.

When a project is being carried out, project management tasks include determining the requirements, attending to the needs, concerns, and expectations of various stakeholders, planning, maintaining, and carrying out effective stakeholder communications, managing stakeholders to meet project requirements and produce project deliverables, and balancing the competing project constraints, such as scope, quality, schedule, budget, and resources.

The project has the highest chance of going off the tracks during this phase of the project cycle because both expense overruns and scheduling delays typically happen during this time. To be able to prevent cost overruns or schedule delays, adequate controls are needed. The tools offered to or created by the project's directors for early detection and prevention of these circumstances are essential to prevent delays and cost overruns.(Chitram, 2011)

As (Chitram, 2011) states both factors within and outside of the organization's control might affect the project's budget and schedule. Construction methodology, wage rates, working environment, safety culture, and labor productivity, staff turnover and hours of training are among the factors under the organization's control that can have a big impact on project budgets and schedules. the organization's acquisition rules underestimate during the budgeting process, a lack of control and proper steps to maintain effective control, and accounting systems and practices can all have an impact on cost overruns.

Environmental and seasonal factors like the icy winter cold, hot summer heat, and natural disasters like tornadoes, earthquakes, and hurricanes are some factors that are outside the control of an organization. Yet, smart planners were taken these factors into account when making plans based on facts and previous data. Governmental oversight, rules, and approvals may occasionally impede development and be regarded as beyond one's ability to control.(Chitram, 2011)

1.2 BACK GROUND OF THE ORGANIZATION

Sheikh Mohammed Al-Amoudi established Midroc Construction, a privately owned company, with the aim of promoting commerce and increasing the use of modern building services. Midroc Construction operates as a limited liability company and has been granted operational permission by the Department of Commerce and Industry, under license number 00013/91. Additionally, it is registered with the Department of Works and Town Planning, under registration number CON/1203. APIs, a trailblazer in the industry, was established in June/July of 1993 GC. As of June

30, 2020, the company's total assets amounted to roughly 614 million Birr, which is evident from its financial records. The majority (63%) of the company's assets are made up of advance payments and receivables, work-in-progress (10.4%), inventory (9.8%), and fixed assets (9%). Presently, the contractor is involved in 14 active and non-active projects located throughout Ethiopia.

Midroc construction has played a vital role in promoting the nation's progress by actively participating in the construction industry. The organization carries out significant assignments like tall and intricate multi-functional edifices, luxurious hotels, health facilities, stadiums, and minor construction works. Initially, Midroc construction was founded to concentrate on constructing roads, buildings, and civil works. Over the last 25 years, the corporation has effectively accomplished several large-scale projects in both the building and road sectors, most of which are enormous and complex. Some of the notable and advantageous structures completed by Midroc construction include the African Union Conference Center, Sheraton Addis, Oromia Conference Hall and Office Building Complex, Federal Police Headquarters Building, among others.

As per(SOLOMON, 2020) Midroc construction has identified time and cost overruns as a crucial and significant concern. Over the last decade, almost all projects have been impacted by delays and increased expenses. This research focuses on determining the factors that affect project execution in Midroc construction. Moreover, it provide recommendations by identifying the problematic areas to help the organization, beneficiaries, and stakeholders minimize the impact of any timeline or cost overruns.

1.3 STATEMENT OF THE PROBLEM

The success of a project is typically evaluated by ensuring that there are no cost, time, or quality deficiencies. In order to achieve this, organizations must complete projects within the allotted time and budget, while also meeting the necessary requirements and managing any potential project risks (A. Assaf & Al-Hejji, 2018)). To do so, the project management team must have access to current and accurate information (Siles, 2015). As per the research conducted by Peninnah & Samson (2021), obtaining such information results in high-quality outputs that are consistent with project planning practices, timely execution, reliable monitoring and control practices, motivated project managers and team members, more satisfied stakeholders, and better project completion.

Considering the survey's findings, the most critical elements that influence project execution include a shortage of materials leading to delays, improper identification of the project, poor planning,inadequate resources, inadequate project management abilities, growing material costs, a scarcity of highly knowledgeable and experienced personnel, and inferior machinery and raw materials(Abbasbhai & Patel, 2020). These issues can arise from inadequate planning, insufficient information gathering during the identification phase, and external factors like the economy, technology, and politics.

However, the global construction industry continues to face significant challenges in terms of meeting project deadlines and budgets. In the UK, for example, there have been numerous instances of cost overruns and delays, such as the Project to Extend the London Jubilee Line, which ended up being 80% over budget and opening almost two years later than planned in 1999. Another notable example is a year after it first opened, the Channel Tunnel behind schedule in 1994 and ultimately cost £9.5 billion, twice the the first budget. More recently, the AWPR project in Scotland opened a year late in February and ended up costing over £1.0 billion, a significant increase from original allocation of £745 million. Even modest initiatives like the Sheffield to Rotherham tram train experienced significant delays, opening three years later than planned in October 2018 and going over budget by 401%. (Bahra, 2019)

Despite efforts to improve the situation, project cost overruns and schedule delays continue to plague infrastructure projects in Sub-Saharan Africa, exacerbating the region's already poor infrastructure situation. For instance, a study of a transportation infrastructure project in Nigeria found that costs increased by an average of 14%, and the project was 188% behind schedule (Omoregie A, Radford D., 2016). Similarly, 75% of groundwater drilling initiatives in Ghana reportedly exceeded budget and took longer than anticipated (Frimpong Y. Oluwoye J. and Crawford L., 2003). (Flyvbjerg Bent, Bruzelius Nils, Rothengatter, Werner, 2007).

Every stage of a building project has construction delays, which are a typical issue in Ethiopian construction projects(Hareru & Neeraj Jha, 2016). Only 8.25% of projects in Ethiopia have been completed by the original deadline. The remaining 91.75 percent of projects are running 352% behind schedule(Tesfaye & Asteray, 2022). The ineffective and declining condition of Ethiopia's the construction sector, along with its performance issues, are adverse to the development of the sector, according to the ministry of urban development and construction industry

policy(*Construction Industry Policy Ministry of Urban Dvelopment and Construction*) For instance, the first two power-generation turbines for the Great Ethiopian Renaissance Dam (GERD) were anticipated to start operating after 44 months of construction, or in early 2015. The project was estimated to cost 4.7 billion dollars (60 billion birr). But, building is still ongoing, the two turbines are not yet operational, and it is anticipated that when it is done, the cost will rise to 9.4 billion dollars (120 billion birr). The Addis Abeba city Housing Development Corporation's housing projects reflect the same reality (AAHDC). According to (Teklemariam, 2018), over 700,000 people under the age of 20 and 140,000 people under the age of 40 enrolled for the housing program, totaling close to 1.1 million people, yet only over 175,000 homes have been distributed to locals after 12 years of housing building.

The execution stage of a project's life cycle when there is the greatest risk of the project deviating from the original plan because it is if there are both scheduling delays and expense overruns commonly occur. adequate controls must be in place to preventcost escalation or timetable delays. In order to avoid delays and expense overruns the project managers experienced tools for early detection and prevention of these scenarios are crucial. This problem is particularly acute in the MCE. If the project is not completed as anticipated, the client, the nation, and the construction contractor will all suffer, according to (Emmanuel Bentil1, Rev. Edward Nana-Addy, 2017). Some of the effects, based on the research, include inability to obtain project financing, high costs associated with doing so due to increased risk, increased investment risk, damage to contractors' and consultants' reputations, lower returns on investments, a decline in investment in the construction sector, non-sustainability of the sector, a slow rate of national growth, and an inability to provide clients with value.

Most of the literature focuses on identifying problems and studying how cost and time overruns affect the project .To prevent or lessen the impact, the research identified the determinant factors that affect project executions at Midroc construction Ethiopia PLC .

1.4 Research questions

The studywas led by the ensuing research inquiries, which are based on the problem statement mentioned above.

- How do project identification factors affect project execution of Midroc construction?

- How do project planning factors affect project execution of the company?
- How do external factors affect project execution in theperformance of company?

1.5 Research objective

1.5.1 General objective

The main goal of this study is to identify the factors that affect how the project is carried out.

1.5.2 Specific objectives

The key challenge in the execution lifecycle ofMidroc construction has been that completion times have taken longer than anticipated. The primary cause of the delay, its overall impact, and alternative solutions are therefore examined in this study. On the basis of the criteria considered, it also identifies the parties responsible for the delay. The four following specific objectives are the driving forces for this investigation.

- To identify the project identification life cycle factors that affect the project execution.
- To identify the project planning components from the project's life cycle execution.
- To identify the external factors that affect the project execution.

1.6 Significance of the study

The results of previous studies make it clearly evident that cost and time overruns have a negative impact on both the project and the associated construction companies. These overruns sometimes even cause companies to go bankrupt.(Aynur Kazaz,Serdar Ulubeyli ,Nihan Avcioglu Tuncbilekli, 2012) Thus, a thorough analysis of these overruns is required in order to identify the key overrun reasons at play.

The significance of the study for the Midroc construction are to maximize the quality, cost, and time in the executing project lifecycle by determine the factors affecting time and cost overruns and offers remedies. Also, it evaluates ways to reduce or avoid extra time and money spent on the construction of the projects.The result and findings can be used by project managers, and managers in various levels of the company in the project execution stage.

The study gives general outlooks for other researcher the causes of factors for cost and time overrun in the execution project cycle. Also, the established formulation principle is used for

similar construction companies. Generally, this study also be used by researchers and other interested groups who may have an interest in this area.

1.7 Scope of the study

The studyfocusesabout the elements that the project execution lifecycle of the project specifically the cost, time, scope and quality overrun of the projectby assessing the cause of cost and time overrun. This study also evaluated the effects of delay on building projects and identify mechanisms to reduce the delay.

The scope of the study is in the case ofMidroc construction projects. from the perspectives of the contractors to identify the most common and frequent occurring causes of time and expense overruns in construction projects for buildings.

The samples and data collected from Midroc construction will be used to conduct the study. Even though researching other construction businesses might enhance the accuracy of the results, there won't be enough time due to the project's scheduling and budgetary constraints.

1.8 Limitation of the study

The researcher encountered certain restrictions concerning the scope and content of the investigation, as well as temporal restrictions. Owing to temporal constraints, the investigation was restricted to solely three construction sites out of a total of 14 projects. Five were inactive sites for various reasons, and two projects were located in a remote area, making it impossible for the researcher to reach the site.

1.9 Organization of the study

The five chapters of the research are logically arranged, along with the references. The introduction to the first chapter discusses the overall concept and importance of the study. It outlines the background, the problem statement, the objectives, the scope, and limitation as well as the organization of the thesis. The second chapter includes a survey of the literature and quotations from several related studies in this field. The third chapter tries to provide a thorough explanation of the methodology used in this research study. Data presentation, information analysis, a summary of the results, and interpretation are all included in chapter four. The study's conclusions and recommendations are presented in chapter five.

1.10 Definition of key terms

- **Project;**A project is a brief endeavor began with the goal of delivering a specific good, service, or result. The fleeting character of a project means that it has a clear beginning and end. (PMBOK®, 2008)
- **Project Management**; is the process of putting knowledge, abilities, tools, and processes to use in project operations to fulfil project requirements. (PMBOK®, 2008)
- **Construction Project;**the systematic construction procedure, repairing, restoring, updating, or altering a structure or other built object, such as a tunnel or bridge, is known as a construction project.(Wikipedia, 2023)
- **Project Identification;**is a procedure for determining a need, problem, or opportunity during the project's beginning phase.(Wikipedia, 2023)
- **Project Plan**; is a formal, authorized document used to direct both project execution and project control, according to the(PMBOK®, 2008)
- **External Factors**;External influences are forces that the parties involved in the project cannot control. Political, economic, technological, and administrative aspects make up the five key external variables.
- **Project ExecutionSuccess**; is the phase of the project where all of the team's preparations are put into practise. The staff makes every effort to start initiatives off successfully.(Chitram Lutchman, 2011)

CHAPTER TWO

2 Review Of Related Literature

2.1 Introduction

A survey of related writings on the project execution lifecycle is covered in this chapter. A review of many books, scholars, journals, publications, and scientific articles is conducted. The terms relating to the topic are briefly addressed in this part, including project, project management, project life cycle, and project execution.

2.2 Theoretical review

2.2.1 Introduction To Project and Project Management

The concept of a project has been defined by (Wysocki, 2019) in both its general and business-focused definitions. This characterized a project is a collection of distinctive, intricate, and interconnected tasks with a single objective that a certain person has to finish deadline, inside of budget, and in accordance with stakeholder requirements. Furthermore, he described the business definition as a series of interrelated and constrained activities that, when executed successfully, result in the delivery of anticipated business value, which justifies the undertaking of the project.

The Project Management Book of Knowledge (PMBOK®, 2008) defines a project as a short-term goal. undertaking initiated with the goal of producing a unique good, service, or result. Projects' transient nature implies that they have a clearly defined beginning and end. According to this book, The management of projects is process of utilizing knowledge, abilities, instruments, and methods for controlling project operations and fulfilling project requirements. The project management techniques identified for the projects are utilized appropriately and included in bring the project to completion. Organizations can execute projects quickly and effectively through the use of project management.

Table 2-1 project management vs general management

Dimension	Project management	General Management
Work Activity Type	Unique	Routine
Management Strategy	Ability to adapt to change	Manage by exception

Planning	Critical	Important
Budgeting	Start from scratch, multiple budget periods	Modify budget from previous budget period
Sequence of Activities	Must be determined	Often predetermined
Location of Work	Crosses organizational units	Within an organizational unit
Reporting Relationships	Informal	Well defined

(Samuel J. Mantel, Jr.,Jack R. Meredith,Scott M. Shafer,Margaret M. Sutton, 2017)

Project management consists of five process groups: initiating, planning, carrying out, overseeing and controlling, and closing. (PMBOK®, 2008)

InitiatingOnce a project is chosen; it needs to be begun or launched. This has a lot of connections. The project sponsor must first create a project charter outlining the steps necessary to satisfy the project's target audience. In organizations, this formal procedure is frequently disregarded. The project's scope parameters, the project team's authority, responsibility, and accountability, as well as the project's work authorization, should all be described in the project charter. Without one, it's possible that the team members may not understand what is required of them, which might be quite costly.(Heagney., 2012)

Planning: is the setting of objectives, guidelines, and processes for a group of people or an organization..Poor planning is one of the main reasons projects fail. Lack of planning is frequently the root of the issue! The crew only tries to "fly it," or do the task without any kind of planning. (Heagney., 2012)

A project's execution phase involves turning theoretical and planned concepts into actual, tangible structures. In this phase, the actual site preparation, structures, machinery, and equipment are built (systems), and they start to work to achieve the project goals. Personnel is employed, trained, and equipped with the necessary systems for controlling and executing the project. The people who make up the organizational structure are also built. Also, to meet the project's operational requirements, processes including Maintenance management, accounting, marketing, and procurement (supply chain management) are built.(Chitram, 2011)

Although **Monitoring and Controlling** are sometimes integrated into one activity for convenience, they can be thought of as two separate processes. Control is performed by comparing the existing location of project work to where it should be, and corrective action is then madeif there are any deviations from target. Tracking your progress also allows you to keep track of where you are. An assessment of the volume and caliber of work is made using the tools necessary for the sort of job being done.The result of this evaluation is contrasted with level of the projected work; Action will be done to bring progress back in line with the anticipated level if the actual level is higher or lower than expected the anticipated level.(Heagney., 2012)

2.2.2 Project Management knowledge areas

According(PMBOK®, 2008) to Every project must address 10 project management knowledge areas. These knowledge areas comprise a set of competency skills and processes that the PM must effectively employ throughout the life cycle.. The ten Knowledge Areas identified in(PMBO (PMBOK®, 2008)

Table 2-2 Project Management Knowledge Area

NO	PROJECTMANAGEMENT KNOWLEDGE AREA	DESCRIPTION
1	Project scope management	A procedure required to guarantee that the undertaking covers all of the work needed to complete the project successfully.
2	Project integration management	Coordinates, identifies, describes, merges, and unifies project management.
3	Project time schedule include	The methods need to control the projects timely completion.
4	Project Cost Management	Preparing, estimating, funding, and executing and managingexpenditures so that the undertaking can be finished within the allocated budget.
5	Project Quality Management	Entails the processes incorporatingquality policy in terms of To meet stakeholder expectations, project quality needs must be planned, managed, and controlled.
6	Project Resource Management	Includes the procedures for locating, acquiring, and managing the resources required for the project's effective completion.
7	Project communication management	preparing an estimate, creating a budget, obtaining money, monitoring, and maintaining control expenditures so that the project can be completed within the allocated budget.

8	Project Risk Management	Risk management of a project includes risk identification, analysis, planning, implementation, and monitoringare all included.
9	Project procurement management	Incorporates the procedures required to get items, services, or results from sources other than the project team.
10	Project Stakeholder Management	Contains the procedures for identifying the individuals, groups, or organisations that could have an impact on or be impacted by the project, analysing stakeholder expectations and their impact on the project, and developing suitable management strategies for successfully involving stakeholders in project decisions and execution..

Source (Prakash, 2017)

2.3 Project execution

A project's execution phase involves changing theoretical and planned concepts into actual, tangible structures. In this phase, the actual site preparation, structures, machinery, and equipment are built (systems), and they start to work to achieve the project goals. Personnel are employed, trained, and equipped with the necessary systems for controlling and executing the project. The people who make up the organizational structure arealso built. In order to meet the project's operational needs, processes including Accounting, marketing, supply chain management, and maintenance management also built.(Chitram Lutchman, 2011)

According to (Chitram, 2011) The project has the highest chance of going off the tracks during this phase of the project cycle because both expense overruns and scheduling delays typically happen during this time. In order to prevent cost overruns or schedule delays, adequate controls are needed. The tools offered to or created by the leaders of projects for early detection and prevention of these circumstances are essential to preventing delays and cost overruns. The project manager now serves as the organization's eyes and ears, serving as the primary liaison between senior management and the project to guarantee that the proper decisions are made regarding the project at the appropriate time. To address the operational needs, maintenance management, accounting, and marketing are established.

The Executing Process Group consists of the techniques used to complete the activities listed in the project management plan and fulfil project requirements. In addition to organizing people and resources, this Process Group is in charge of integrating and carrying out the project's activities in accordance with the project management plan.(PMBOK®, 2008)

According to (PMBOK®, 2008), The outcomes of project execution could necessitate a new baselines and update of the planning. This can include adjusting predicted activity durations, adjusting productivity and resource availability, and dealing with unexpected threats. These changes may have an effect on the project management strategy or project materials, prompting a thorough evaluation and the development of appropriate project management solutions. The findings of the analysis may result in modification requests, which, if granted, may alter the project management strategy or other project records, and may even entail the production of new baselines. The Executing Process Group includes the following project management procedures:

Table 2-3 Execution Process Group

	EXECUTION PROCESS GROUP	DESCRIPTION
1	Direct and Manage Project Execution	Is the method of carrying out the tasks outlined the project management strategy in order to fulfil the project's goals.
2	AcquireProject Team	Refers to the action of establishing the availability of human resources and the formation of the team needed to complete project tasks.
3	Develop Project Team	Is the process of enhancing project performance by strengthening team capabilities, team interaction, and the overall team environment.
4	Manage Project Team	Refers to the practice of measuring performance of the team, giving criticism, settling conflicts, and managing adjustments for the purpose of raising project performance.
5	Information Distribution	Is the act of creating important providing

		project stakeholders with the information they need.
6	Manage Stakeholder Expectations	Is the practice of discussing and collaborating with stakeholders in order to meet their demands and handle concerns as they arise.
7	Conducting procurements	The action of soliciting seller answers, oosing a vendor and awarding a deal.

Source(PMBOK®, 2008)

The execution Process Group comprises the procedures executed to accomplish the tasks specified in the project management scheme to meet the project requirements. This Process Group entails organizing personnel and assets, along with consolidating and executing the undertakings according to project managementof the project scheme.(Project Management Institute, 2008a)

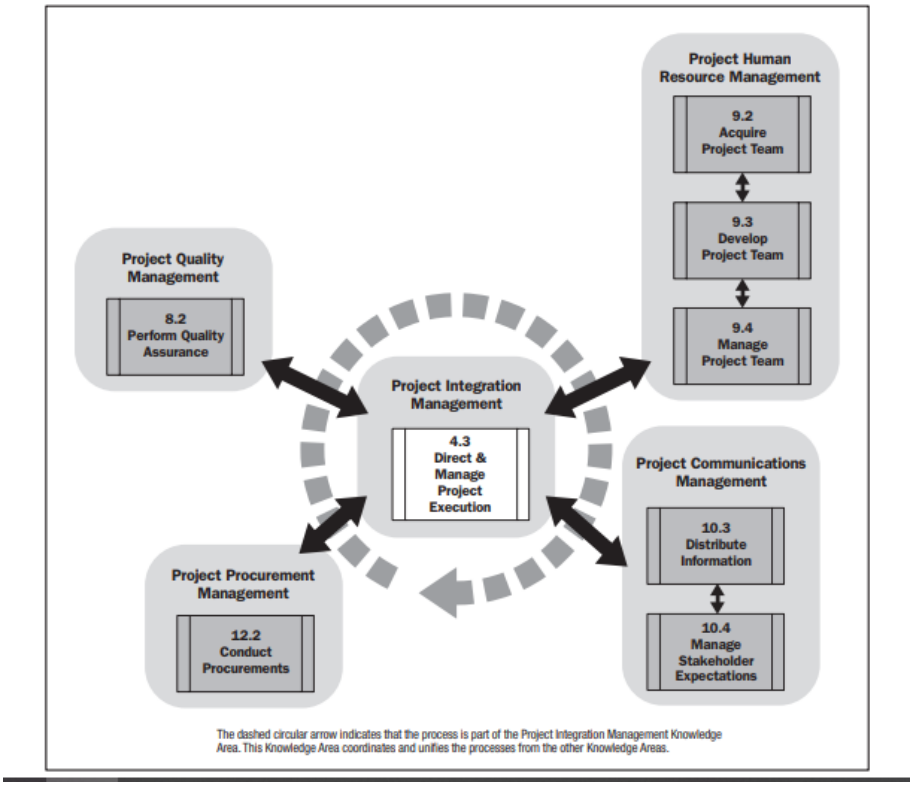


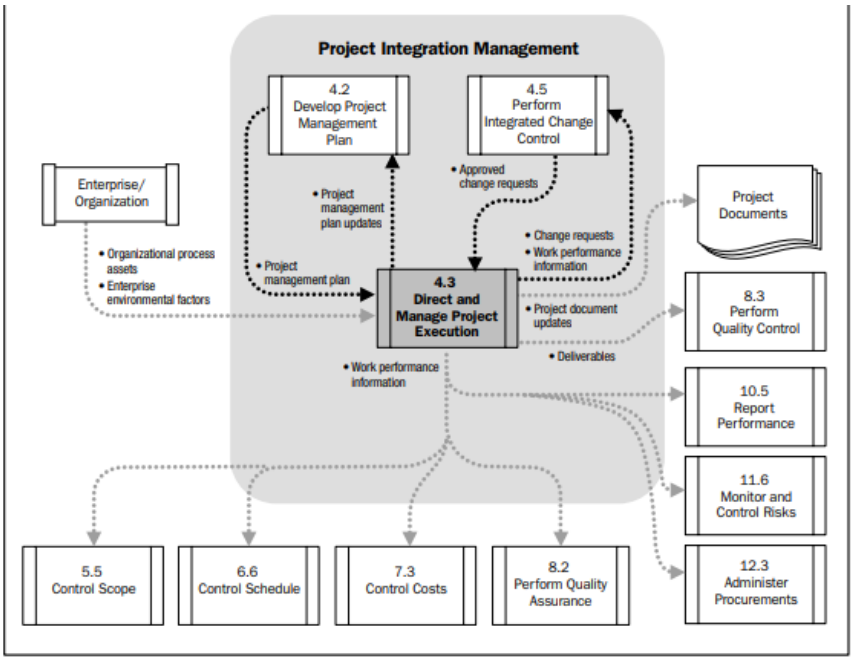
Figure 2-1execution process group

Source (PMBOK®, 2008)

2.4 Direct and Manage Project Execution

Project management and direction execution is the process of carrying out the tasks listed in the project management plan in order to achieve the project's goals. These include, but are not restricted to, establish project deliverables, Recruit, educate, and oversee the project team members, Obtain, control, and make use of resources including supplies, machinery, tools, and facilities, Implement the standards and processes as planned. Establish and maintain lines of communication for the project team both internally and externally. Assist forecasts, incorporate authorized changes into the project's scope, plans, and environment by producing project statistics on cost, schedule, technical and quality progress, and status. Manage risks and put in place risk mitigation measures; and assemble and record the lessons learnt, then execute the recommended process improvement efforts.(Project Management Institute, 2008b)

Figure 2-2 management of project execution



Source (PMBOK, 2008)

2.5 Factors Affecting Project Execution

The construction sector encompasses a variety of activities related to all types of structures and engineering constructions, also to upkeep, planning, and administration. This sector is strongly tied to many other economic sectors, making it a significant and reliable indicator of the national economy's movement and developments (Sweis et al., 2008). However, several risks are confronting construction initiatives and endangering their operations. These hazards are primarily caused by inadequate planning and management, identification stage and also by external factors which impedes project progress this leads to poor building quality, greater expenses, or delayed delivery.(Gajewska & Ropel, n.d.)

2.5.1 Identification stage affecting the execution stage

The initial phase of any project is project identification. The goal of identification of the project is to create a preliminary proposal for the most appropriate set of interventions and strategies to accomplish a certain development objective in a particular setting or environment, within predetermined time and budgetary restrictions. The project execution stage will be hindered if the relevant project identification information is not gathered.(*Project Identification | Investment Learning Platform (ILP)*)

Identification stage is a phase that comes after money but not before the design process begins. Studies are carried out throughout this stage in order to analyze demand for space issues, the restrictions and possibility of the Suggested site of the project, and the cost vs budget. The pre-design phase's funding availability varies and is a crucial factor in selecting which investigations are prioritized. Funds may be available to establish a thorough project programmed or to examine specific technical difficulties in order to decide project scope, budget, or schedule.(*Pre-Design Phase | UCOP*, n.d.)

As (*Pre-Design Phase | UCOP*, n.d.)The pre-design phase may include involve site analysis, programming, cost analysis, and value engineering.

- **Site analysis** includesite selection, geotechnical evaluations, and an analysis of existing structures.

- **Programming**defines the project requirements for the user. Programming involves categorizing the required resources, such as hardware and locations, as well as functional connections.
- **The construction cost**In order to help with budget explanation and project management, analysis provides a construction budget amount for the capital improvement budget (CIB) as well as a cost plan.

2.5.1.1 Site analysis

These studies are normally performed by professionals that possess the requisite competence. The studies and measurements are summarized in the research papers, and they typically comprise suggestions for incorporating the results into the architectural design. These inquiries also include substantial impact on the feasibility of the project, as well as safety and legal issues. Other studies identify current situations, which may or may not be measured. Data collection, site analysis reports, site analysis drawings and a site comparison analysis are all part of these studies.(*Pre-Design Phase | UCOP*, n.d.)

As (*CM DP CONTRACT FULL Document. Pdf*, n.d.) site analysis include geotechnical reports, hydrology studies and land survey.

A. **Geotechnical reports** offer details on the current project conditions. The information often contains older reports for neighboring structures and the actual samples that were taken at the project site. The selection procedures used differ based on the job.

- **Soil samples** are examined in the laboratory to evaluate soil type, expansion, percolation, bearing capacity, friction, and other factors, as well as moisture content parameters pertinent to the suggested construction. Other significant soils information includes drainage and permeability, depth of the groundwater, height of the bedrock, compaction, and erosion are possible, Possibility of swelling and shrinking, Compressive and tensile strength (bearing capacity) and Fill evidence.
- **Recommendation** The collected data is subsequently turned into recommendations for: A few examples of site preparation are soil replenishment or compacting, bearing loads and the anticipated amount of settling, Measures to be taken to deal with ground and surface water, which could affect building activities and the final result of the project, and Particular foundation requirements.

B. Hydrology Studies

Hydrologyinvestigations is carried out by environmental consultants or hydrologic engineers.The study is founded on a review of available maps and records, as well as the collecting of hydrologic measurements made at specified sites. The hydrological studies include: Floodplain areas, Surface water drainage patterns (on and off site), Aquifers and recharge zones are two types of recharge zones, Groundwater depth, Storm drainage system specifications, Areas prone to erosion, Hazards from both mudslides and debris flows, Flooding and tsunami dangers along the coast.

C. Land survey

Land surveys depict Existing site characteristics, project boundaries, and (where relevant) legal boundaries such property lines, rights-of-way, and easements. In addition to looking up existing documents to gather utility and boundary information, the surveyor locates actual physical items including buildings, roads, trees, and topographical formations. The survey outlines the site's configuration and dimensions.

Measurements made by the surveyor of existing element elevations are particularly important for connecting the planned project to existing roadways and utilities, and possibly to an existing structure. Grades are displayed and tied to a fixed point, which is frequently a campus-wide datum.

2.5.1.2 Programming

The user's requirements are identified through programming. This comprises outlining the functional requirements of a project, both within and outside, including the dimensions, content, actions, and relationships. A project program provides not only as a basis for design and a source of knowledge regarding a project, but it is also frequently used to look for funding. The output of programming is the project programmed, commonly referred to as the Detailed Project Programmed (DPP).

The programming method finishes with a succinct and properly structured explanation of the problem. Detailed program data is typically separated from more generic useful information. through the project, quality and scope are establishedprogram. Quality is frequently stated in the project goals and, more precisely, in the project program in an abstract manner.(*Pre-Design Phase | UCOP*, n.d.)

2.5.1.3 Construction cost

This section provides ways to calculate building expenses for project budgetsof a project is included in the current Capital Improvement Budget (CIB). Estimating construction costs usually

entails taking expenses adapting them to the current project while accounting for changes in the project's location, scope, construction schedule, and other factors..(*Pre-Design Phase | UCOP*, n.d.)

2.5.2 Planning Affecting The Execution Stage

In order to successfully navigate stakeholders, sponsors, teams, and the project manager through the many project phases, project planning is essential. Planning is necessary to establish desired objectives, manage risks, prevent missed deadlines, and ultimately create the intended good, service, or result. Lack of careful preparation will almost certainly have an adverse effect on project execution.Project planning comprises dividing a bigger project into tasks, putting together a project team, and figuring out when to finish the work. In this stage, smaller objectives inside the larger project will be defined and, ensuring that they are all doable within the time limit.

When it comes to project management, the old saying "failure to plan is planning to fail" surely applies. mostly project execution will be affected by

- The project's expectations are excessive. Many project managers have encountered situations where they were required to satisfy impossible standards. They may have rushed or skipped steps in the planning process in order to complete a project within a set deadline.
- Impatience. This could be one of the reasons project managers rush into implementation rather than spending time preparing. It is nearly guaranteed that this requirement to skip the most crucial project management phase would lead to regret and additional labour.
- A lack of understanding. Lack of understanding of how planning affects project success is one of the key reasons it gets neglected..

2.5.3 External Factors Affecting The Execution Stage

2.5.3.1 Technological Factors

The construction business is quickly evolving, and technological considerations are playing a significant part in this shift. The building process is getting more efficient and effective, and new technologies are assisting in the improvement of project quality. This is wonderful news for customers, consumers, and the industry as a whole. A variety of causes have contributed to the developments, including the rise of new technology, increased data availability, and the demand for improved efficiency in construction activities.(Jeusu & Burns, n.d.)

One of the most important applications of technology in construction is to increase safety and standardize quality control. Construction is a dangerous sector, and even little safety changes can have a significant impact. New technologies are being employed to improve both worker safety and the general safety of construction sites. As new technology is integrated into building projects, conventional methods of working can be abandoned in favor of more efficient processes. Paper-based processes, for example, have been replaced by digital techniques, and construction firms are now leveraging data to drive decision-making.(Jeusu & Burns, n.d.)

2.5.3.2 Economic Factors

A provision in a cost estimate is escalationthat allows for increases in the cost of labor, materials, equipment, and so on when prices fluctuate over time. The rising of costs has direct impact on the execution of the project. The cause of this change are the local currency's exchange rates to other currencies throughout the world, the interest rate and the rate of inflation charged on loans .(Akintola Akintoye, Paul Bowen and Cliff Hardcastle, 2009)

Exchange rates affect building material costs because they depend depending on the kind and volume of materials a nation imports at any given moment, the requirement to import raw materials utilized in domestic construction material manufacturing, and whether or not local goods (such copper, wood, and steel) are traded internationally as commodities. According to(Akintola Akintoye, Paul Bowen and Cliff Hardcastle, 2009), It has been stated that the entrance of the foreign currency market has not been good impact on building material pricing.

High bank interest rates and unpredictability in the foreign currency market causes a country's foreign exchange resources to be significantly depleted,severely hurting the construction execution, which imports around 60% of its raw materials (Atkeson & Ohanian, 2001).

2.5.3.3 Political factors

Possibility of direct or indirect government expropriation concerns multinational corporations considering potential investments throughout several different countries. Political risks, in its broadest meaning, is the likelihood that the state will violate prior agreements with private businesses using its exclusive right to legal force in order to implement a redistribution of rents between the private and public sectors entities. Political risks are linked with government acts that i) reject or restrict an investor's or owner's right to use or benefit from his or her assets; or ii) lower the firm's worth. War, revolutions, government seizure of property, and acts to prevent the

migration of profits or other income from within a country are examples of political risks.(Yenew B. The Taddele, n.d.)

Although (Yenew B. Taddele, n.d.) highlighted, when explaining the nature of political risks, that "political risks are very unlikely to occur," they have unanimously affected "the ongoing construction projects in Ethiopia since 2016" when "Ethiopia has been pummeling by mass protests."

2.6 Monitoring and Evaluation

Monitoring and Evaluation (commonly referred to as M&E) is a blend of information gathering and analysis (observation) and gauging the extent to which a program of M&E is utilized to evaluate the performance of projects, organizations, and programs established by governments. Numerous research studies indicate M&E as a crucial element of essential success factors that contribute to project success.

M&E enables one to determine whether the project's resources are sufficient and whether they are being used appropriately, whether the capacity is adequate and appropriate, and whether the project is progressing as planned. Evaluation focuses more on the results/outcomes and impact of the project. It is typically an intermittent evaluation of changes in the predetermined outcomes that relate to the program or the interventions of a project (Goyder, 2009).

The project manager uses observation and assessment to make judgements regarding the project's future and analyses whether the project has met its set goals and objectives. In order to ensure logical reporting, the process that links results and demonstrates accountability, quantifies efficiency and effectiveness, ensures effective resource allocation, encourages continuous learning, and improves decision-making, the International Fund for Agricultural Development (2008) views monitoring and evaluation practices as a component of program design.

2.7 Project execution success

Cooke-Davies (2002) and De Witt (1988) Suggested Project success criteria are used to determine if a project is successful or unsuccessful. The evaluation of Critical Success Factors is done in relation to standards that are established as success criteria. Chan et al.'s (2004) argument states that a successful framework should be able to determine the relationship between key success elements. According to Westerveld's (2003) analysis of a number of earlier research, creating a

thorough framework that connects success factors and success criteria is essential for projects to succeed. Combining these factors leads to ongoing improvement in addition to project success.

The external environmental success elements (independent variables), which are parallel to each success criterion, are used to measure the identified success criteria (dependent variable). Measurement can be done by gathering data and utilizing statistical methods and tools to analyses it. The following success criteria (dependent variables) will be put to the test: finishing the project on schedule, finishing the project on budget, and finishing the project at the desired quality.

2.8 Empirical Review

The construction industry is essential to the development and success of society's goals. One of the largest industries in industrialized nations, the construction sector contributes 10% or so to the GDP. The nature of the construction industry makes it complex since a variety of parties are involved, including clients, contractors, consultants, stakeholders, shareholders, and regulators. Many factors, including time, money, quality, client satisfaction, productivity, and safety, are linked to performance.

There are large number of performance indicators that may be related to different dimensions (groups), including time cost, quality, client satisfaction, client changes, business performance, health and safety, which can be used to measure and evaluate project performance.(Adnan Enshassi,Sherif Mohamed,Saleh Abushaban, 2009)

Many investigations have been made into the variables affecting project performance in emerging nations. According to Faridi and El-Sayegh (2006), among other factors, construction delays in the United Arab Emirates are caused by a lack of skilled labour, poor supervision and site management, insufficient leadership, a shortage of equipment, and equipment breakdown. Conflict, subpar workmanship, and the incompetence of contractors were among the issues Hanson et al. (2003) identified as contributing to client discontent in the South African construction sector. Quality and attitude toward service have been identified by Mbachu and Nkando (2007) as one of the major barriers to successful project delivery in South Africa.

In general, a number of project parameters may have an impact on execution stage performance, which may have one or more indicators. For example, it was found by Sunil M. Dissanayaka and Mohan M. Kumaraswamy (in 1998) that project characteristics, procurement system, project team

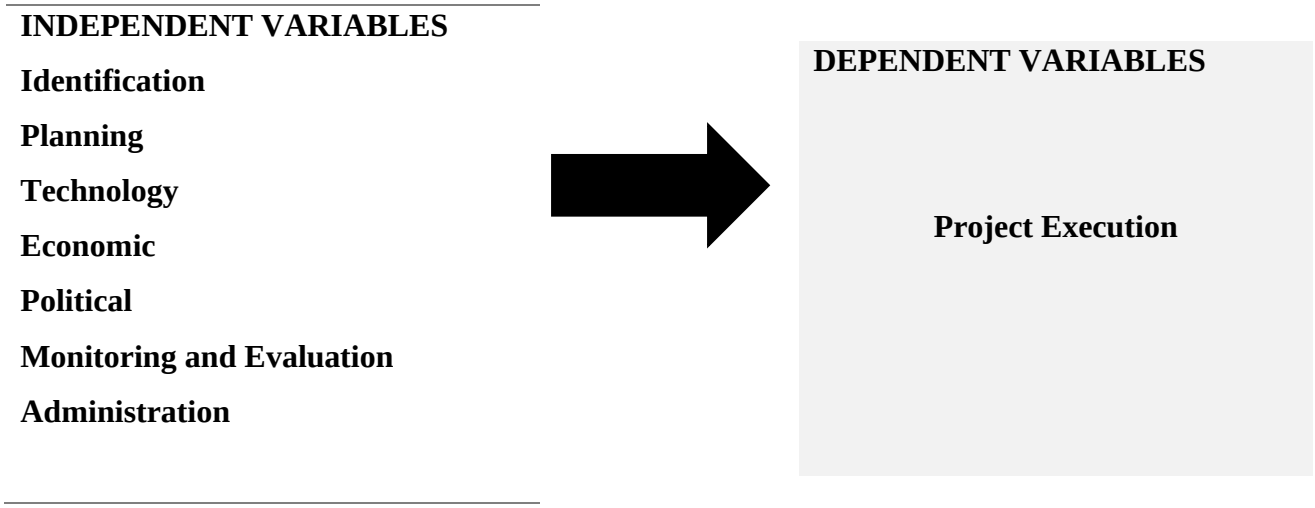
performance, client representation's characteristics, contractor characteristics, design team characteristics, and external conditions all have an effect on project time and cost performances.The competence of the project manager, top management support, the project manager's coordinating and leadership skills, monitoring and feedback from the participants, decision-making, coordination among project participants, the competence of the owners, social condition, economic condition, and climatic condition are just a few of the factors that have an impact on project cost performance, according to (K.C. Iyer a, K.N. Jha, 2005). However, research has found that the factor with the largestimpact on cost performance was coordination among project participants.

Compared to other project life cycle phases, the start phase is the most important (Cleland, 2008).According to(Dvir et al., 2018.)who recently studied development projects in Israel, the success of a project is mainly influenced by the origination and initiation phase, during which important decisions are taken on the project's goals and execution strategy. Additionally, they discovered that although the creation of formal design and planning documentation has a major beneficial impact on achieving the project's schedule and budget targets, it also considerably enhances the benefits that the customer receives from the finished product.

The primary factors of construction project interruption in Iran were discussed (Sepasgozar et al., 2020)in their research.. The research showed a correlation between new technology and the amount of time spent on construction projects. One of the main causes of delays in many projects is the use of outdated technologies for building, even if this practice is still prevalent. Skilled project managers of the residential and industrial projects were recruited with the aim of gathering first-hand information in order to sightsee the delay resources.Professionals with extensive expertise from 26 businesses participated in this study. In the sample projects, 73 sources of delay were identified, while 25 problems were related to the new technological constraint. The research's findings help practitioners and policy makers understand the specific elements that contribute to the delay.

2.9 Conceptual Model

Based on the literature review, the following relationship between the independent variables and dependent variables proposed as a conceptual framework.



CHAPTER THREE

3 RESEARCH METHODOLOGIES

3.1 Introduction

The research technique for the study was covered in this chapter. There is a description of the variables (both independent and dependent), the research methodology, the type of data, and the data source used in this study. Also presented are the sample population, sampling strategy, and formula for determining sample size in relation to sample count. The method of data collecting based on the measurement parameters of the variables, as well as the method of data analysis, was both covered in this chapter. It was next go over the parameters of the validity and reliability testing.

3.2 Research design and approach

Research design includes selecting the optimal methodology, data collection methods, and plan (or framework) for data analysis. Thus the research employs an explanatory research design. Explanatory study seeks to answer the question "why" by offering justifications. In this case, the researcher is aiming to identify the causes and consequences of the phenomenon being studied. The research analysis was classified as having a causal nature. The dependent variable changes as a result of changes in the independent variable when there is causality. In other words, there is a direct relationship between the variables.(George, 2021)

The research structure is a case study, A case study is an appropriate research design when researchers want to gain concrete, contextual, in-depth knowledge about a specific real-world subject. It allows the researchers to explore the key characteristics, meanings, and implications of the case.(McCombes, 2019)The research employs two different kinds of survey tools. The first is a questioner; they are designed with both closed- and open-ended questions to investigate more in-depth responses. The second strategy is interviews, which are typically more in-depth and intimate.(Prins, 2019)

The research timeline used in the study is a cross-sectional survey, which is an illustration of an observational study design. In a cross-sectional study, the researcher evaluates participants' exposures and results at the same time as compared to longitudinal case-control studies.

Participants in a cross-sectional study are only chosen based on the inclusion and exclusion criteria developed for the study. The researcher performs the study after selecting the study participants in order to assess exposure and outcomes. (Setia, 2016)

The research was employed a mixed-methods approach that is appropriate for thoroughly addressing the research issues. In order to take advantage of the synergy and power that exist between quantitative and qualitative research methods in order to understand a phenomenon more thoroughly than is possible using either of the methods alone, mixed method research combines quantitative and qualitative approaches by incorporating both quantitative and qualitative data in a single study.(Zohrabi, 2013) The combination of qualitative and quantitative research yields more information than each approach alone does. Their joint application gives the research problems a broader knowledge(Creswell, 2020).

3.3 Description of study variables

The dependent and independent variables of the study that are a factor impacting project execution are determined by the research problem(s) or gaps and the pertinent literature. In construction projects, the details Midroc construction are presented as follows:
According to (Abbasbhai & Patel, 2020)Independent variables: The study's independent variables, or the elements influencing the project execution lifecycle, are:

- Identification life cycle of the project
- Planning life cycle of the project
- External factor of the project
- Monitoring and evaluation Performance

Dependent variables: project execution is dependent variables. The study evaluated the factor affecting project execution on the Midroc construction project's.

3.4 Description of study area and target population

3.4.1 Description of the study area

Sheikh Mohammed Al-Amoudi founded the privately held MIC Construction Ethiopia Private Limited Company in order to promote trade and increase the usage of contemporary construction services. As a limited liability company, Midroc construction has been granted an operating license by the Department of Commerce and Industry under license number 00013/91 and is registered

with the Department of Works and Town Planning under registration number CON/1203. A pioneer in the industry, APIs was founded in 1993 GC around June/July. Clearly demonstrate that, as of June 30, 2020, the company's entire assets totaled around 614 million Birr. Advance payments and receivables, work-in-progress (10.4%), inventory (9.8%), and fixed assets (9%) make up the majority (63%) of the company's assets.

MCE has had a significant impact on the nation's overall development. to give its contribution to the construction sector of the economy, is involved in large projects such as high rise & complicated multipurpose buildings, luxury hotels, hospitals, stadiums, and small-scale construction operations. As was already noted, Midroc construction was founded to work on building, road, and other civil works. Since its founding 25 years ago, Midroc construction has successfully completed numerous large-scale construction projects (both in the building and road sectors), the majority of which are vast and intricate constructions. African Union Conference Center, Sheraton Addis, Oromia Conference Hall and Office Building Complex, Federal Police Headquarters Building, and more outstanding and useful structures

According to (SOLOMON, 2020) In Midroc construction, time and cost overruns are discovered to be a very critical and major issue. Throughout the past ten years, schedule and expense overruns have affected nearly all projects. The study concentrates on the variables that influence cost and time overruns throughout the project execution life cycle in Midroc construction. Additionally offers suggestions by identifying the trouble spot. In turn, this will assist the organization, the project's beneficiaries, and other stakeholders in minimizing the effects of any cost and timeline overruns.

3.5 Target Population

The target population for the case analysis comprised of Executives, all prior and current project supervisors utilizing in Project Execution, senior managers, project managers, and Operational Managers, Forman’s of the corporation who possess expertise in the construction undertakings being evaluated. The overall population amounts to 76 individuals.

3.6 Data collection

Semi-structured interviews and questionnaires with clients and workers of the chosen organization will be used to collect the primary data. Questionnaires were distributed to project managers,

senior managers, construction/office engineers, functional managers, and clients as part of the quantitative research process. The purpose of the questionnaire is to assess the factors influencing project execution and their impact on cost and timeline. Likert scale was used in the questionnaire to measure attitudes presented by the respondents. Secondary data is used to gather information from other researchers in the field of the study and to assist the investigation. Additionally, pertinent data was gathered from a variety of secondary sources, including books from the library, newspapers, magazines, various communication tools, online sources, other written documents, and relevant research materials.

The questionnaire comprises of two parts: the first part gathers information on the demographic features of the intended respondents, and the second part is categorized into five sections, each addressing a specific theme of the study. The initial section evaluates the identification factor using six tools, the subsequent section evaluates planning factors through twelve items, the third section assesses external factors by divide in to four sub parts, the fourth section measures the comprehension of the M&E performance of the company through six items and the fifth section evaluates the execution success criteria using four items.

The items used to measure the identification factor are adapted fromHAILU (2019), with Cronbach alpha greater than 0.771. The measurement used for planning factor is adapted from MESERET(2019) with Cronbach alpha 0.975. To measure the external factors, the items are adapted from YIFRU(2019) (Political factorsα= 0.761,Economic and financial α=0.76, technological factor α=0.87) .The items used to measure M&E performance has a Cronbach alpha of 0.715 are adapted from Zeleke (2022).The items used to measure the execution success are adapted from YIFIRU (2019) (α= 0.713).

3.7 Data analysis – Model, Techniques, Software

3.7.1 Data Analysis

The questionnaire data were analyzed with the Statistical Package for Social Sciences (SPSS) version 23. The qualitative method was used to analyze the interview based on the responses. Depending on the findings of the analysis, interpretations and conversations was held to clarify the situation. Finally, the study's major findings were reported, and a recommendation was made.

Descriptive statistics was utilized in this study to summarizes and characterize quantitative data in relevant ways, and Ordinary Least Squares (OLS) regression model was employed for data analysis. The residual analysis is used to determine how well the model matches the data. The residuals (the differences between the observed values of the dependent variable and the predicted values from the model) are examined in residual analysis to determine how well the model fits the data.(Kumar, 2023)

3.7.2 Research Model

The research employed ordinary least squares (OLS) approach. OLS is a linear regression methodology for estimating unknown parameters in a model. The method is based on minimizing the sum of squared residuals between the observed (observed values of the dependent variable) and predicted (model) values.The residual is defined as the difference between the observed and expected values. Error is another word for residue. The residual sum of squares (RSS) is another name for the sum of squared differences. The OLS approach minimizes the RSS by determining the coefficient values that result in the least feasible RSS. The resulting line, which indicates the best fit for the data, is known as the regression line (Kumar, 2023)

Mathematically, this would be written as: minimize $(yi - i)^2$. i represents the expected value, and yi represents the actual value. To calculate the value of the response variable, a linear regression model is represented by the equation below.

y = b0 + b1x1 + b2x2, b3, b4, b5, b6, b7, and e

Where:

Y is the dependent variable. Project execution

The symbol for the intercept is b0.

The letters b1, b2, bn stand in for the coefficients of the independent variables x1, x2,..., xn.

Where:

X1 is the identification factor, X2 is planning, and X3 is technology. Economic factor X4 and political factor X5 Monitoring and assessment factor X6 and Administration factor is X7.

e is the incorrect word.

3.8 Reliability and validity analysis

The Cronbach's alpha test, which gauges the internal consistency of the chosen questionnaires, was used to evaluate the reliability of the study instruments. The test result was over 0.6, which denotes great acceptance and reliability. According to Zikmund et al. (2010), the coefficient alpha ranges from 0 (no internal consistency) to 1 (complete consistency). Scales with coefficients between 0.8 and 0.95 are regarded as having very good quality, those between 0.7 and 0.8 are reliable, and those between 0.6 and 0.7 are considered to have fair reliability. According to Hair Jr. et al. (2007), the following categories apply to the Strength of Association in this study: (Alpha Coefficient Range), (0.6= Poor), (0.6 to 0.7= Moderate), (0.7 to 0.8= Good), (0.8 to 0.9= Very Good), and (> 0.9= Excellent).

Table 3-1Research Reliability Test

Variables	Cronbach's Alpha	Number of Items	Strength Association
Project Identification Factors	0.818	6	Very Good
Project Planning Factor	0.922	11	Excellent
Construction Technology and Resource Factor	0.899	5	Very Good
Economic Factors	0.937	6	Excellent
Political Factors	0.802	5	Very Good
Admin Factors	0.832	4	Very Good
Monitoring And Evaluation Performance	0.910	6	Excellent
Project Execution Success	0.800	4	Very Good

Source: Survey Result, 2023

According to the data presented in table 3.1, the consistency and dependability of the reliability test conducted on the elements that impact the performance of project execution in construction projects, using MIDROC construction Ethiopia plc as a case study, scored 0.800 to0.937. This result surpasses the cutoff threshold of 0.7, indicating that the reliability of the study was high and credible enough to draw conclusions.

Validity refers to the extent to which a research instrument measures what it is supposed to measure. In other words, a valid test ensures that it accurately and appropriately measures the construct it intends to measure. There are several types of validity tests used in research, including content validity, construct validity, criterion validity, and face validity. Criterion

validity refers to the degree to which a test or measure accurately predicts or is associated with an external criterion and it is established by comparing scores from the test with real-world outcomes. One way to assess the validity of a measuring instrument or method is to examine its correlation with a criterion measure.

The study conducted Pearson correlation to assess validity to compare the scores obtained from the measuring instrument or method with scores obtained from a criterion measure. A high correlation between the two measures indicates that the measuring instrument or method is valid in measuring the construct it was designed to measure (Gliem & Gliem, 2003).

Hence, Level of significance for two tailed test rc is 0.395 project identification factor=.818 which is >0.395, project planning factor =0.992 which is>0.395, economic factor=0.937which is >0.395, political factor=0.802> 0. 395, technology and resource factor=0.899 which is>0.395, admin factor=0.832 which is >0.395 and monitoring and evaluation performance=0.910> 0. 395 =>valid.

3.9 Ethical Consideration

The researcher used various data collection instruments from various sources. The researcher makes every attempt to acknowledge the resources referred to, and he accepts responsibility for maintaining the secrecy of respondents' viewpoints and the unanimity of the remainder of the information. The researcher thus ensure that all participants are treated with respect and dignity after being informed that participation in the study is voluntary and that failure to participate were not result in discrimination. To maintain participant confidentiality, identification codes was issued to completed surveys rather than participant names. The information received from responders were used solely for the purposes of the study and not be shared with any third parties. As a result, the researcher optimally considers all of the ethical considerations.

CHAPTER FOUR

4 DATA ANALYSIS AND INTERPRETATION

4.1.1 Introduction

In this section, we will be presenting the scrutinized information obtained from the survey and interview. Furthermore, we will be discussing the response rate and data dependability. Along with this, the analysis includes information about demographic characteristics such as gender, age, educational qualifications, job designation, and work experience. The identification of life cycle factors that impact project execution, planning life cycle factors that affect project execution, monitoring and evaluation affect the project execution, and external factors affecting project execution will also be discussed.

4.2 Response Rate

In order to conduct the research, a total of 76 surveys were dispensed among project managers, senior executives, construction/office engineers, functional managers, supervisors and Forman's. Subsequently, all the questionnaires were retrieved, implying that none were left uncollected.

4.3 Demographic Characteristics of Respondents

The questionnaire is initiated in such a way to have the background information ofevery respondentsuch as sex, age, educational status, role in the organization, and work experience at MIDROC construction Ethiopia plc were illustrated as follows.

Table 4-1 Demographic data of the respondent

Demographic characteristics		Frequency	Percent
sex	male	57	75
	female	19	25
Age of respondent	21-30 years	40	52.6
	31-40 years	20	26.3
	41-50 years	14	18.4
	Over 51 years	2	2.6
Educational Status of Respondents	Msc	15	19.7
	Bsc	50	65.8
	Diploma	7	9.2
	Certficate	4	5.3
Role in the organization	Senior Manager	5	6.6
	Project Manager	10	13.2
	Constructionengineer	36	47.4
	Others	25	32.9
Work experience	0-5	9	11.8
	5-10	30	39.5
	10-15	27	35.5
	Above 15	10	13.2

Source: Survey Result, 2023

As illustrated in the diagram 4.1 above, most of the participants, comprising 57 (75%), were of the male gender, while 19 (25%) were female. Consequently, the results of the research exhibited that the male gender was in the majority among the respondents at MIDROC construction

The table also present the age distribution of the respondents. A total of 40 (52.6%) respondents fell in the age of 21-30 years, while 20 (26.3%) belong to the age group of 31-40 years. The remaining 14 (18.4%) respondents were aged between 41-50 years, and only 2 (2.6%) respondents were above 51 years of age. From these findings, it can be deduced that majority of the respondents were young, which could aid in their comprehension of the factors that impact project execution performance in construction projects.

Regarding to educational status of respondents,15(19.7%) of the respondents were MSc/MA degree holders,and 50(65.8%) were BSc/BA degree holders. While 7(9.2%) of the respondents has diploma educational status and the other 4(5.3%) from the respondents do have certificate

educational level. Therefore, the response rate indicates that, greater from respondents have adequate educational status which helps them to easily identify the factors affecting project execution performance in construction projects and can design the scheme to enhance the performance of construction projects.

As illustrated in the table above, participants hold diverse duties within the research location. Out of all the participants, 36(47.4%) are assigned as construction/office engineers, 10(13.2%) as project managers, and 5(6.6%) as senior managers. The remaining 25(32.9%) respondents have different positions such as foreman, data gatherer, and planners at the study site.

In terms of work background in construction projects, 30 (39.5%) possess 5 to 10 years of work experience, while 27 (35.5%) have gained work experience ranging from 10 to 15 years. The remaining 10 (13.2%) have garnered over 15 years of work experience, and 9 (11.8%) have accrued up to 5 years of work experience in the construction industry. The investigation reveals that a significant number of respondents have pertinent work experience that enables them to comprehend the variables that influence project execution efficacy in construction projects.

4.4 Descriptive Statistics

4.4.1 The Identification Life Cycle Factors that Affect Project Execution

Several statements have tested each variable on the questionnaire. By calculating the mean and standard deviation values of the responses, the statements studying the same variable were converted into a variable index for the purposes of this study. According to Hair et al. (2007), the standard deviation is referred to as the range or variability of the sample distribution values from the mean. When the estimated standard deviation is high, which indicates that the values in the response distribution do not closely match the distribution's mean, the responses are inconsistent. The summary of the descriptive metrics for the factors that impact project execution is assessed using a Likert scale consisting of five gradations: 1 for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree, and 5 for strongly agree. The statistical data for the items assume that the mean (M) score below the midpoint of 3.0 is classified as low average, a mean score ranging from 3.01 to 4.0 is classified as moderate, and a mean score of 4.01 or above is classified as high.

The study examined project identification factors as one of the independent variables. The respondents were inquired to rate the impact of project identification activities on the project

implementation in their organizations. The study determine the identification phase of the project cycle, factors such as the appropriate compilation of a geotechnical report prior to commencing the project; the establishment of clear expectations, roles, and responsibilities for the workforce; the arrangement of necessary equipment before initiating the project; the adequate preparation of land surveying; an evaluation of the hydrological surface of the region, and the timely preparation of the site.

Table 4-2The Identification Life Cycle Factors that Affect Project Execution

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The contractor properly prepares a geotechnical report before starting the project	76	1.00	5.00	3.46	1.59
The contractor has an investigation on the hydrological surface of the area.	76	1.00	5.00	3.22	1.73
The Contractor properly prepares land survey (Land surveys depict existing site features, project boundaries, and legal boundaries such as property lines, rights-of-way, and easements).	76	1.00	5.00	3.26	1.57
The contractor properly set the necessary equipment before starting the project.	76	1.00	5.00	3.38	1.52
The contractor properly prepares the site on schedule.	76	1.00	5.00	3.32	1.56
Is there have expectation, responsibilities and authorities clarified for the work force.	76	1.00	5.00	3.41	1.29
Overall mean score	76			3.28	1.54

Source: Survey Result, 2023

The above data presented in Table 4.4 indicates that the most significant factor affecting project execution during the project identification life cycle is the contractor's adequate preparation of a geotechnical report before commencing the project, with a mean value of (3.46) and (1.59) standard deviation. This suggests that the proper preparation of a geotechnical report has a relatively greater impact on project execution success. The next most affecting factor is the clarity of expectations, responsibilities, and authorities for the workforce, with a mean value of 3.41 and

a response variation of (1.29) standard deviation, indicating that it has a moderate impact on the project execution success of construction projects.

In addition, contractor ensured that all required equipment was in place prior to commencing the project was rated as moderate as indicated by a mean of (3.38) and standard deviation of (1.52). besidesthe contractor conducted land surveys as moderate rate as shown by mean value of (3.26), with a standard deviation of (1.57).As well, the respondents indicated with a mean of (3.22) and a standard deviation of (1.73)that the contractor required to investigate the hydrological surface of the area.

Another important task involved in identifying life cycle factors that affect project execution is ensuring that the contractor prepares the site on schedule. This task should have a mean score of (3.32) and a standard deviation of (1.56) in terms of response rate

Furthermore, based on the interview feedback, the contractors executed various activities related to the life cycle of identification, such as conducting a land survey, creating a geotechnical report, defining the essential equipment, exploring the hydrological surface, and fulfilling other fundamental necessities before initiating the construction process.

4.4.2 The Project Planning Life Cycle Factors that Affect the Project Execution

The study examined the project planning factors as one of the independent variables. The respondents were inquired to rate the impact of this project life cycle on the execution of the project in their organizations.

According to the study the project execution phase is impacted by several factors in the project planning life cycle. These include the availability of WBS, project time schedule, project cost plan, project procurement plan, project communication plan, project human resource plan, and a clearly defined project time schedule.

Table 4-3Planning Life Cycle Factors That Affect the Project Execution

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The actual work perform are according to the plan	76	1.00	5.00	3.30	1.40

The work packages break down in to smaller tasks	76	1.00	5.00	3.31	1.57
The project time schedule clearly available	76	1.00	5.00	3.43	1.48
The project cost plan available	76	1.00	5.00	3.72	1.28
The project quality plan is documented	76	1.00	5.00	3.32	1.39
The project risk management plan is documented	76	1.00	5.00	3.35	1.59
The project communication plan in place	76	1.00	5.00	3.51	1.57
The project HR plan available	76	1.00	5.00	3.44	1.48
The project procurement plan available	76	1.00	5.00	3.62	1.15
The project scope is clearly defined	76	1.00	5.00	3.30	1.39
The company give no or little attention for detail of execution, technological implication of different construction techniques, and production capacity of machines and labors during planning	76	1.00	5.00	3.31	1.56
Overall mean score	**76**			**3.13**	**1.32**

Source: Survey Result, 2023

The foremost factor that affects project execution is the availability of the project cost plan, with mean values of (3.72), and the response rate deviated by (1.28) standard deviation. The second variable is the project procurement plan, with mean values of (3.62) and the response rate deviated by (1.15) standard deviation. Another crucial aspect is the presence of the project communication plan, with mean values of (3.51) and (1.57) standard deviation. The availability of the project HR plan is also essential, with mean values of (3.44) and (1.48) standard deviation. Finally, the clear availability of the project time schedule is a critical factor, with mean values of (3.43) and (1.48) standard deviation response rate.

However, the project risk management plan was identified as a potential hindrance to project execution, with a mean value of 3.35 and a standard deviation of 1.59 among respondents. Similarly, the project quality plan was also identified as a factor, with a mean value of 3.32 and a standard deviation of 1.39. Most respondents agreed that proper documentation of these plans was crucial for successful execution of construction projects during the planning life cycle.

The life cycle of planning involves several factors, including breaking down work packages into smaller tasks. However, the company tends to overlook details such as the execution process,

technological implications of construction techniques, and the production capacity of machines and labor during the planning phase. These factors have an equal mean value of 3.31, with response rates deviating by 1.57 and 1.56 standard deviations, respectively. On the other hand, variables such as actual work performance being in line with the plan and clearly defined project scope have an equal mean value of 3.30, with response rates deviating by 1.40 and 1.39 standard deviations.

The response rate assured that, from planning life cycle factors that an effect at project execution includes the availability of project cost plan, the availability of project procurement plan, the presence of project communication plan in place, the availability of project human resource plan, and the statement of project time schedule clearly, documentation project risk management plan and the project quality plan, the work packages break down in to smaller tasks, actual work perform are according to the plan and the project scope is clearly defined were maintained at medium rate at the same due have medium role for project success.

Based on the interview Planning a project gives the execution phase structure and foresight, which helps get rid of inefficient behaviors and practices monitoring of the budget and schedule at each step of the project is ensured by project planning. The team members' tasks are guided by a timeline in the project plan, which also makes it clear which tools they will need and when. Additionally, it enables the team to maintain its dedication to even higher project performance.

4.4.3 External Factor Affecting Project Execution

The primary external elements that impact project implementation encompass construction techniques and resource factors, financial factors, political factors, administrative factors, and monitoring and evaluation performance factors. The effect of each of these aspects on project execution is listed below.

4.4.3.1 Construction Technology and Resource Factors (TRF)

The study also examined the technology and resource factor that highly affect the project execution. construction technology and resource factor were the one and contains five questions with having the main values from 3.37 to 3.92 and there is response deviation from 1.16 to 1.49 standard deviation among respondents.

Table 4-4Construction technology and resource factors Affecting Project Execution

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The significant effect of shortage of labor on the project	76	1.00	5.00	3.42	1.49
The significant effect of adapting new technology in your company	76	1.00	5.00	3.92	1.56
The significant effect of shortage of plant/scarcity of equipment parts on the project	76	1.00	5.00	3.40	1.29
The significant of effect of importation of material and equipment on the housing project	76	1.00	5.00	3.37	1.36
The significant effect of delivery of materials and equipment's on the housing project	76	1.00	5.00	3.49	1.16
Overall Mean score	**76**			**3.52**	**1.37**

Source: Survey Result, 2023

According to the findings, the respondents indicated with a mean of 3.92 and a standard deviation of 1.56 that adapting new technology in the company has average effects on project execution in their organizations. In addition, the respondents indicated with a mean of 3.49 and a standard deviation of 1.16 that late delivery of materials and equipment's affect the project execution in their organizations. Further, the respondents indicated with a mean of 3.42 and a standard deviation of 1.49 that shortage of labor on the projects affect the project execution in their organizations.

In addition, the other construction technology and resource factor was relating to the significant effect of shortage of plant/scarcity of equipment parts on the projectmean values of 3.40 and there is response deviation by 1.29 standard deviation and the significant of effect of importation of material and equipment on the projectmean values of 3.37 and there is response deviation by 1.36 standard deviation.

From the response rate, it can concluded that, from external factors that affect project execution construction technology and resource related factors has medium effects with the cumulative mean score 3.52 and the response rate was deviated by 1.37 standard deviation thus, the adoption of new technology, the delivery of materials and equipment's on the project, shortage of plant/scarcity

of equipment parts on the project, effect of shortage of labor on the project, importation of material and equipment on the projects has medium effects on the project exclusion.

4.4.3.2 Economic Factors (EF) Affecting Project Execution

The respondents were asked to indicate how often various economic factors affect the project execution in their organizations. The effects of economic factors such as the significant effect of access to capital on the project; the significant effect of foreign exchange rate on the project; the significant effect of unexpected prices raises for material on the project; the significant effect of inadequate working capital on the project; the significant effect inflation rate on the project; and the significant effect of unexpected prices raises for labor on the project. The results are presented in table 4.5 below.

Table 4-5Economic factors Affecting Project Execution

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The significant effect inflation rate on the project.	76	1.00	5.00	3.00	1.41
The significant effect of inadequate working capital on the project.	76	1.00	5.00	3.13	1.32
The significant effect of foreign exchange rate on the project.	76	1.00	5.00	3.25	1.40
The significant effect of unexpected prices raises for labor on the project.	76	1.00	5.00	3.01	1.60
The significant effect of access to capital on the project.	76	1.00	5.00	3.46	1.59
The significant effect of unexpected prices raises for material on the project.	76	1.00	5.00	3.22	1.72
Overall Mean score	**76**			**3.18**	**1.51**

Source: Survey Result, 2023

According to the findings, the respondents indicated with a mean of (3.46)and a standard deviation of (1.59)that affect the project execution by difficulty to access the capital on the project. followed by the significant effect of foreign exchange rate on the project with having (3.25) mean values and the response deviation of (1.40) standard deviation; the significant effect of unexpected prices raises for material on the project has the mean score of (3.22) and (1.72) standard deviation; the significant effect of inadequate working capital on the project has the mean score of (3.13) and

(1.32) standard deviation; the significant effect inflation rate on the project has the mean score of (3.00) and (1.41) standard deviation and the significant effect of unexpected prices raises for labor on the projecthas the mean score of (3.01) and (1.60) standard deviation.

The response rate thus, revealed that, the effects of economic factors such as the significant effect of access to capital on the project; the significant effect of foreign exchange rate on the project; the significant effect of unexpected prices raises for material on the project; the significant effect of inadequate working capital on the project; the significant effect inflation rate on the project; and the significant effect of unexpected prices raises for labor on the project has medium effects on project execution at construction projects.

4.4.3.3 Political Factors (PF) Affecting Project Execution

Political factors were the major factor that positively or negatively affect project execution. The study examine five variables.

Table 4-6Political factors Affecting Project Execution

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The effect of instability in governance on your company.	76	1.00	5.00	3.26	1.57
The significant effect of political struggle on the projects.	76	1.00	5.00	3.38	1.52
The significant effect of policy instability on the project.	76	1.00	5.00	3.51	1.59
The significant effect of legislation on the project.	76	1.00	5.00	3.43	1.48
The significant effect of election on the project.	76	1.00	5.00	3.21	1.56
Overall Mean score	**76**			**3.36**	**1.54**

Source: Survey Result, 2023

The findings showed that the respondents indicated with a mean of 3.51and a standard deviation of 1.1 that the effect of policy instability in the project execution in their organizations was high. Furthermore, the respondents indicated with a mean of 3.43 and a standard deviation of 1.48 that significant effect of policy instability on the project execution in their organizations was high. Also, the effect of political struggle on the projects in the project execution was rated as high as shown by a mean of 3.38 and a standard deviation of 1.52.

Moreover, the respondents indicated with a mean of 3.26 and a standard deviation of 1.57 that the effect of instability in governance in their organizations was moderate. Finally, the respondents indicated with a mean of 3.21 and a standard deviation of 1.56 that the effect of election on the project in their organizations was moderate.

4.4.4 Administrativefactors Affecting Project Execution

Table 4-7Administrative Factors Affecting Project Execution

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The significant effect of delay by owner for work payment before substantial completion.	76	1.00	5.00	3.30	1.39
The significant effect of owner directed change orders.	76	1.00	5.00	3.31	1.55
Owners' communication with the contractor.	76	1.00	5.00	3.42	1.49
Owners' response for claims of contractors.	76	1.00	5.00	2.92	1.55
Overall Mean score	**76**			**3.24**	**1.50**

Source: Survey Result, 2023

From the administrative factors that have hindering effects on project execution were owners' communication with the contractorwith mean score of (3.51) and (1.59) standard deviation; the significant effect of owner directed change orders with mean score of (3.31) and (1.55) standard deviation and the significant effect of delay by owner for work payment before substantial completion with mean score of (3.30) and (1.39) standard deviation.

The response rate assured that, administrative factors like the presence of owners' communication with the contractor, owner directed change orders, and the delay by owner for work payment before substantial completion has medium hindering effects on project execution while, owners' response for claims of contractors was maintained at lower range with 2.92 mean score and 1.55 standard deviation.

4.4.5 Monitoring And Evaluation Performance Factors Affecting Project Execution

Table 4-8monitoring And Evaluation Performance Factors Affecting Project Execution

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The project performance measured when there is continues of data gathering and analyzing.	76	1.00	5.00	2.92	1.56
M&E are sufficient when it is conducted by members of the project.	76	1.00	5.00	3.40	1.28
The contractor makes corrective action for the next project by comparing planned projects activities and actual project.	76	1.00	5.00	3.36	1.36
The contractor provides M&E training effectively in order to enhance the staff knowledge	76	1.00	5.00	3.48	1.16
Decision making and planning is prepared through monitoring and evaluation information	76	1.00	5.00	2.86	1.41
M&E functions and roles are effectively communicated to all its staffs	76	1.00	5.00	3.13	1.32
Overall Mean score	**76**			**3.19**	**1.35**

Source: Survey Result, 2023

The other factor that determines the success of construction projects was relating to monitoring and evaluation performance factors which contains six questions with having the mean values from 2.86 to 3.48 and the response rate was deviated by from 1.16 to 1.56 standard deviation.

As shown at Table at Table 4.10 above, from the monitoring and evaluation performance factors that affectsthe project execution the first one was the contractor provides M&E training effectively in order to enhance the staff knowledge with average mean score 3.48 and the response rate was deviated by 1.16 standard deviation; followed by M&E are sufficient when it is conducted by members of the project that takes the average response rate 3.40 and the response was deviated by 1.28 standard deviation; the contractor makes corrective action for the next project by comparing planned projects activities and actual project has mean value of 3.36 and there is response deviation by 1.36 standard deviation and M&E functions and roles are effectively communicated to all its

staffs that holds 3.13 mean value and 1.32 standard deviation; thus, from the response rate it can concluded that, the administrative factors like the contractor provides M&E training effectively in order to enhance the staff knowledge, M&E are sufficient when it is conducted by members of the project, contractor makes corrective action for the next project by comparing planned projects activities and actual project, and &E functions and roles are effectively communicated to all its staffs has medium hindering effects on project execution at construction projects.

On the other hand, the project performance measured when there is continues of data gathering and analyzing has average response rate of 2.92 and 1.56 standard deviation and decision making and planning is prepared through monitoring and evaluation information with having 2.86 mean values and 1.41 standard deviation, which indicates the study area there is lower habit of continues of data gathering and analyzing and inadequate monitoring and evaluation as the result such fact has higher hindering effects on project execution.

4.4.6 Project Execution Success Criteria (PSC)

Table 4-9Project success Criteria

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. D
The projects complete on the scheduled time frame.	76	1.00	5.00	3.51	1.57
The projects complete on the quality standard.	76	1.00	5.00	3.26	1.73
The project complete on the budget altered.	76	1.00	5.00	3.31	1.59
The project complete on the scope as planned	76	1.00	5.00	3.42	1.50
Overall Mean score	76			3.38	1.60

Source: Survey Result, 2023

The success of construction projects was determined by identification factors, planning factors and external factors and the more works on such factors (including other unexpected factors) the more successful of project success.

As revealed at Table 4.11 above, the overall project success was found at medium status with mean score of (3.38) and the medium rate of success was diversified by (1.60) standard deviation, as the result, project success issues like complete on the scheduled time frame, complete on the quality

standard,complete on the budget altered and complete on the scope as planned were maintained at medium range at construction projects.

4.4.7 Relative Importance Index (RII) for Factors

The higher value of the index of relative importance (RII) is the critical cause or impact component and is determined by the equation RII = W/W*A, according to Aibinu and Jagboro (2002). The Relative Importance Index (RII) approach is used to describe the relative importance of the specific causes and effects based on the likelihood of occurrence and effect on the project using the Likert scale of five scales.

Where W represents the respondents' weights assigned to each element, ranging from 1, 2, 3, 4 and 5 for very low, low, moderate, high, and very high weights, respectively; A represents the greatest weight (in this example, 5); and N is the total number of respondents

For this study the factors such as ident cation factors, planning factors, and external factors such as economic factors, technology, political; administrative factors and monitoring and evaluation factors.

4.4.7.1 Relative Index of identification factor affecting project execution (IF)

Table 4-10Relative Index of identification factor affecting project execution (IF)

IDENTIFICATION FACTOR AFFECTING PROJECT EXECUTION(IF)		TOTAL(W)	N	A	RI= W/(N*A)	RANK
IF1	The contractor properly prepare a geotechnical report before starting the project	165	76	5	0.434	2nd
IF2	The contractor has an investigation on the hydrological surface of the area.	170	76	5	0.447	1st
IF3	The Contractor properly prepares land survey (Land surveys depict existing site features, project boundaries, and legal boundaries such as property lines, rights-of-way, and easements).	130	76	5	0.342	3rd
IF4	The contractor properly set the necessary equipment before starting the project.	110	76	5	0.289	4th
IF5	The contractor properly prepares the site on schedule.	90	76	5	0.237	5th
IF6	Is there have expectation, responsibilities and authorities clarified for the work force.	85	76	5	0.224	6th
	Cumulative				**0.329**	

Source: Survey Result, 2023

The RII value has a range of 0 to 1, with 0 being the minimum. It demonstrates that the greater the RII value, the more significant the greater factor was, and vice versa. The transformation matrix suggested by Chen et al.(2010) is used to compare RII with the relevant importance level.

From the summary of results in Table 4.18, it can be observed that the key investigation factors that contributed most to success construction projects in were; the contractor has an investigation on the hydrological surface of the area (RII = 0.447), the contractor properly prepare a geotechnical report before starting the project (RII = 0.434), the Contractor properly prepares land survey (land surveys depict existing site features, project boundaries, and legal boundaries such as property lines, rights-of-way, and easements).(RII = 0.289), the contractor properly prepares the site on schedule (RII = 0.237) and expectation, responsibilities and authorities clarified for the work force (RII = 0.224).

Based on the RII calculation, derived importance levels from RII are found at Medium-Low (M-L) 0.2 < RII < 0.4 which indicates identification factor has medium effects on the project success.

4.4.7.2 Relative Index of Planning Factors Affecting Project Execution(PF)

Table 4-11Index of Planning Factors Affecting Project Execution (PF)

PLANNING FACTORS AFFECTING PROJECT EXECUTION(PF)		TOTAL(W)	N	A	RI= W/(N*A)	RANK
PF1	The actual work perform are according to the plan	221	76	5	0.582	10th
PF2	The work packages break down in to smaller tasks	252	76	5	0.663	5th
PF3	The project time schedule clearly available	261	76	5	0.687	3rd
PF4	The project cost plan available	249	76	5	0.655	8th
PF5	The project quality plan is documented	251	76	5	0.661	6th
PF6	The project risk management plan is documented	253	76	5	0.666	4th
PF7	The project communication plan in place	267	76	5	0.703	2nd
PF8	The project HR plan available	301	76	5	0.792	1st
PF9	The project procurement plan available	238	76	5	0.626	9th
PF10	The project scope is clearly defined	251	76	5	0.661	7th
PF11	The company give no or little attention for detail of execution, technological implication of different construction techniques, and production capacity of machines and labors during planning	196	76	5	0.516	11th
	Cumulative				**0.656**	

Source: Survey Result, 2023

Table 4.19, the key Planning Factors that contributed to construction projects success Based on their RII calculated result; The project HR plan available (RII = 0.792), the project communication plan in place (RII = 0.703), the project time schedule clearly available (RII = 0.687); the project

risk management plan is documented (RII = 0.666); the work packages break down in to smaller tasks (RII = 0.663); the project quality plan is documented and the project scope is clearly defined with equal (RII = 0.661); the project cost plan available (RII = 0.655); the project procurement plan available(RII = 0.626); the actual work perform are according to the plan(RII = 0.582); and the company give no or little attention for detail of execution, technological implication of different construction techniques, and production capacity of machines and labors during planning (RII = 0.516).

4.4.7.3 Relative Importance Index of External Factor Affecting Project Execution

Under this part construction technology and resource factors, economic factors (EF), political factors; administrative factors, monitoring and evaluation factors effects on project success were described as below.

4.4.7.3.1 Relative Index of Construction Technology And Resource Factors (TRF)

Table 4-12Relative Index of Construction Technology and Resource Factors (TRF)

		TOTAL(W)	N	A	RI= W/(N*A)	RANK
TRF1	The significant effect of shortage of labor on the project	260	76	5	0.684	2nd
TRF2	The significant effect of adapting new technology in your company	238	76	5	0.626	5th
TRF3	The significant effect of shortage of plant/scarcity of equipment parts on the project	259	76	5	0.682	3rd
TRF4	The significant of effect of importation of material and equipment on the housing project	257	76	5	0.676	4th
TRF5	The significant effect of late delivery of materials and equipment's on the housing project	265	76	5	0.697	1st
	Cumulative				**0.673**	

Source: Survey Result, 2023

Table 4.19 shows the relative importance index RII analysis for construction technology and resource factors on the project success, the significant effect of late delivery of materials and equipment's on the housing project with (RII=0.697); the significant effect of shortage of labor on the project with (RII=0.684); the significant effect of shortage of plant/scarcity of equipment parts

on the project (RII=0.682); the significant of effect of importation of material and equipment on the housing project (RII=0.676); and the significant effect of adapting new technology in your company with (RII= 0.626).

4.4.7.3.2 Relative Index of Economic Factors (EF)

Table 4-13Relative Index of Economic Factors (EF)

	RELATIVE INDEX OF ECONOMIC FACTORS (EF)	TOTAL(W)	N	A	RI= W/(N*A)	RANK
EF1	The significant effect inflation rate on the project.	255	76	5	0.671	4th
EF2	The significant effect of inadequate working capital on the project.	248	76	5	0.653	5th
EF3	The significant effect of foreign exchange rate on the project.	258	76	5	0.679	3rd
EF4	The significant effect of unexpected prices raises for labor on the project.	243	76	5	0.639	6th
EF5	The significant effect of access to capital on the project.	263	76	5	0.692	2nd
EF6	The significant effect of unexpected prices raises for material on the project.	272	76	5	0.716	1st
	Cumulative				0.675	

Source: Survey Result, 2023

Table 4.20 above shows concerning the RII analysis on Economic Factors (EF) such as the significant effect of unexpected prices raises for material on the project with RII=0.716; the significant effect of access to capital on the project with RII=0.692; the significant effect of foreign exchange rate on the project with RII=0.679; the significant effect inflation rate on the project with RII=0.671;the significant effect of inadequate working capital on the project with RII=0.653; the significant effect of unexpected prices raises for labor on the project with RII=0.639. The Relative importance index (RII) on economic factor was higher 0.675 on the success of the project at the study area.

4.4.7.3.3 Relative Index of Political Factors (PF)

Table 4-14Relative Index of Poltical Factors (EF)

	RELATIVE INDEX OF POLITICAL FACTORS (PF)	TOTAL(W)	N	A	RI= W/(N*A)	RANK
PF1	The effect of instability in governance on your company.	248	76	5	0.653	4th
PF2	The significant effect of political struggle on the projects.	257	76	5	0.676	3rd

PF3	The significant effect of policy instability on the project.	274	76	5	0.721	2nd
PF4	The significant effect of legislation on the project.	280	76	5	0.737	1st
PF5	The significant effect of election on the project.	222	76	5	0.584	5th
	Cumulative				0.674	

Source: Survey Result, 2023

As shown at Table 4.21 above, concerning the RII analysis Political Factors (PF) like the significant effect of legislation on the project with RII=0.737; the significant effect of access to capital on the project with RII=0.692; the significant effect of policy instability on the project with RII=0.721; the significant effect of political struggle on the projects with RII=0.676; the effect of instability in governance on your company with RII=0.653; and the significant effect of election on the project with RII=0. 584. The Relative importance index (RII) for Political Factors (PF) was higher 0.674 on the success of construction project.

4.4.7.4 Relative Index of Administrative Factors

Table 4-15Relative Index of Administrative Factors

	RELATIVE INDEX OF ADMINISTRATIVE FACTORS	TOTAL(W)	N	A	RI= W/(N*A)	RANK
AF1	The significant effect of delay by owner for work payment before substantial completion.	251	76	5	0.661	3rd
AF2	The significant effect of owner directed change orders.	252	76	5	0.663	2nd
AF3	Owners' communication with the contractor.	263	76	5	0.692	1st
AF4	Owners' response for claims of contractors.	226	76	5	0.595	4th
	Cumulative		76	5	0.653	

Source: Survey Result, 2023

It can be observed at Table 4.22, the relative importance index for administrative factors which contains owners' communication with the contractor (RII = 0.692), the significant effect of owner directed change orders (RII = 0.663), the significant effect of delay by owner for work payment before substantial completion (RII = 0.661) and owners' response for claims of contractors (RII = 0.595).

4.4.7.5 Relative Index for Monitoring and Evaluation Factors

Table 4-16Relative Index of Monitoring and Evaluation Factors

	RELATIVE INDEX OF MONITORING AND EVALUATION FACTORS	TOTAL(W)	N	A	RI= W/(N*A)	RANK
MEF1	The project performance measured when there is continues of data gathering and analyzing.	222	76	5	0.584	6th
MEF2	M&E are sufficient when it is conducted by members of the project.	259	76	5	0.682	2nd
MEF3	The contractor makes corrective action for the next project by comparing planned projects activities and actual project.	256	76	5	0.674	3rd
MEF4	The contractor provides M&E training effectively in order to enhance the staff knowledge	265	76	5	0.697	1st
MEF5	Decision making and planning is prepared through monitoring and evaluation information	238	76	5	0.626	4th
MEF6	M&E functions and roles are effectively communicated to all its staffs	236	76	5	0.621	5th
	Cumulative				0.647	

Source: Survey Result, 2023

Table 4.22 above shown on the relative importance index RII analysis monitoring and evaluation factors on the project success, the contractor provides M&E training effectively in order to enhance the staff knowledge with (RII=0.697); M&E are sufficient when it is conducted by members of the project with (RII=0.682); the contractor makes corrective action for the next project by comparing planned projects activities and actual project (RII=0.674); decision making and planning is prepared through monitoring and evaluation information (RII=0.626); M&E functions and roles are effectively communicated to all its staffs (RII=0.621)and the project performance measured when there is continues of data gathering and analyzing with (RII= 0.584).

Based on the cumulative Summary of RII for the six factors was calculate the effects of the stated factors are listed as in their order of Economic Factors (EF) (RII= 0.675); Political Factors (PF) (RII=0.674); Construction Technology and Resource Factors (TRF) (RII=0.673); Planning Factors (RII=0.657); Administrative Factors (RII=0.653); Monitoring and Evaluation Factors (RII=0.647)

and identification factor IF) (RII=0.329), thus, for the project success economic factors has higher effects followed by political factors; the third factor is construction technology and resource factors; the fourth factor planning factors and followed by administrative factors and the final factor is monitoring and evaluation factors at construction projects.

4.5 Correlation Test

For the study, to examine the factors such as identification factors, planning factors and external factors like political, economic, technological, administrative, and monitoring and evaluation factors and their effects on project execution success in construction projectsPearson Correlation analysis which was conducted in order to examine the relationship between the independent and dependent variables

According to Kotrlik, Atherton, Williams and Jabor (2011) views, the Correlation coefficient(r) guides includes:

From 0.01 up to 0.09	negligible association
From 0.10 up to 0.29	Low association
From 0.30 up to 0.49	Moderate association
From0.50 upto0.69	Substantial association
From 0.70 and above	Very strong association

Table 4-17Correlation Test

Correlations

		MEF	IF	PF	TRF	EF	PF	AF	SU
MEF	Pearson Correlation	1							
IF	Pearson Correlation	.626**	1						
PF	Pearson Correlation	.879**	.703**	1					
TRF	Pearson Correlation	.847**	.537**	.824**	1				
EF	Pearson Correlation	.712**	.761**	.790**	.543**	1			
PFA	Pearson Correlation	.520**	.771**	.626**	.603**	.455**	1		
AF	Pearson Correlation	.879**	.675**	.935**	.931**	.715**	.624**	1	
Success	Pearson Correlation	.421**	.472**	.681**	.585**	.647**	.586**	.637**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Survey Result, 2023

Note

IF= Identification factor

PF=Planning factor

TRF=Technology and resource factor

EF=Economic factor

PFA=Political factors

MEF=Monitoring and evaluation factor

AF= Administration Factors

The relationship between monitoring and evaluation factor and project execution success and there is a significant relationship at (P=0.000) and there is positive relationship between monitoring and evaluation factor and project execution success. The correlation is moderate association at (r = 0.421).

The relationship between identification factor and project execution success investigated and the result obtained from this study showed that there is a significant (p=0.000) and there is a positive relationship and the relationshipis moderate correlation at(r=0.472).

The relationship between planning factor and project execution success (p=0.000), the relationship is positive and very strong correlation at (r=0.681).

The relationship between technology and resource factor and project execution success was investigated and the result obtained from this study proved that there is significant (p=0.000), positive and substantial correlation at (r=0.585).

The relationship between economic factor and project execution success was investigated and the result obtained from this study proved that there is significant (p=0.000), positive and substantial correlation at (r=0.647).

The relationship between political factors and project execution success was investigated and the result obtained from this study proved that there is significant (p=0.000), positive and substantial correlation at (r=0.586).

The relationship between administrative factors and project execution success was investigated and the result obtained from this study proved that there is significant (p=0.000), positive and substantial correlation at (r=0.637).

Thus, based on the correlation analysis result, it can see that, there is relationship which ranges from moderate, substantial and very strong association between identification factors, planning

factors and external factors like political, economic, technological, administrative, and monitoring and evaluation factors and their effects on project execution success in construction projects.

4.6 REGRESSION ANALYSIS TEST

To retain the validity and reliability of the research's regressed results using linear regression models, the fundamental hypotheses must be met. Therefore, this study has performed the linearity and normalcy assumption tests.

4.6.1 DIAGNOSIS TESTS

4.6.1.1 Normality Test

The study included both visual and numerical approaches to evaluate normality, including the Normal Probability Plot (P-P) graph and Skewness & Kurtosis. The scores are shown to be regularly distributed in Figure 4.4.

Normality: The residuals are normally distributed when a histogram is created. We may say that this distribution satisfies the normality because even though it is somewhat skewed, it is not significantly off from being a normal distribution. The fact that the assumption is satisfied is shown by the fact that the residuals from the histogram are not skewed.

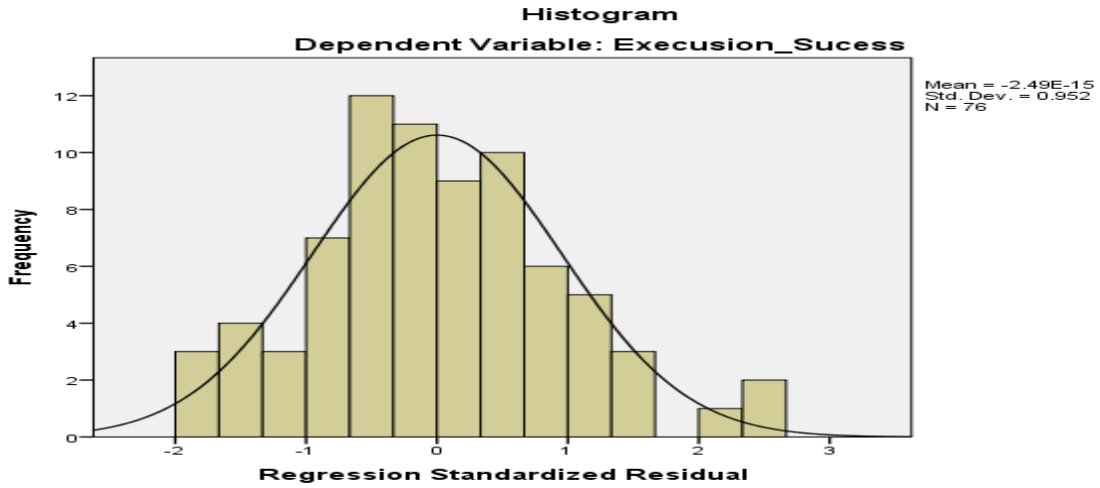


Figure 4-1Normality graph of dependent and independent variables

Source: Survey Result, 2023

Kolmogorov-Smirnov and Shapiro-Wilk test statistics are similarly shown in Table 4.13 below for testing the normality of data among informants on project execution success; Based on the results of these tests in the table, it can be inferred that the project execution success scores at

Kolmogorov-Smirnova (p: 0.000) and Shapiro-Wilk (p: 0.008) were significantly lower than the threshold of (p 0.05) for all four variables.

Table 4-18Normality Test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
The projects complete on the scheduled time frame.	.275	76	.000	.798	76	.000
The projects complete on the quality standard.	.303	76	.000	.761	76	.000
The project complete on the budget altered.	.215	76	.000	.833	76	.000
The project complete on the scope as planned	.282	76	.000	.817	76	.000

a. Lilliefors Significance Correction

Source: Survey Result, 2023

1.1.1. Multi collinearity Test

4.6.1.2 Multi collinearity Test

The independent variables should not be highly correlated with each other. This means that there should not be a strong linear relationship between any two independent variables in the regression model. To check for multicollinearity, the correlation matrix of the independent variables can be examined. Additionally, statistical tests such as the variance inflation factor (VIF) can be used to quantify the degree of multicollinearity (Kleinbaum, 2013).

VIF is a of how much the variance of an estimated regression coefficient is increased due to multicollinearity. The VIF ranges from 1 to infinity, with a VIF of 1 indicating no multicollinearity and a VIF greater than 1 indicating increasing levels of multicollinearity. A VIF of 5 or greater is often considered to indicate significant multicollinearity.

Tolerance, on the other hand, is the reciprocal of VIF and measures the proportion of the variance in an independent variable that is not explained by the other independent variables in the model. The tolerance ranges from 0 to 1, with a tolerance of 1 indicating no multicollinearity and a tolerance of less than 1 indicating increasing levels of multicollinearity. A tolerance of less than

0.1 is often considered to indicate significant multicollinearity. A VIF of 10 or greater and a tolerance of less than 0.1 are often considered to indicate significant multicollinearity

Table 4-19Multi-Collinearity Test

Variables	Collinearity Statistics	
	Tolerance	VIF
Monitoring & evaluation Factor	.458	2.186
Identification Factor	.319	3.137
Planning Factor	.296	3.383
Technology & Resource Factor	.577	1.733
Economic Factor	.207	3.824
Political Factor	.241	3.156
Administrative Factor	.362	2.765

Source: Field Survey, 2023

As the collinearity analysis statistics shows in the above table 4.13, all the VIF values are below 10 whereas the entire tolerance values are above 0.1 thus results show that the postulated assumption is satisfied.

4.6.1.3 Linearity Test

Linearity: The scatter plot comparing the dependent variable to the standardised predicted value should show a linear relationship between the dependent and independent variables with respect to their respective parameters. The plot, as shown below, demonstrates that there is roughly a linear relationship between the success of the project execution and the group of predictor variables represented by represented bythe standardised anticipated value.

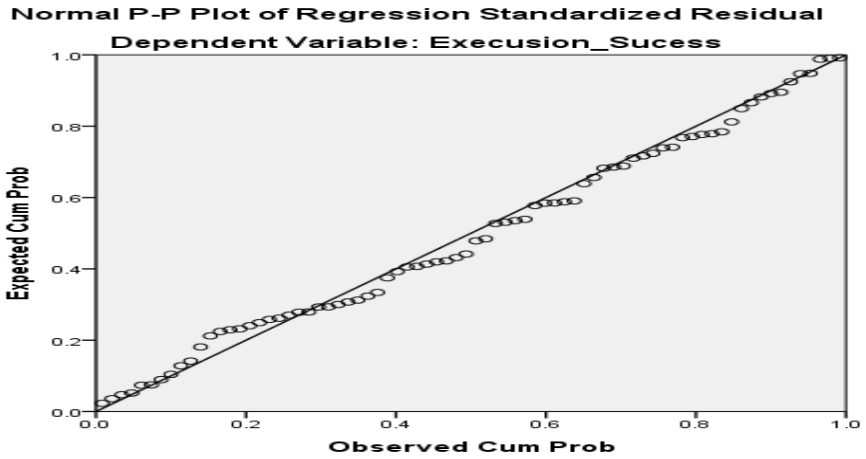


Figure 4-2Linearity graph of dependent and independent variables

Source: Survey Result, 2023

4.6.1.4 Auto Correlation Test

Table 4-20: Autocorrelation test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.929[a]	.863	.849	1.31956	1.982

a. Predictors: (Constant), Administrative Factor, Political Factor, Economic Factor, Monitoring & Evaluation Factor, Identification Factor, Planning Factor, Technology &Resource Factor

b. Dependent Variable: Project Execution Success

Source: Survey Result, 2023

The Durbin Watson (DW) statistic is a test for autocorrelation in a regression model's output. The DW statistic ranges from zero to four, with a value of 2.0 indicating zero autocorrelation. Values below 2.0 mean there is positive autocorrelation and above 2.0 indicates negative autocorrelation

As revealed at the above Table, the Durbin-Watson statistic is 1.982which indicating there is positive autocorrelation it is satisfied.

4.6.1.5 Homoscedasticity Test

The homoscedasticity assumption states that the variance of the errors should remain constant for all values of the independent variable. This implies that for all values of the independent variable, the spread of the residuals should be the same. All levels of the independent variable should have the same error variance. This implies that for all values of the independent variable, the spread of the residuals should be the same.

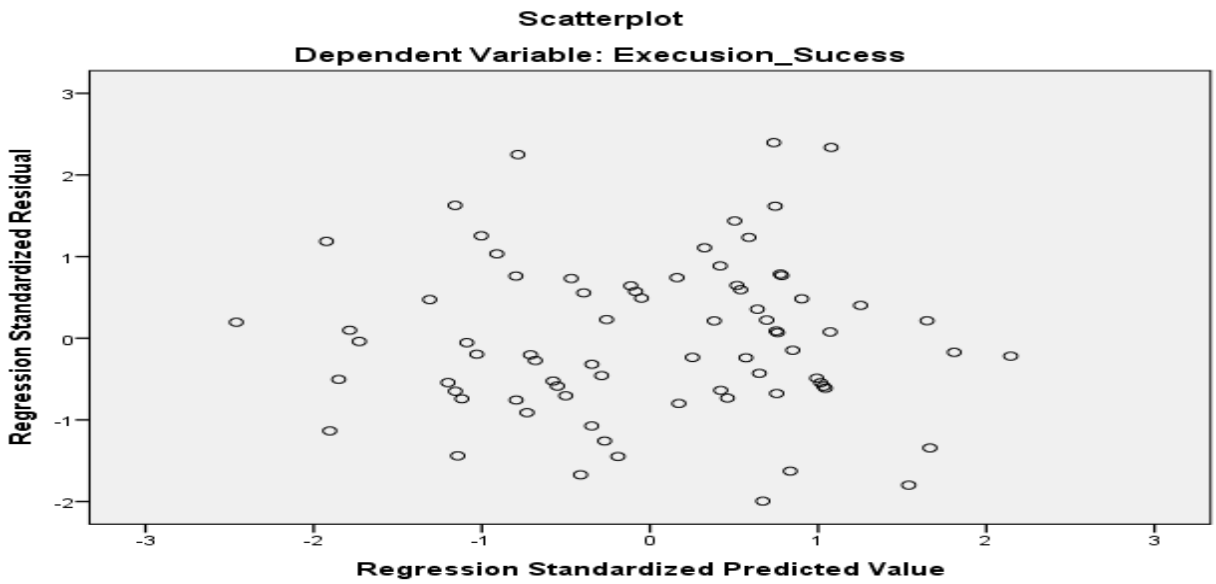


Figure 4-3Scatter Plot Homoscedasticity Measures

4.6.2 Linear Regression

The main factors such as administrative factor, political factor, economic factor, monitoring & evaluation factor, identification factor, planning factor, technology & resource factors (independent variable) has the effects on the project execution performance/success in construction projects (dependent variable)

Table 4-21Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.929[a]	.863	.849	1.31956

a. Predictors: (Constant), Administrative Factor, Political Factor, Economic Factor, Monitoring & Evaluation Factor, Identification Factor, Planning Factor, Technology &Resource Factors

b. Dependent Variable: Project Execution Success

Source: Survey Result, 2023

The R is the coefficient of determination it shows that there is positive correlation between the variables entered for this analysis. This means that there is a positive relationship between identification, planning and external factors and project execution success. It means that project execution success when there is proper consideration of stated factors. Thus, the result shown,

identification, planning and external factors and project execution success arepositively correlated and the strength of relationship is strong at 0.929.

The R-square in at data analysis is 0.863, which suggests that, administrative factor, political factor, economic factor, monitoring & evaluation factor, identification factor, planning factor, technology &resource factorsexplains 86.3% of the variance onproject execution success.While the remaining 13.7% (100% - 86.3%) of the variation is caused by unexpected and estimated factors.

Because an estimate of R2 produced when the sample size is small tends to be larger than the real R2 in the population, adjusted R-square modifies the value of R2 when the sample size is small. A result of 0.849 implies that the predictors that should remain in the model accurately account for 84.9% of the variation in the outcome variable. Due to the fact that Adjusted R2 (0.849) is usually less than or equal to R2 (0.863), the model was appropriate for this study.

A model's fit's standard error (1.31956) is a gauge of the model's accuracy. It is the residuals' standard deviation. It demonstrates how in error someone could be if they employed the regression model to estimate the dependent variable or variable of interest or to make predictions. The standard error will reduce as R2 rises. Our predictions of project execution success using this approach will be, on average, 1.31 off.

Table 4-22ANOVA Table

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	748.582	7	106.940	61.416	.000[b]
	Residual	118.405	68	1.741		
	Total	866.987	75			

a. Dependent Variable: Project Execution success

b. Predictors: (Constant), Administrative Factor, Political Factor, Economic Factor, Monitoring& Evaluation Factor, Identification Factor, Planning Factor, Technology&_Resource Factor

Source: Survey Result, 2023

The findings of the test of significance for R and R2 using F- statistics are shown in the SPSS output table labelled ANOVA (table 4.16). The P-value for this analysis is extremely low (P=0.000). The correlation coefficients R and R2 between independent and dependent variables are therefore statistically significant. Since the F-test for the linear regression has a F = 61.416 and 75 degrees of freedom and is highly significant, we may assume that the variables in our model have a linear connection. The table demonstrates that the independent factors statistically substantially predict the dependent variable, F (7, 68) = 61.416, p (.000) 0.05, indicating that the data are well modelled by the regression model.

Table 4-23Coefficient Table

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.231	.885		1.390	.012
	Monitoring & EvaluationFactor	.515	.201	.514	2.562	.013
	Identification Factor	.273	.210	.216	1.302	.002
	Planning Factor	.202	.057	.586	3.514	.001
	Technology &Resource Factor	.482	.139	.582	3.474	.001
	Economic Factor	.510	.080	.949.	6.375	.000
	Political Factor	.719	.075	.581	6.357	.001
	Administrative Factor	.181	.347	.139	.521	.003
a. Dependent Variable: Project Execution Success						

Source: Survey Result, 2023

Based on table 4.18, linear regressions obtained as follows: Y = 1.231- 0.689 X1 - 0.542 X2 + 0.202 X3 + 0.482 X4 + 0.719 X5 + 0.510 X6 - 0.086 X7 + ε

In the study, the interpretations of linear regression equations are:

- If everything on free variables is considered zero then project execution success (Y) is 1.231
- In the event of monitoring & evaluation factorincreases of 1, project execution success (Y) will increaseby 0.514.
- In the event of an increase in identification factorby 1, project execution success (Y) will increase by 0.216.
- In the event of planning factorincrease of 1, project execution success (Y) will increased by 0.586.

- In the event of an increase in technology &resource factor by 1, project execution success (Y) will increase by 0.582.
- In the event of economic factorincreases of 1, project execution success (Y) will increase by 0.949.
- In the event of political factor increases of 1, project execution success (Y) will increase by 0.581.
- In the event of an increase in administrative factorby 1, project execution success (Y) will increase by0. 139

This study result demonstrated that all factors identification factors, planning factors, political factors, economic factors, monitoring& evaluation factors, , technology &resource factors have significanteffectsproject execution success. In addition, among determinants factors, economic factor (β =0.949, t = 9.646, p= 0.000) had the highest, strong and positive effects on project execution success. Planning factor (β = 586, t = 3.514, p= 0.001) was the second factor for project execution success. Technology &resource factor (β = 0.582, t = 3.474, p=0.001) the third factor which inversely affect the project execution success. PoliticalFactor (β = 0.581, t = 6.357, p=0.000) is the fourth determining factor for project execution success; and the other factor that hasdeterminant effect onproject execution success was monitoring &evaluation factor (β = 0.514, t= 2.562, p=0.013), the result indicates monitoring & evaluation factor was the other determinant factor for project execution success. administrative factor (β = 0.139, t= 5.21, p=0.605)

Therefore, seven of the factor'spolitical factors, economic factors, monitoring & evaluation factors, identification factors, planning factors, technologyresource and administrative factors have significant effects on project execution success.

CHAPTER FIVE

5 CONCLUSION AND RECOMMENDATION

5.1 Summary of finding

The study required to examine factors affecting the project execution performance in construction project in the case of Midroc construction company. The analysis made using statistical tools also showed this fact.

Table 5-1 dependent and independent over all mean and standard deviation

FACTORS	MINIMUM	MAXIMUM	MEAN	ST. DEVIATION
PROJECT IDENTIFICATION	1	5	3.28	1.54
PLANNING FACTORS	1	5	3.13	1.32
TECHNOLOGY AND RESOURCE FACTOR	1	5	3.52	1.37
ECONOMIC FACTOR	1	5	3.18	1.51
POLITICAL FACTOR	1	5	3.36	1.54
ADMINISTRATIVE FACTOR	1	5	3.24	1.50
MONITORING AND EVALUATION PERFORMANCE	1	5	3.19	1.35
PROJECT EXECUTION SUCCESS	1	5	3.38	1.60

As per the results of the correlation analysis, there exists a correlation between project execution success in construction projects and external factors such as political, economic, technological, administrative, and monitoring and evaluation factors. This correlation ranges from moderate to very strong. As per the results of the correlation analysis, there exists a correlation between project execution success in construction projects and external factors such as political, economic, technological, administrative, and monitoring and evaluation factors. The research revealed that all the seven factors, namely political, economic, administrative factors monitoring and evaluation, identification, planning, technology, and resource considerations have a significant impact on project execution effectiveness.

		MEF	IF	PF	TRF	EF	PFA	AF	SUCESS
Success	Pearson correlation	.421	.472	.681	.585	.647	.586	637	1
	Sig.(2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000

5.2 Conclusion

The major objective of this study is to determine the factors affecting project execution of the project and the factors were identification life cycle factors; planning life cycle factors; technology and resource factors; economic factors; political factors; administrative factors and monitoring and evaluation performance factors.

The study found that the following factors had a medium-range impact on project execution: the proper preparation of a geotechnical report before starting the project; the clarification of expectations, responsibilities, and authorities for the work force; the setting up of the necessary equipment before starting the project; the proper preparation of a land survey; an investigation on the hydrological surface of the area; and the proper preparation of the site on schedule.

The project cost plan, project procurement plan, project communication plan, project human resource plan, clearly stated project time schedule, documentation of the project risk management plan, and the project quality plan were all factors from the planning life cycle that had an impact on how the project was carried out. Additionally, the work packages were broken up into smaller tasks, and the actual work was performed in accordance with the project quality plan.

The adoption of new technology, the delivery of materials and equipment on theproject, the scarcity of plant and equipment parts on the project, the impact of a labor shortage on the project, and the importation of materials and equipment on the housing project are examples of external factors that have a moderate impact on the inclusion and success of the project.

The study found that economic factors such as the significant impact of capital availability, the significant impact of currency exchange rates, the significant impact of unexpected material price increases, the significant impact of insufficient working capital, the significant impact of the inflation rate, and the significant impact of unexpected price increases for labor had a significant impact on the project.

The overall average score indicated that political factors have moderately hindering effects on project completion, which suggests that the presence of unstable policies, legislation, political conflict, unstable corporate governance, and elections have a significant impact on project completion at construction projects.

Additionally, administrative factors such as the presence of owner communication with the contractor, owner-directed change orders, and the owner's delay in making payments for the work before it has reached a significant degree of completion have a medium sized negative impact on the execution of the project, while the owners' response to contractor claims was maintained at a lower range.

According to the response rate, monitoring and evaluation factors such as the contractor effectively delivering M&E training to improve staff knowledge, M&E being sufficient when carried out by project participants, contractor taking corrective action for the following project by comparing planned project activities and actual project, and contractor effectively communicating M&E functions and roles to all of its staffs has medium project exacerbating effects.

Due to the project's moderate level of success in execution, the success factors related to meeting deadlines, adhering to quality standards, staying within budget, and following the planned scope were all maintained at a moderate level for construction projects.

5.3 Recommendation

The findings of the study assured that, projects execution and success was found at average range but, it is expected that, the execution should be maximized and for this the researcher forwards the following remedial measures:

- The researcher suggests feasibility studies to help clients and general contractors decide whether a project is feasible. As an additional option, offer information on environmental concerns, the need for regulatory permission, whether the client budget is adequate, and problems associated to a change in design.
- The study goes on to say that the best method to prevent delays and expense increases is to make collaboration the centerpiece of pre-planning to address the essential manpower, procedure, communication, equipment, and material before construction starts.
- Construction projects require a large number of individuals, so a team approach should be developed. Several teams, each with a specific goal, such as the technical team, the finance team, the research team, etc. should be used by the contractor. Technical workers should be given projects based on their areas of expertise or competence. Rework will be lessened as a result, and the

problem of poor project progress management will be resolved. All project teams should arrange meetings in order to achieve successful management.

- The PESTEL analysis model is suggested by the researcher. When performing a strategic study or research, this model, which is a part of the external analysis, provides a broad overview of the various macro environmental aspects that the project must take into account.
- It is important to have an effective framework for owner-contractor communication and collaboration. Changes and modifications to the way planning is carried out should be discussed and anticipated to avoid delays. To avoid affecting project performance, payments must be made on time.
- Effective action must be helpful to the project's success throughout the project life cycle. Primavera-style planning and scheduling software must be necessary, or any other.
- In order to comprehend how a project is moving, ascertain whether it is on track to achieve its objectives, and make sure that it is having a beneficial impact, researcher also advised to engage in M&E properly.

5.4 Research Limitation and Areas of Further Research

5.4.1 Research Limitation

The researcher encountered certain restrictions concerning the scope and content of the investigation, as well as temporal restrictions. Owing to temporal constraints, the investigation was restricted to solely three construction sites out of a total of 14 projects. Five were inactive sites for various reasons, and two projects were located in a remote area, making it impossible for the researcher to reach the site.

5.4.2 Areas of Further Research

Since this study is confined to a particular enterprise and restricted by a regional boundary, forthcoming research on the practices of technological advancement in project execution for accomplishing project success could:

- It is important to conduct a comprehensive study to thoroughly evaluate the correlation between project success and the utilization of technology, as well as the implementation of best practices on a broad scale.
- Assess the success of the project from the viewpoints of both the customer and the consultant to ensure that the execution of the project has positive effects on the project results, offering a

satisfactory resolution to the customer's issue and mutually beneficial outcomes for the organization and the customer, including successful project completion, increased productivity, faster delivery, and tangible gains such as profitability.

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ANNEX

QUESTIONNAIRE FOR SENIOR MANAGERS, PROJECT MANAGERS AND OFFICE ENGINEERS.

Hewan Tesfahunegn

Email- hewantesfahunegn@gmail.com

Addis Ababa

Dear respondents,

I am attending a post graduate program in Project Management at Addis Ababa UniversitySchool of Commerce (AAUSC). As partial fulfillment for the degree, I am conducting aresearch study on "**Factors affecting project execution**". I would appreciate it if you could spare a few minutes of your time to answer thefollowing questions regarding how the Project time management practice affect projectperformance.

To meet the study's goal, I respectfully urge that you answer all of the questions in thequestionnaire. Any information you supply will be treated with the strictest confidentiality and used solely for academic purposes. It is not necessary to write your name. And, though you arefree to stop at any time if you are uncomfortable, your contribution to the study is extremelyvaluable.

Thank you for your cooperation in advance!

Hewan Tesfahunegn

Addis Ababa University

INSTRUCTION:

i. Do not write your name on the questionnaire.
ii. Please read each question carefully
iii. Kindly answer all the questions by ticking or filling in the spaces provided.

SECTION ONE: BACKGROUND INFORMATION

1. Sex: Female ☐ Male ☐

2. Age:

i. 21- 30 years ☐ iii. 41 – 50years ☐
ii. 31-40 years ☐ iv. Over 51 years ☐

3. Level of Education

i. Certificate ☐ M.Sc./MA ☐
ii. Diploma. ☐ Above ☐

4. Work Experience in the organization

i. 0 - 5 years ☐ iii. 10 – 15 years ☐
ii. 5 – 10 years ☐ iv. Above 15 years ☐

5. What is/was your role in the Organization?

i. Senior Manager ☐ Construction/office Engineer ☐
ii. Project Manager ☐ v. Other ☐

6. Position held in the Organization: _____

use" Tick (" where you agree on a point scale 1= Strongly Disagree, 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree)

SECTION TWOIDENTIFICATION FACTOR AFFECTING PROJECT EXECUTION

IDENTIFICATION FACTOR AFFECTING PROJECT EXECUTION(IF)		1	2	3	4	5
IF1	The contractor properly prepares a geotechnical report before starting the project?					
IF2	The contractor has an investigation on the hydrological surface of the area.					
IF3	The Contractor properly prepares land survey (Land surveys depict existing site features, project boundaries, and legal boundaries such as property lines, rights-of-way, and easements).					
IF4	The contractor properly set the necessary equipment before starting the project.					
IF5	The contractor properly prepares the site on schedule.					
IF6	Is there have expectation, responsibilities and authorities clarified for the work force.					

SECTION THREEPLANING FACTORS AFFECTING PROJECT EXECUTION

PLANING FACTORS AFFECTING PROJECT EXECUTION(PF)		1	2	3	4	5
PF1	The actual work perform are according to the plan					
PF2	The work packages break down in to smaller tasks					
PF3	The project time schedule clearlyavailable					
PF4	The project cost plan available					
PF5	The project quality plan is documented					
PF6	The project risk management plan is documented					
PF7	The project communication plan in place					
PF8	The project HR plan available					
PF9	The project procurement plans available					
PF11	The project scope is clearly defined					
PF12	The company give no or little attention for detail of execution, technological implication of different construction techniques, and production capacity of machines and labors during planning					

SECTION FOUR EXTERNAL FACTOR AFFECTING PROJECT EXECUTION

EXTERNAL FACTOR AFFECTING PROJECT EXECUTION						
CONSTRUCTION TECHNOLOGY AND RESOURCE FACTORS (TRF)		1	2	3	4	5
TRF1	The significant effect of shortage of labor on the project?					
TRF2	The significant effect of adapting new technology in your company?					
TRF3	The significant effect of shortage of plant/scarcity of equipment parts on the project?					
TRF4	The significant of effect of importation of material and equipment on the housing project?					
TRF5	The significant effect of late delivery of materials and equipment's on the housing project?					
2. ECOMICAL FACTORS(EF)						
EF1	The significant effect inflation rate on the project.					
EF2	The significant effect of inadequate working capital on the project.					
EF3	The significant effect of foreign exchange rate on the project.					
EF4	The significant effect of unexpected prices raises for labor on the project.					
EF5	The significant effect of access to capital on the project.					
EF6	The significant effect of unexpected prices raises for material on the project.					
3. **POLTICAL FACTORS(PF)**						
PF1	The effect of instability in governance on your company.					
PF2	The significant effect of political struggle on the projects.					
PF3	The significant effect of policy instability on the project.					
PF4	The significant effect of legislation on the project.					
PF5	The significant effect of election on the project.					
4. ADMIN FACTORS AFFECTING						
AF1	The significant effect of delay by owner for work payment before substantial completion.					
AF2	The significant effect of owner directed change orders.					
AF3	Owners' communication with the contractor.					
AF4	Owners' response for claims of contractors.					

SECTION FIVE MONITORING AND EVALUATION

MONITORING AND EVALUATION PERFORMANCE		**1**	**2**	**3**	**4**	**5**
ME1	The project performance measured when there is continues of data gathering and analyzing.					
ME2	M&E are sufficient when it is conducted by members of the project.					
ME3	The contractor makes corrective action for the next project by comparing planned projects activities and actual project.					
ME4	The contractor provides M&E training effectively in order to enhance the staff knowledge					

ME5	Decision making and planning is prepared through monitoring and evaluation information					
ME6	M&E functions and roles are effectively communicated to all its staffs					

SECTION SIX SUCCESS CRITERIA

PROJECT SUCCESS CRITERIA (PSC)		1	2	3	4	5
PSC1	The projects complete on the scheduled time frame.					
PSC2	The projects complete on the quality standard.					
PSC3	The project complete on the budget altered.					
PSC4	The project complete on the scope as planned					

Interview

1. Can you explain the importance of proper planning in project execution? How does it impact project execution?
2. How do you identify potential risks and uncertainties that may affect project execution, and what strategies do you use to mitigate them?
3. How do you ensure effective communication and collaboration between team members during project execution, and what role does it play in the success of the project?
4. How do you prioritize tasks and manage resources during project execution, and what are the key challenges you face while doing so?
5. Can you discuss some of the common challenges you have faced during project execution, and how did you overcome them?
6. How do you measure the progress and success of a project during execution, and what metrics do you use to track the same?
7. Can you discuss the impact of external factors such as economic conditions, political climate, and technological advancements on project execution, and how do you manage them?
8. Can you share your experience of working with cross-functional teams during project execution, and how do you ensure alignment and coordination between different departments?
9. How do you manage changes to project scope, schedule, and budget during project execution, and what processes do you follow to ensure stakeholder alignment?
10. How do you ensure that the project is delivered within the specified timeframe and budget, and what steps do you take to address deviations from the plan?