

ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES



**FACTORS AFFECTING TIMELY COMPLETION OF MARITIME
TRADE AND LOGISTICS AFFAIRES PROJECT (LTO)**

BY: EYERUS ASSEFA

ADDIS ABABA, ETHIOPIA

DECEMBER 2021

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**FACTORS AFFECTING TIMELY COMPLETION OF MARITIME
TRADE AND LOGISTICS AFFAIRES PROJECT (LTO)**

**A THESIS SUBMITTED TO THE DEPARTMENT OF PROJECT
MANAGEMENT AS A PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF ARTS (MA)
DEGREE IN PROJECT MANAGEMENT**

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DECLARATION ABOUT THE RESEARCH

I, the undersigned, affirm that this research paper entitled: Factors : Factors Affecting Timely Completion Of Maritime Trade And Logistics Affaires Project : Evidence from client , consultant and engineers is my original work; prepared under the guidance of Mr. Dereje Teklemariam (Ph.D.) and all references are acknowledged.

Finally, I also assure that this thesis has not been employed and submitted in any way to any educational institutions for a requirement of getting a degree award.

Eyerus Assefa


Name

Signature

STATEMENT OF CERTIFICATE

This is to certify that Eyerus Assefa has carried out this project work entitled “**Factors Affecting Timely Completion of Maritime Trade and Logistics Affaires Project (Lto)**” under my supervision. This work is original in nature and it is sufficient for submission as the partial fulfillment for the award of Degree of Masters of Art (MA) in Project Management.

Dr. Dereje Teklemariam (AssociateProfessor)

Signature:  _____

Date: December 31/2021

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LIST OF ABBREVIATIONS

EMAA	Ethiopian Maritime Affairs Authority
ESLSE	Ethiopian Shipping And Logistics Service Enterprise
GDP	Growth Domestic Product
IMO	International Maritime Organization
ICT	Information Communication Technology
KIIs	Key Informant Interviews
LTO	Logistics Transformation Office
MOT	Minister Of Transport
NGOS	Non-Governmental Organizations
GTP-II	Second Growth and Transformation Plan
ETLP	The Ethiopian Trade Logistics Project
FIDIC	The International Federation Of Insurance Companies
WBG	World Bank Group

ABSTRACT

Delay is one of the biggest problems often experienced on construction project sites. The aim of this project is to investigate and identify the main factors affecting timely completion of maritime trade and logistics affairs project. Purposive (non-probability, deliberate) sampling technique was used in this study. Population sample of 109 was used in this work. From the total sample eighty five (85) was deployed and eighty one (81) was responded. Respondents were asked to rank delay factors in a five-point scale range from 1 to 5 based on frequency of occurrence from rarely to greatly often. The data collected from close-ended questions of the questionnaire are analyzed using descriptive data analysis. A structured questionnaire in Likert scale was used in data collection. Twenty eight (28) project delay attributes were identified through detailed literature review. This research categorized the causes of delay under eight main groups of client related, consultant related, contractor related, equipment related, material related, design related, labour related and external related factors and then the data obtained were analysed using the Relative Importance index (RII). Based on RII result, The top ten most influential factors on maritime trade and logistics affairs project were identified as: (1) Unfavorable site condition (RII=0.87), (2) Effect of local community (RII=0.8), (3) Slowness in giving work orders (RII=0.71), (4) Poor decision making process (RII=0.7), (5) Interference owner (RII=0.698), (6) Lack of communication and coordination on client (RII=0.679), (7) lack of communication and misunderstanding (RII=0.669), (8) improper site condition (RII=0.65), (9) slowness in payment preparation (RII=0.64) and (10) Technical problem faced (RII=0.61). The final recommendation from the result that to create favourable site condition, to create awareness to the local community and consultant giving a fast work order is very necessary on this project.

Key Words: *Delay, Delay factors, Project, Project Management, Relative Importance Index (RII), Railway construction project.*

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

The construction industry plays an important role in the growth and development of a country. Throughout the world, the business environment of construction organizations are operating continues to bring a rapid change. The major problem construction industry is facing, are the delays and the level of impact these delays effect the projects to be delivered in a specified time, within allocated budget and expected quality. It is very rare to see that a construction project is completed on time. The construction project usually needs more time extended from one year to several years as per set objectives. There are no any projects in the world. Which don't have any problem and had completed within its set out schedule? Delay on construction project is a universal phenomenal. But the question is its length of time. A project is said to be successful on timely completion. The time required to complete project is often more than the specified time in the contract. Subsequently, time extensions or delay happen due to many reasons such as design changes or errors, economic conditions, resource availability and performance of project parties. project length often serves as a benchmark for assessing the performance of a project and the efficiency of the project organization (*Hammadi & Nawab, 2016*). Time Project delay can be accounted at the beginning from the initial conception of the project to the signing of the contract between the owner and the contractor . Project delays are always measured as expensive to all the parties involved and it has been seen that very often it results in claims, clash and total desertion. In some cases, to the contractor, delay means higher overhead costs because of longer work period, higher material costs through inflation and due to labor cost increases. Therefore, time and cost had parallel relationship which the increasing of the time will make the increasing of the cost. Then, the controlled of time is really important for avoid any loss to the contractor.

Subsequently, the mismanagement of project duration can negatively impact the project progress and result in delayed delivery time, cost and poor quality of works *Gajewska and Ropel (2011)*. conflicting views on the schedule performance of most of the projects with some stakeholders especially the intended users arguing that they are delayed

while the implementers believe that they are on course (The Star, June 2016; The Standard, December 2014). The success of a project can be described as meeting the targets and objectives within the budget, time and quality constraints.

Subsequently the study takes the Ethiopia Trade Logistics Project as a case study. The overall aim of ETLP is to enhance the performance of the Ethio-Djibouti corridor through improvements in operational capacity, efficiency and range of logistics services at the Modjo Dry Port. Thus, the proposed ETLP focuses in physical infrastructure investment under Component One of ETLP in Modjo and supporting feasibility study for Gelafi/Dewale One Stop Boarder Post. Modjo dry port is the key logistics node in the intermodal transport system that is being developed in Ethiopia. This facility will be the focus for the interconnectivity between the rail link to Djibouti and road transportation for distribution and collection of import/export goods within Ethiopia. Integrating rail and road transport from Djibouti to the hinterland through this logistics node would significantly reduce freight cost, operational delays and delivery time. Modjo dry port will also remain the main node in the road transport system linking Ethiopia to the port of Djibouti. Modjo is located at a strategic point in the system and the capacity and efficiency of logistics at this site will have a critical bearing on the performance of the trade logistics system as a whole. Given its proximity to Addis Ababa and the surrounding economy, Modjo is the most important of the logistics nodes in Ethiopia. The project is financed by the World Bank (WB) with USD 150 million loans to be implemented over five years since its effectiveness, 7th July 2017. The project will be an integral element in achieving the Growth and Development Plan of Ethiopia. This project is still in work only 44% which is too much below the schedule. Based on its schedule the project must be finished on after a few mouths. Accordingly, this research study examined factors affecting timely completion of maritime trade and logistics affaire project.

1.2. Statement of the problem

Maritime transport is the backbone of international trade and the global economy. Over 80% of the volume of international trade in goods is carried by sea, and the percentage is even higher for most developing countries. (Symonds, 2012) suggests that one of the challenges faced by the project team is the length of time dedicated to long-term projects. There are however, conflicting views on the schedule performance of most of the projects with some stakeholders especially the intended users arguing that they are delayed while the implementers

believe that they are on course (The Star, June 2016; The Standard, December 2014). Despite the assumption project completion does adhere to its respective timeframe, the inability to complete projects on time and within budget continues to be a chronic problem Worldwide and is worsening (Ahmed, et al., 2002). Subsequently when contextualizing this phenomenon to the Ethiopian context, according to the study conducted by (Hareru & Neeraj, 2016) the reason for such completion date irregularities points to difficulty in financing the project, escalation of material price, ineffective project planning, scheduling or resource management, delay in progress payment and lack of skilled professionals.

Time delay is critical in developing countries where it mostly exceeds 100 % of its estimated time while constructing a project (Muhammad A. et. al., 2017). According to Tsegay and Luo (2017) the causes of delay are corruption, unavailability of utilities at site, inflation/price increases in materials, lack of quality materials, late design and design documents, slow delivery of materials, late in approving and receiving of complete project work, poor site management and performance, late release budget/funds, and ineffective project planning and scheduling. Despite its growth and high share of contribution to the overall national economy of Ethiopia, several challenges are being noticed in the construction sector that requires immediate actions. Tadesse, Dakhli & Lafha (2016) states that delay of implementation is one of the significant problems in Ethiopian construction industry that needs immediate actions.. Subsequently, exceeding beyond the Designed completion date of a project, forking up large sums of delay payment as well as poor contract administration are results of above factors. The causes of project delay may vary for specific project from project to project Therefore further study can be also undertaken to investigate major factors affecting timely accomplishment of the project Therefore, this study tried to identify the most important and frequent factors affecting timely completion of maritime trade and logistics affaires project causes and it also aimed to provide an input for the management of the company to take lessons from this project and then take an appropriate measure for the future dry port construction projects.

1.3. Research Question

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

- 1) What does the existing practices of maritime trade and logistics affairs project?
- 2) What are the real main factors affecting timely completion of maritime trade and logistics affairs project? And the top ten factors affecting timely completion of maritime trade and logistics affairs project?

1.4. Research Objective

1.4.1. General objective

The overall aim of the study is to identify factors affecting timely completion of maritime trade and logistics affairs project and, hence, draw a significant and feasible suggestion based on the findings.

1.4.2. Specific Objectives

Specifically the study tries to address the following key research objectives:

- 1) To study existing practices of maritime trade and logistics affairs project?
- 2) To identify the delay factors that currently exist in Ethiopian maritime trade and logistics affairs project. And the most significant delay causing factors that affect Ethiopian maritime trade and logistics affairs project.

1.5. Significance of the Study

This research will do for the purpose of filling knowledge gap and have several of significant which consider the parties that will involve in construction. Particularly among the main project players: contractors, client and consultants. These significant include: to study factors affecting timely completion of maritime trade and logistics affairs project. The result of the study will be the guideline to the parties that involve, so that it will avoid any source that will happen in their project; To further knowledge generation, to suggest several factors that will avoid the delay in another project, To pave the way for further research. The result of the study will give good information to the involve parties to prepare fulltime work and responsibilities to ensure every activity will be done according to the plan.

1.6. Scope and limitation

The study focuses on factors affecting timely completion of maritime trade and logistics affairs project. To identify factors that caused the delay of the project is very necessary to take any measures. As the world's population continues to grow, particularly in developing countries, low-cost and efficient maritime transport has an essential role to play in growth and sustainable development. The Government of Ethiopia (GoE) is working to improve trade logistics to connect Ethiopia to the global value chain, produce more and create better jobs, greater opportunities for domestic suppliers, increased exports, and higher productivity. This project is very necessary and important for our country to develop our economic. This Project is to enhance the performance of the Ethio-Djibouti corridor through improvements in operational capacity, efficiency, and range of logistics services at the Modjo Dry Port. This study will cover Ethiopian maritime trade and logistics affairs authority and their stakeholder's.

1.7. Limitations of the Study

The study solely focused on the factors affecting timely completion of maritime trade and logistics affairs project, the result can't be generalized as it doesn't include the related project being carried out throughout the country. The population of the respondents for this study involves only the manager, contractors and consultants' of companies that are involved in the maritime trade and logistics affairs project.

1.8. Organization of the Research Report

Structurally, the paper will be composed of five chapters. The first chapter presents introductory materials, which includes background of the study, statement of the problem, research questions, research objective, significances of the study, the scope of the study, limitations of the study and ethical considerations. The second chapter presents literature review with general descriptions by different researchers on causes and effect of construction delay. The third Chapter discusses about research methodology. The fourth chapter focuses on results and discussion of the research findings. The fifth chapter presents conclusions and recommendations of the study.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. Theoretical Review

This part of the thesis focuses on theoretical approaches to examine the meaning, cause and factors of timely completion construction projects. Furthermore, related studies in Ethiopia and other developing countries and their experience related factors of timely completion of projects will be viewed.

2.1.1 Project

A project is defined as a sequence of tasks that must be completed to attain a certain outcome. According to the Project Management Institute (PMI), the term Project refers to "any temporary endeavor with a definite beginning and end". Project is combination of human and non-human resources pulled together in a temporary organization to achieve a specified purpose PMI (2017). As defined in a Guide to the Project Management Body of Knowledge (PMI, 2001), a project is a temporary endeavor embraced to form a different product or service. Temporary implies that every project has a definite starting and a definite ending. Unique means that the item or service is diverse in few recognizing way from all other items or services.

The success of a project is measured in terms of three important criteria- time, cost and scope. Quality refers to the quality standard of the deliverables or products from the project and Achieving customer satisfaction. Cost refers the financial resource approved to the project, Including all budgets and expenses to deliver the project. Time or schedule refers to a time frame or deadline date within which the project must be completed. Time is an interesting resource in that it can't be inventoried. It is consumed whether it is used or not. Therefore, the objective of the project manager is to use the future time allotted to the project in the most effective and productive ways possible. Once a project has begun, the prime resource available to the project manager to keep the project on schedule or get it back on schedule is time(Wysocki,2014). The third constraint, scope is defined as what a project is trying to achieve and accomplish. It includes all the works involved in delivering the project outcome and the process used to produce. These three constraints are significant in every project and they are described as project triple constraints (Brewer and Dittman, 2010). Generally, a project is said to be successful when

is completed within a stated cost or budget, on time and meeting the project objectives or the scope. When these scopes of a project are completed to meet the project objectives then the project quality is said to have been achieved (*JIA*, 2015). According to the project management handbook, a project has four processes: are initiations to planning, planning to controlling, controlling to closing. Projects are attempted to fulfill targets by creating deliverables. An objective is defined as result toward which work is to be coordinated, a key position to be achieved, a purpose to be accomplished, a result to be gotten, an item to be produced, or a service to be performed. A deliverable is defined as any unique and verifiable product, result, or capability to perform a service that is needed to be produced to complete a process, phase, or project. Deliverables may be tangible or intangible.

2.1.2 Project Management

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the suitable application and integration of the project management processes identified for the project. Project management empowers organizations to execute projects successfully and efficiently. (*PMI*, 2017).

Even minimal line management support will still cause project management to struggle. Therefore, it is logical to consider that lack of support to project manager from senior management/project sponsor for one or other reasons will be a big impediment leading to project failure and delay. Project manager is not only responsible for cost and time management but also for managing project quality. For example, *Kerzner* (2009) states that, project manager has the ultimate responsibility for quality management on the project. Quality management has equal priority with cost and schedule management. The project manager is supposed to have detail information about challenges and issues of the projects at micro level more than any other person in the project environment. Therefore, they are the right persons to explore about issues of the project. According to the project management handbook, a project has four processes: are initiations to planning, planning to controlling, controlling to closing.

The project manager is responsible to manage relationships associated with the project both internally and externally. Internally the relationship with the people in the company who are members of the project team, the boss, the peers and supporting departments., Externally with

customer's people associated with the project, as well as any subcontractors and vendors who may be associated with the project. Regarding budget, the project manager is responsible for managing his project budget to achieve on-time and technically sound result within the budget as per descriptions of *Michael*,(2010) as cited in *JIA*(2015).

2.1.3. Project Management Knowledge Area

PMI (2017) describes that, project management consists of ten areas of knowledge and that a project has life cycle managed by executing a series of project management activities known as project management processes. Every project management process produces one or more outputs from one or more inputs by using appropriate project management tools and techniques. The output can be a deliverable or an outcome. Outcomes are an end result of a process. Project management processes apply globally across industries. Project management processes are logically linked by the outputs they produce. Processes may contain overlapping activities that occur throughout the project. The output of one process generally results in either an input to another process, or a deliverable of the project or project phase.

PMI (2017) defines project management as the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the project management processes for the project. It enables organizations to execute projects effectively and efficiently. Delay of project implementation is defined as the late completion of work compared to the planned schedule (*Bentator&Thumann,2003*).

The key concepts of project schedule management are discussed in *PMI* (2017) as follows; project scheduling provides a detailed plan that represents how and when the project will deliver the products, services and results defined in the project scope and serves as a tool for communication, managing stakeholder's expectations and as base for performance reporting. In line with this, among the ten knowledge areas described by *PMI* (2017), schedule management knowledge area is relevant to the topic of processes involved in achieving on schedule project completion. *PMI* (2017) describes project management knowledge area as an identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, tools and techniques.

2.1.4. Project time

To complete a project on time and on budget, each phase of the design and implementation process, from the feasibility assessment to the contractor handing over the finished project to the client, must be meticulously planned to avoid delays, disagreements, and unexpected additional cost. To complete a project on time and on budget, each phase of the design and implementation process, from the feasibility assessment to the contractor handing over the finished project to the client, must be meticulously planned to avoid delays, disagreements, and unexpected additional costs. FIDIC is an acronym for the International Federation of Insurance Companies (*FIDIC*, 2005).

2.1.5. Project Time management

Project time management is the effective and efficient use of time to allow project execution, which starts with project planning, scheduling and deadline monitoring. The processes that must be followed to ensure that the project is finished on time are referred to as project time management (*Jemal*, 2015). The following are brief summaries of the major project time management processes as described by the *PMI*, 2001 .Activity definition; determining the precise tasks that must be completed in order to achieve the various project deliverables. Activity sequencing; Interactivity dependencies must be identified and recorded. Activity duration estimating; calculating the number of work periods required to complete individual activities. Schedule development; analyzing activity sequences, activity durations, and resources requirements to create the project schedule. Schedule control; controlling changes to the project schedule.

2.2. Empirical review

Empirical finding are one of the important components of the literature review in the research study. This type of literature contribute a lot to the effectiveness of the investigation under study by revealing the gap what the researcher wants to find out and how the researcher under take the study. Several researches have been under taken on the topic of delay of construction projects and problems in managements of project schedules.

Werku&Jha (2016) also carried out a research to investigate causes of delay in Ethiopian construction industries and have stated that, delays in construction projects are the major causes

of project failure. The study identified the factors of the findings show that the main critical factors that cause construction delays in Ethiopia are: (1) Difficulties in financing project by a contractor; (2) Escalation of the materials price; (3) Ineffective project planning; (4) Problem in scheduling or resource management; (5) Delay in progress payments for completed works, (6) Lack of skilled professionals in the field of construction management (7) Fluctuating labor availability season to season/Seasonal labors availability.

Owner related factor Factors including finance and payment of completed work, owner interference, slow decision making and unrealistic contract duration imposed by owners. Owners may be influenced by the following factors, according to *Ahmed et al.*(2003) and *Alaghbari* (2005). Contract modifications (replacement and inclusion of new work to the project, as well as improvements in specifications) and financial difficulties due to a lack of working experience, inefficient decision-making, inadequate communication with vendors, and contract modifications (replacement and addition of new work to the project, as well as adjustments in specifications) (delayed payments, financial difficulties, and economic problems).

A research was undertaken by *Tadesse, Dakhli & Lafha* (2016) to assess performance and challenges of Ethiopian construction industry by using both literature reviews and questionnaire methods. The research also revealed that there are similarities of challenges of construction projects delay in most of developing countries. The research demonstrated that the level of construction project management practice in these countries in terms of adapting general project management procedures, project management functions, tools & techniques to be unsatisfactory. Particularly the level of practice in terms of safety, risk and time management was found to be very low.

Tadewos & patel (2018) indicated that, the influential causes of delay investigated are corruption, unavailability of utilities at site, inflation/price increases in materials, lack of quality materials, late design and design documents, slow delivery of materials, late in approving and receiving of complete project work, poor site management and perform, late release budget/funds, and ineffective project planning and scheduling. *Zidan and Andersen* (2017) studied 10 universal delay factors in construction project through an intensive systematic literature study. These top 10 universal delay factors were: design changes during

construction/change orders; delays in payment of contractor(s); poor planning and scheduling; poor site management and supervision; incomplete or improper design; inadequate contractor experience/building methods and approaches; contractor's financial difficulties; sponsor/owner/client's financial difficulties; resources shortage (human resources, machinery, equipment); and poor labor productivity and shortage of skills.

Koshe & Jha (2016) studied causes of delay in construction of Ethiopia. They have identified 88 delay causing factors under eight broad categories namely: client related, consultant/supervisor related, contractor related, designer related, labor related, material related, Equipment related, and external related.

2.3. Conceptual Framework

A conceptual framework is an analytical tool that is used to get a comprehensive understanding of a phenomenon. Given the theoretical as well as empirical literature review, the following conceptual framework has been developed. Subsequently, project delay is a prominent denominator that either impact project negatively or positively depending on its completion time against its envisaged duration. The investigation will focus on how project delays impacts management control and quality.

A conceptual framework is an analytical tool that is used to get a comprehensive understanding of a phenomenon. It can be used in different fields of work and is most commonly used to visually explain the key concepts or variables and the relationships between them that need to be studied. It is a visual representation that helps to illustrate the expected relationship between cause and effect in a financial context. It is also called a Conceptual Model or research model. Different variables and the assumed relationships between those variables are included in the model and reflect the expectations.

A Conceptual Framework is a tool that is used before to a study. This makes a Conceptual Framework an analytical tool. It is used to make conceptual distinctions and bring together different ideas. Strong Conceptual Frameworks lead to actual realization of the intended objective. The aim of this section is to summarize the idea about past literature and to bring out the contributions for this study area. Thus, this part starts with the idea generated and the contribution follows. The general idea from the past literature shows that there is a relationship between delay causing factors and construction delay. The relationship between

construction delay and delay causing factors can be conceptualized at a fairly general level. project is said to be successful if it is completed on schedule, within the budget and in conformance with predetermined performance specifications (*Ioana et.al, 2015; Paul, 2008; Smith, 2007; Lewis, 2001; APM, 1995, Pinto and Slevin, 1988 and Gaddis, 1959*). This implies that project success is pegged on whether or not these parameters are met. From this it is too plain to see that project success entails both effectiveness and efficiency.

Variable Specifications

Model specification refers to the determination of which independent variables should be included in or excluded from a regression equation. ... A multiple regression model is, in fact, a theoretical statement about the causal relationship between one or more independent variables and a dependent variable.

Dependent Variables

It is the variable being tested and measured in an experiment, and is 'dependent' on the independent variable. Its value depends on changes in the independent variable. The dependent variable responds to the independent variable. It is called dependent because it "depends" on the independent variable. The dependent variable was specified as the timely completion of project, which was measured on the basis of binary measurement that was set to a value.

Independent Variables

An independent variable is exactly what it sounds like. It is a variable that stands alone and isn't changed by the other variables you are trying to measure. It's a variable value is independent of other variables in your study. The variables representing owner related, consultant/supervisor related, contractor related, designer related, labor related, material related equipment related, and external related factors. To which the variable measurement was set to a value of 1 if its statement was strongly disagreed and to 5 if it was strongly agreed.

The conceptual framework of the study was developed from the above literature review taking into consideration different authors findings (*Koshe & Jha, 2016*). The study was guided by this conceptual framework.

1. owner related factors including finance and payment of completed work, owner interference, slow decision making, and unrealistic contract duration imposed by owners.

2. Contractor related factors including site management, improper planning inadequate contractor experience, mistake during construction, improper method and delays caused by subcontractors. Delays caused by sub-contractors are included among the contractor's factors because the latter is fully responsible for the delays caused by his sub-contractors.
3. Consultant related factors include contract management, preparation and approval of drawings, quality assurance/control and long waiting time for approval of tests and inspection.
- 4 External factors include weather conditions, changes in regulations, problems with societies and site conditions.
- 5 designers related factors.
- 6 Material factor including quality and shortage.
- 7 Labor factor include labor supply and labor productivity.
- 8 Equipment factors include equipment Availability and failure

Independent Variable (Factors of delay)

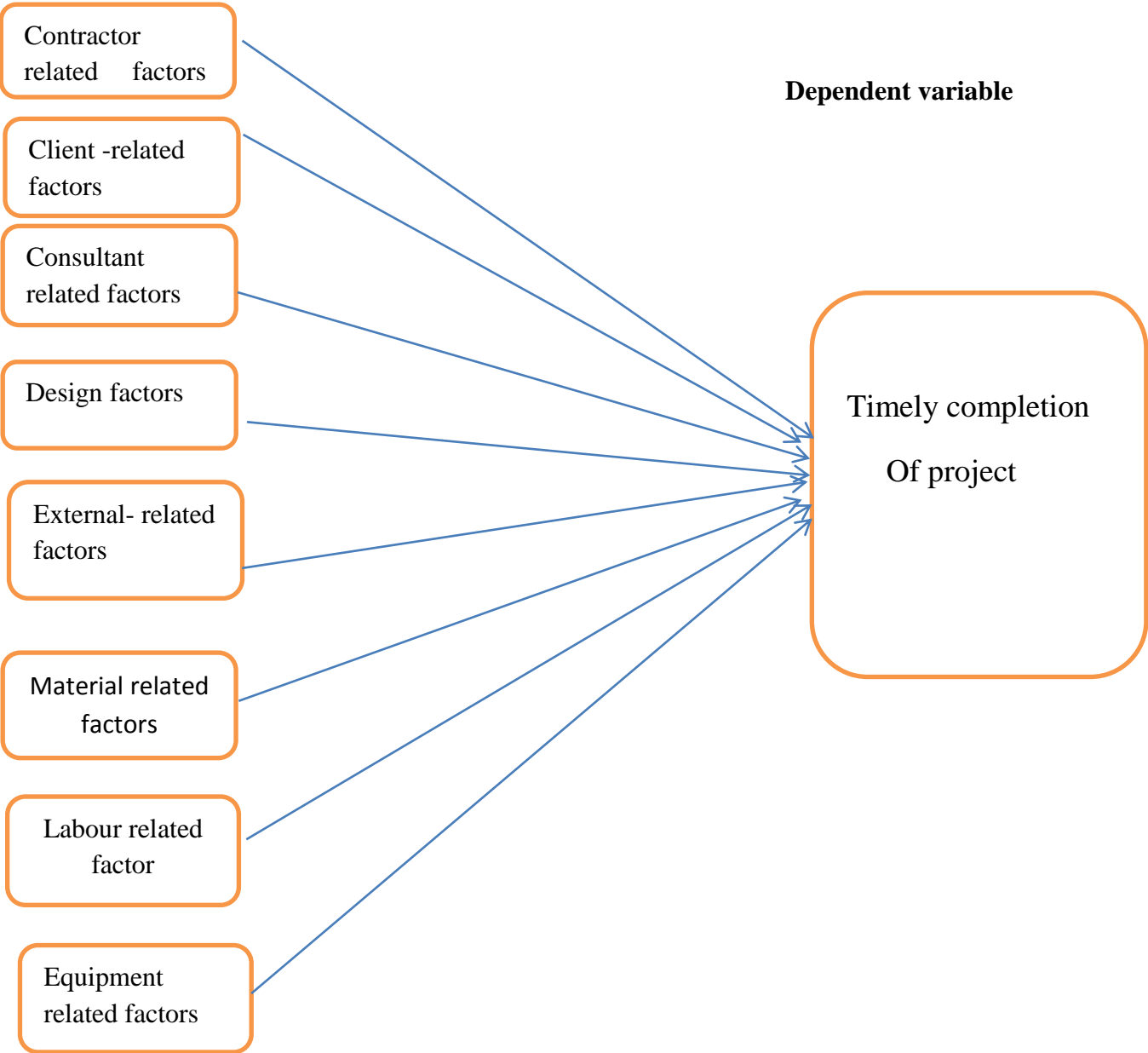


Figure 1: Conceptual framework of factors of timely completion of project

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Research Approach and Design

This chapter discussed the research design and approach which have been used in the study to specify the data collection method, types of research sampling method, and how to use primary and secondary data decision making.

3.1.1 Research Approach

As mentioned in the research objectives this study tried to identify factors affecting timely completion of maritime trade and logistics affair project. The research approach used qualitative and quantitative or mixed approach because of its more reliable. The mixed approach method includes both collecting and analyzing qualitative and quantitative data.

3.2 Data Type and sources

To make the study complete and meaningful both primary and secondary data collection method was used to collect insight of project manager and workers, factors affecting timely completion of maritime trade and logistics affaires project .

3.2.1 Primary data type and sources

The primary data was collected through questionnaires and interview. The questionnaires were hand delivered to respondents and collected same wise after being filled. Interview was conducted only project manager and staffs who were working in project management department.

3.2.2 Secondary data type and sources

The required information for the research data was not be fully available from primary data source, in this regard secondary data type and sources, The secondary data used in this research are information's gathered through a literature review regarding delays in construction project. Literature reviews was carried out to enhance the understanding of theory regarding the research problem. The materials for literature reviews are such as books, articles,

magazines, internet, journals, documents and other's research papers. The information, which is relevant, was used as a benchmark against primary data collected to support the research.

3.3 Target population and Sample

3.3.1 Target population

The target population of this study is the major stakeholders of the maritime trade and logistics affaire project such as client, engineers and consultant on the project.

3.3.2 Sampling Techniques

In this study, respondents were selected based on their experience in maritime trade and logistics affair authority experience, knowledge and involvement. Purposive (non-probability, deliberate) sampling was used for selecting samples within the group of client, consultants and engineers. This method is chosen because of the geographical distribution of the involved members in the project are scatted and small number of study population under the client and worker side. *William* (2005), indicates the importance of purposive sampling method in allowing the researcher to get information from a sample of the population that one knows most about the subject matter.

3.4 Sample size

This study applied the simplified formula provided by Yamane, (1967) to determine the required sample size at 95% confidence level, degree of variability = 0.05. The total population of the study is the employers specifically involved in maritime trade and logistics affairs project in all major stakeholders. For the client, the total population who involved directly in maritime trade and logistics is 63, for engineer's side permanent employers and 27 for the consultant side are 19. The total population for this study becomes 109.

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

Where:

n = Desired sample size

N =Total population size (109)

e = Accepted error limit (0.05) on the basis of 95 percent degrees of confidences put into decimal form

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

$$n = \frac{109}{1 + 109(0,05)^2}$$

$$n = \sim 85$$

Table 1 Sample size summary of each team

No	Stakeholders responding in project 6	Total employees	Sample size of the study
1	Client	63	41
2	Engineers	27	25
3	Consultant	19	19

These 85 samples distributed for client, engineers and consultant that work on maritime trade and logistics affaires project.

3.5 Data collection

The data used in this study were gathered from the main parties in the construction (client, engineers and consultants) who participated in the maritime trade and logistics affaires project using questionnaire and document review. Questions used in the questionnaire are closed ended (based on likert scale). Document review was also employed to collect relevant secondary data from secondary sources (project completion reports, books, journals, reports, contract documents).

3.6 Questionnaire Methodology

The questions are designed related to the research objectives especially on the causes and effects of construction delays. The survey is designed based to use Likert Scale on the objective of the study to find out the factors of maritime trade and logistics affaires project. The Survey was framed in such a way that the personal view of different people involved in maritime trade and logistics affaires projects is collected and analyzed. The questionnaire basically consists of two sections as detailed below.

1. Respondent Background - This is to collect the basic information of the respondent.
2. Factors of Delays - This is used to collect the data on different factors of the delays happened in that particular project.

The questionnaire is based on Likert Scale of five ordinal measures from one (1) to five (5) according to level contributing. According to *John F.* (2001), Likert Scale is easier to use for respondent to express their level of opinion.

3.7 Data analysis

The data analysis is determined to establish the relative importance of various factors that contribute to factors on project delay. Analysis of data consists of calculating the Relative Importance Index (RII) and Ranking of factors in each category based on the Relative Importance Index (RII).

$$RII (100\%) = \frac{1n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5}{5(n_1 + n_2 + n_3 + n_4 + n_5)} * 100 \dots \dots \dots \text{Equation 3.1.}$$

Where,

RII = Relative Importance Index,

n1, n2, n3, n4, n5 = Number of respondents answer each factor

1, 2, 3, 4, 5 = weight given for each factor (ranging from 1 to 5),

The importance indices were calculated for all delay factors and the delay causes were ranked accordingly. In order to identify how project delay can be mitigated, it is important to identify the responsible party. Therefore, the responsibility of the delay causes is illustrated in the factor.

3.8 Data Validity & Reliability

To ensure the quality of the research and make the findings credible; due care is given to both validity and reliability issues of the data, the research process in general as well as the research output. To check the questionnaire's validity selected experts invited to comment on the questionnaire as a pre-assessment means. To check the questionnaire item's internal consistency its reliability was checked by the Cronbach's alpha test coefficient using SPSS software and the

gained result was .782 which is between 0.70-0.79 result considered as “acceptable” in social science researches.

3.9 Variable measurements

Ordinal scales were used in this study. Ordinal scale is a ranking or rating system that uses integers in ascending or descending order to rank or rate data. The numerical value assigned to the degree of influence did not imply that the intervals between scales are equal, nor did it imply absolute quantities. They're all stickers with numbers on them. The factors were rated on a scale of 1 to 5, with higher scores indicating strong agreement and lower scores indicating strong disagreement. On a 5-point Likert scale, respondents demonstrated their degree of agreement with each evaluative argument regarding cause of delay on the project. The researcher did this analysis by using criterion validity measurement method to check validity of the instrument before distributing the questionnaires. This analysis used the following format, as shown in table 5, based on the Likert scale. Although the item scores are discrete, a Likert scale is considered to be an interval scale.

Table 2 variable measurement using Likert's scale

Item	Scale
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly disagree	1

3.10. Ethical Considerations

As researchers anticipate data collection, they need to respect the participants and the sites for the research. All participants will be assured of anonymity and confidentiality. Efforts will be done to overcome ethical concerns of the participant due to sensitivity of the issue under study by careful designing and structuring the questionnaire. Respecting participant's wish for anonymity and confidentiality, honesty and avoiding deceptions and clear explanation about the purpose and usefulness of the study and by excluding names and other identifying numbers from the questionnaire in order to assure confidentiality of information and assure the respondent not participating in the research couldn't cause any harm.

CHAPTER FOURE

4 DATA ANALYSIS AND PRESENTATION

4.1 Introduction

The results and discussion below is devised in three parts corresponding to the research questions and also the sections of the questionnaire. These divisions can help tackle one question at a time. The first part of the results and discussion contains the findings of the questions directed towards identifying the importance of delay factors and raking in the level of their severity. The objective this research to identify the factors affecting maritime trade and logistics affairs project and also to identify the main factor delay of this project to get this A total of 28 Potential factors of delay were selected from previous studies and grouped in eight categories: client Related factors, contractor related factors, consultant related factors, material related factors, Labor related factors, equipment related factors, design related factors and external factors.

Thus, respondents were asked to rank delay causes factors in a five-point scale range from 1 to 5 based on frequency of occurrence from rarely to greatly often. The data collected from close-ended questions of the questionnaire are analyzed using descriptive data analysis. Appropriate statistical results are presented in a tabular format followed by discussions and analyzed using the Relative Importance Index (RII) to rank factors.

4.2 Questionnaire Response Rate

Questionnaires with close ended questions were designed and distributed for the research purpose. Then the questionnaire is distributed to the major stakeholders according there proportion. The questionnaire was prepared and circulated to three contracting groups, namely engineers, clients, and consultants, who are currently working on the maritime tread and logistics affairs both in person and through technical means. The project owners,

For engineers=A total of 25 questionnaires were sent out to the engineers, and 23 of them were obtained. This accounts for 29.4% of the total number of questionnaires sent to engineers.

For consultant=A total of 19 questionnaires were sent out to the consultants, and 19 of them were obtained. This accounts for 22.4% of the total number of questionnaires sent to consultants.

Table 3 : Number and percentage of questionnaires distributed, returned and response Rate

Contractual Parties	Questionnaire Distributed	Questionnaire Response	Response Rate from total number
Client	41	39	45.88%
Engineers	25	23	27.01%
Consultant	19	19	22.4%
Total	85	81	95%

4.3 Respondents' General Information

Table 4 Respondents' General Information

Respondents Gender		
Gender	Frequency	Percentage (%)
Male	58	72%
Female	23	28%
Respondent's educational background		
Educational Background	Frequency	Percentage (%)
BA/B.Sc	15	19%
MA/M.Sc	53	65%
PHD	13	16%
Respondent's educational field of specialization		
Field of Specialization	Frequency	Percentage (%)
Engineering	51	63%
Law	8	10%
Business	18	22%
Other	4	5%
Respondent's years of experience		
Years of Work Experience	Frequency	Percentage (%)
0-5 year	8	10%
6-10 year	42	52%
11-15 year	28	34%
Above 15	3	4%

In the above table 4. 3 From the total of 81 respondents 58(72%) were males and 23(28%) were females. From the result we showed that the total population of the female's involved maritime trade and logistics affaires project is much more less than the male. With regard to the educational status of respondents, among those participated in the survey 15(19%) of the respondents are first Degree holders, 53(65%) of the respondents are Master's Degree holders

and 13(16%) of the respondents are PHD Degree holders. From this result, most of the respondents have master's degree.

Looking into the respondents' educational field of specialization; among the total respondents 51(63%) are Engineers, 18(22%) Business related, 8(10%) Law and the rest 4(5%) are categorized under other subject areas. Looking at the respondents' work experience, out of the total 81 questionnaire filled and returned, 8 (10%) of respondents have 0 to 5 years of experience, 42 (52%) with an experience between 6 to 10 years, 28(34%) with an experience between 11 to 15 and the rest 3 (4%) respondents have a work experience of more than 15 years.

4.4 Respondents' reaction and Relative importance index for the factors of Maritime tread and logistics affair project

4.4.1 Respondents reaction on the factors of delay

Table 5 : respondent's reaction on factors of delay

Factors of delay		1	2	3	4	5
Contractor related factors	Frequent change orders	3(4%)	40(49%)	28(35%)	10(12%)	0
	Lack of communication and misunderstanding	0	4(5%)	47(58%)	28(35%)	2(2%)
	Poor site management	12(15%)	32(39%)	28(35%)	9(11%)	0
	Poor planning and scheduling	13(16%)	31(38%)	27(33%)	10(13%)	0
	improper site condition	0	21(26%)	20(25%)	36(44%)	4(5%)
Consultant related factors	Slowness in giving work orders	0	7(9%)	24(29%)	47(58%)	3(4%)
	Less performance of consultant	32(39%)	37(46%)	9(11%)	3(4%)	0
	Inadequate project time estimation	7(9%)	23(28%)	37(46%)	11(13%)	3(4%)
	Low communication	9(11%)	17(21%)	43(53%)	9(11%)	3(4%)
	Slowness in payment preparation	0	18(22%)	31(38%)	29(36%)	3(4%)
	Interference owner	0	7(9%)	32(39%)	37(46%)	5(6%)

Client related factors	Un experienced management	17(21%)	31(38%)	29(36%)	4(5%)	0
	Poor decision making process	2(2%)	12(15%)	27(33%)	26(32)	15(18%)
Client related factors	Lack communication and coordination	0	9(11%)	35(43%)	33(41%)	4(5%)
	Unplanned funding of project	20(25%)	32(39%)	21(26%)	8(10%)	0
	Increase in project volume	0	12(15%)	23(28%)	33(41%)	3(4%)
Labour and equipment related	less motivation and morale	34(42%)	27(33%)	20(25%)	0	0
	Equipment availability and failure	22(27%)	34(42%)	25(30%)	0	0
Material related factors	Shortage of construction material	12(15%)	24(29%)	37(46%)	8(10%)	0
	Using unacceptable material for Construction	37(46%)	33(41%)	11(14%)	0	0
External-related factors	Unpredictable weather conditions	21(26%)	27(33%)	33(41%)	0	0
	Lack government control	23(53%)	31(38%)	23(53%)	4(5%)	0
	Unsuitable site conditions (location soil, etc.)	27(33%)	38(47%)	16(20%)	0	0
	Effect of local community	0	0	23(28%)	31(38%)	27(33%)
	Unfavorable site condition	0	0	7(9%)	43(53%)	31(38%)
	Technical problem faced	0	13(16%)	49(60%)	19(23%)	0
Design related	Lack of technical knowledge	27(33%)	24(29%)	30(37%)	0	0
	Mistakes in design documents	19(23%)	34(42%)	28(35%)S	0	0

Table 8. Shows the respondent's reaction on causes of delay. The sample size consist a total of 81 respondents.

For contractors related factors

Out of which 3(4%) are strongly disagree, 40(49%) are disagree, 28(34%) neutral, 10(12%) agree and 0(0%) are strongly agree for the causes of” Frequent change orders“. Out of which 0(0%) are strongly disagree, 4(5%) disagree, 47(58%) neutral, 28(35%) agree and 2(2%) are strongly agree for the causes of” Lack of communication and misunderstanding “.12(15%) are strongly disagree, 32(39%) are disagree, 28(35%) neutral, 9(11%) agree and 0(0%) are strongly agree for the causes of” Poor site management “.13(16%) are strongly disagree, 31(38%) are disagree,27(33%) neutral , 10(13%) agree and 0(0%)strongly agree for the causes of ” Poor planning and scheduling“.0(0%) are strongly disagree, 21(26%) are disagree,20(25%) neutral , 36(44%) agree and4(5%) are strongly agree for the causes of ” improper site condition“.

For Consultant related factors

Out of which 0(0%) are strongly disagree, 7(9%) are disagree, 24(29%) neutral, 47(58%) agree and 3(4%) are strongly agree for the causes of” Slowness in giving work order“.32(39%) are strongly disagree, 37(46%) are disagree , 9(11%) neutral,3(4%) agree and 0(0%)strongly agree for the Factors of” Less performance of consultant “.7(9%) are strongly disagree, 23(28%) are disagree,37(46%) neutral, 11(13%) agree and 3(4%) are strongly agree for the causes of” Inadequate project time estimation “.9(11%) are strongly disagree, 17(21%) are disagree, 43(53%) neutral, 9(11%) agree and 3(4%) are strongly agree for the causes of” Low communication “.0(0%) are strongly disagree, 18(22%) are disagree, 31(38%) neutral, 29(36%) agree and 3(4%) are strongly agree for the causes of” Slowness in payment preparation“.

For Client -related factors

Out of which 0(0%) are strongly disagree, 7(9%) are disagree, 32(39%) neutral, 37(49%) agree and 5(6%) are strongly agree for the causes of” Interference owner “.17(21%) are strongly disagree, 31(38%) are disagree, 29(36%) neutral, 4(5%) agree and 0(0%) are strongly agree for the causes of” Un experienced management “.2(2%) are strongly disagree, 12(15%) are disagree, 27(33%) neutral, 26(32%) agree and 15(18%) are strongly agree for the causes of” Poor decision making process “.0(0%) are strongly disagree, 9(11%) disagree, 35(43%) neutral, 33(41%) agree and 4(5%) are strongly agree for the causes of” Lack communication and coordination “.20(25%) are strongly disagree, 32(39%) are disagree, 21(26%) neutral, 8(10%) agree and 0(0%) are strongly agree for the causes of” Unplanned

funding of project “,0(0%) are strongly disagree, 12(15%) are disagree, 23(28%) neutral, 33(41%) agree and 3(4%) are strongly agree for the causes of” Increase in project volume “.

For Labor and equipment related factors

Out of which 34(42%) are strongly disagree, 27(33%) are disagree, 20(25%) neutral, 0(0%) agree and 0(0%) are strongly agree for the causes of” less motivation and morale “.22(27%) are strongly disagree, 34(42%) disagree, 25(30%) neutral, 0(0%) agree and 0(0%) are strongly agree for the causes of” Equipment availability and failure “.

For Material related factors

Out of which 12(15%) are strongly disagree, 24(29%) are disagree, 37(46%) neutral, 8(10%) agree and 0(0%) are strongly agree for the causes of” Shortage of construction material “.37(46%) are strongly disagree, 33(41%) are disagree ,11 (14%) neutral, 0(0%) agree and 0(0%) are strongly agree for the causes of” Using unacceptable material for construction “.

For External- related factors

Out of which 21(26%) are strongly disagree and disagree, 27(33%) neutral, 33(41%) neutral, 0(0%) agree and strongly agree for the causes of” Unpredictable weather conditions “.23(53%) are strongly disagree, 31(38%) are disagree, 23(53%) neutral, 4(5%) agree and 0(0%) are strongly agree for the causes of” Lack government control “.27(33%) are strongly disagree, 38(47%) are disagree, 16(20%) neutral, 0(0%) agree and are strongly agree for the causes of” Unsuitable site conditions (location soil, etc.) “.0(0%) are strongly disagree, 0(0%) are disagree, 23(28%) neutral, 31(38%) agree and 27(33%) are strongly agree for the causes of” Effect of local community”. 0(0%) are strongly disagree and disagree, 7(9%) neutral, 43(53%) agree, 31(38%) strong agree and strongly of” Unfavorable site condition”.

For Design related factors

Out of which 0(0%) are strongly disagree, 13(16%) are disagree, 49(60%) neutral, 19(23%) agree and 0(0%) are strongly agree for the causes of” Technical problem faced “.27(33%) are strongly disagree, 24(29%) are disagree, 30(37%) neutral, 0(0%) agree and strongly agree for the causes of” Lack of technical knowledge “.19(23%) are strongly disagree, 34(42%) are disagree, 28(35%) neutral, 0(0%) agree and strongly agree for the causes of” Mistakes in design documents “.

4.4.2 The Relative important Index for the causes of delay

The construction delay is universally evident reality and is counted as a common problem in construction projects. Factors affect Timely completion of project. A total of 28 delay causing factors were identified and classified in to eight factor groups: client related factors, contractor related factors, and consultant related factors, material factor, equipment factor, designing factors, lab our related factors and external factors.

Table 6 : RII and ranking of Contractor factors

Factors	RII	Rank
Frequent change orders	0.51	3
Lack of communication and misunderstanding	0.669	1
Poor site management	0.480	5
Poor planning and scheduling	0.483	4
improper site condition	0.65	2

As shown on the above table 9. the most influential and highly ranked contractor related factors, are Lack of communication and misunderstanding with other parties (RII=0.669, improper site condition (RII=0.65), Frequent change orders (RII=0.51), Poor planning and scheduling (RII=0.483) and Poor site management (RII=0.48).

Table 7 : RII and ranking of Consultant related delay causes

Factors	RII	Rank
Slowness in giving work orders	0.71	1
Less performance of consultant	0.35	4
Inadequate project time estimation	0.55	3
Low communication	0.55	3
Slowness in payment preparation	0.64	2

As shown on the table 10. below, the most influential and highly ranked consultant related factors in Ethiopian maritime tread and logistics affair project , are Slowness in giving work orders (RII=0.71), Slowness in payment preparation (RII=0.64), Low communication and Inadequate project time estimation (RII=0.55), Less performance of consultant (RII=0.35).

Tsegay and H. Luo (2017) identified top four consultant related causes. These are late in approving and receiving of complete work, Poor communication and coordination, Poor supervision and late testing & inspection and Inadequate experience of consultant. Similarly *Eyasu Tolera*(2018), identified the top five consultant related factors. These are Weak in follow up the planned work schedule by the contractor , Inadequate planning and scheduling of work by contractor , Shortage of contractors materials on site , Poor site management and supervision by contractors and Poor project manager skills .

Table 8 : RII and ranking of Client related factors

Factors	RII	Rank
Interference owner	0.698	2
Un experienced management	0.449	5
Poor decision making process	0.7	1
Lack communication and coordination	0.679	3
Unplanned funding of project	0.441	6
Increase in project volume	0.592	4

As shown on the above table 11. The most influential and highly ranked client related factors in Ethiopian maritime trade and logistics affairs project, are Poor decision making process (RII=0.7), (RII=0.7), Interference owner (RII=0.698), Lack communication and coordination (RII=0.679) , Increase in project volume (RII=0.592), Un experienced management(RII=0.449) and Unplanned funding of project(RII=0.441).

Tsegay and H. Luo (2017) identified improper project feasibility study the first , late in site delivery for construction work and design the second lack of on time finance and payments the third i interference on execution of work the fourth slowness in decision making the fifth and Poor communication and coordination the sixth most important client related factors

Table 9 : RII and ranking of Labor and equipment related factors

Factors	RII	Rank
less motivation and morale	0.365	2
Equipment availability and failure	0.40	1

As shown on the above table 12. the relative importance index and highly ranked labor and equipment related factors in the Ethiopian maritime trade and logistics affairs project, are Equipment availability and failure (RII=0.4) and less motivation and morale (RII=0.365).

Similarly In the study *Abdella. M and Hussin .T* (2002) the most important labor and equipment related delay factors are labour productivity, labor supply and equipment availability.

Table 10 : RII and ranking of Material related delay causes

Factors	RII	Rank
Shortage of construction material	0.5	1
Using unacceptable material for Construction	0.33	2

As shown on the above table 13. the most influential and highly ranked material related factors in the maritime trade and logistics affairs project are Shortage of construction material (RII=0.5) and Using unacceptable material for construction (RII=0.33).

In the study *Tsegay and H. Luo* (2017) the most important construction material delay factors are Inflation/price increases in materials, Lack of quality materials and slow delivery of material.

Table 11 : RII and ranking of External related factors

Factors	RII	Rank
Unpredictable weather conditions	0.42	3
Lack government control	0.41	4
Unsuitable site conditions (location soil, etc.)	0.37	5
Effect of local community	0.80	2
Unfavorable site condition	0.87	1

As shown on the above table 14. the RII and highly ranked external related factors in the maritime trade and logistics affairs project are Unfavorable site condition (RII=0.87), Effect of local community (RII=0.80), Unpredictable weather conditions (RII=0.42), Lack government control (RII=0.41) and Unsuitable site conditions (location soil, etc.) (RII= 0.37).

In the study *Tsegay and H. Luo* (2017) corruption is the first and unavailability of utilities at site is the second, policy and commitment of government are highly influential external delay factors. Similarly, *Abdella. M and Hussin .T* (2002) weather condition is the first, unforeseen.

Table 12 :RII and ranking of Design related factors

Factors	RII	Rank
Technical problem faced	0.61	1
Lack of technical knowledge	0.40	3
Mistakes in design documents	0.42	2

As shown on the above table 15., the RII and highly ranked design related factors in the maritime trade and logistics affairs project are Technical problem faced (RII=0.61), Mistakes in design documents(RII=0.42),and Lack of technical knowledge(RII=0.40).

Top ten Delay factors

Table 13 : Top ten factors

Factors	RII	Rank
Unfavorable site condition	0.87	1
Effect of local community	0.8	2
Slowness in giving work orders	0.71	3
Poor decision making process	0.7	4
Interference owner	0.698	5
Lack communication and coordination	0.679	6
Lack of communication and misunderstanding	0.669	7
improper site condition	0.65	8
Slowness in payment preparation	0.64	9
Technical problem faced	0.61	10

In Table 16. Above, as ranked by the respondent, 10 most important factors affect timely completion of maritime trade and logistics affairs project is summarized and presented. Unfavorable site condition with RII=0.87 is suggested as the most important factor causing Delay this project. This is closely followed by Effect of local community with RII=0.8. Slowness in giving work orders with RII=0.71 comes third followed by Poor decision making process with RII=0.7. Interference owner with (RII=0.698), Lack communication and coordination with equal value of RII=0.679, Lack of communication and misunderstanding with RII =0.669 followed by improper site condition WITH RII =0.65 followed by slowness in payment preparation with RII=0.64, finally Technical problem faced 10th with RII = 0.61.

CHAPTER FIVE

5 CONCLUSIONS AND RECCOMENDATIONS

5.1 Introduction

This chapter includes the conclusions and recommendations that would help to timely completion in the Ethiopian maritime trade and logistics affaires project. The first question of this study was to identify factors of timely completion on maritime trade and logistics affair project. The second question was to identify the top ten factors project delays in Ethiopian maritime trade and logistics affairs project.

The outcome of analysis from this study can be said to be of great relevance to the maritime trade and logistics project. The factor that causes delay of varies across different project based on the project type, wider and benefits of the project. There are many factors that induce delay on projects; however in this study the factors are limited to 28 factors. These delays causing factors are grouped in eight categories and they were ranked according to the Relative Importance Index. The most factors Change occurrence in. Unfavorable site condition, Effect of local community, Slowness in giving work orders, Poor decision making process, Interference owner, Lack communication and coordination, Lack of communication and misunderstanding, improper site condition, Slowness in payment preparation and Technical problem faced are the most factors timely completion of maritime trade and logistics affair project From this study the main factor or most agreed factor is Unfavorable site condition.

The degree of agreement among overrun factors for the client, consultant, and contractors is determined using Spearman's correlation coefficient. The findings revealed that there is strongly association or correlation between the attitudes of respondents in the two groups of client and contractor, but a moderate association or correlation between the attitudes of respondents in the two groups of contractor and consultant.

The measured value of r_s ' for the two group cases Client Vs Contractor is greater than the essential values of r ' in this analysis, with a significance level of 95% ($P = 0.05$), rejecting the hypothesis that there is no substantial agreement between the respondents, i.e. the null hypothesis is rejected in both time and cost overruns. The measured value of r_s ' is less than the essential values of r ' in the case of (client vs consultant and contractor vs consultant)

respondents, with a significance level of 95 percent ($P = 0.05$), so the null hypothesis that there is no substantial agreement between the respondents is acknowledged. In terms of time and cost overruns, there is no statistically significant agreement between the two parties. As a result, it was concluded that there is no significant agreement between respondents' perceptions of how they rate the factors in (client and consultants and contractor and consultant).

5.2 Conclusions

The main objective of the study was to identify the main factors on the maritime tread and logistics affaires project Unfavorable site condition, Effect of local community, Slowness in giving work orders, Poor decision making process, Interference owner, Lack communication and coordination, Lack of communication and misunderstanding, improper site condition, Slowness in payment preparation and Technical problem faced Subsequently, the study implied that the above delay factors had adversely impacted the project. In order to make sure these factors truly delayed the project, the integrity and reliability of the analysis was checked by *Cronbach's* Alpha result of 0.782 . One of the most important problems that may arise in the project is delays and the magnitude of these delays varies considerably from project to project. Some projects are only a few days behind the schedule: some are delayed over a year. So, it is essential to define the actual causes of delays in order to minimize and avoid the delays in any construction projects.

Based on the literature reviews and the results of questionnaire responses the following conclusions are drawn.

The following factors are identified as a potential delay factors on maritime tread and logistics affaires project estate construction projects.

A. Unfavorable site condition

Site Conditions means the physical and other conditions at the Site and the surrounding area as a whole, including the Sabine Neches Waterway, and including conditions relating to the environment, transportation, access, waste disposal, handling and storage of materials, the availability and quality of electric power.

B. A local community

It is a group of interacting people sharing an environment Effect of local community. The people with common interests living in a particular area broadly: the area itself the problems of a large community.

C. Slowness in giving work orders

D. Poor decision making process

While the decision-making process should be thorough, the best way to make good decisions is usually not to take more time.

E. Interference owner

If interference occurs and impacts the contractor's method of carrying out the work, the owner will likely be liable for any additional costs incurred.

5.3 Recommendations

The purpose of the following recommendation is not to deeply address areas that need improvement. The intention is only to point out some major issues that need consideration to enhance to accomplish this project. The analysis of the questionnaires has suggested the project client, the contractors and the consultants have contributed their own share in causing delay to the project. Hence the following recommendations are focused towards improvements to be made on these causes.

1. To create favorable site condition

Site Conditions means the physical and other conditions at the Site and the surrounding area as a whole, including the Sabine Neches Waterway, and including conditions relating to the environment, transportation, access, waste disposal, handling and storage of materials, the availability and quality of electric power. To create favorable site condition is necessary for this project and have big impact for the project success.

2. To create awareness to the local community

It is a group of interacting people sharing an environment Effect of local community. The people with common interests living in a particular area broadly: the area itself the problems of a large community. It can be group of people with a common characteristic or interest living together

within a larger society a community of retired person's monastic community.so create awareness about the benefit the project is very necessary because it mostly related with the problem on expansion of the land of project.

3. Consultant giving a fast work orders.

Work Order is a financial and work management transaction used to plan and charge labor, materials, and services. PM Work Orders integrate with HR/Payroll, Financials, and Materials Management.by creating a strong Work Order Management & Systems can be minimized the problem.

4. Create strong decision making process

Project Decision Making is the process Whereby the Project Leader and Project Team Decide upon Project Strategy, Tactics, and Acceptable Actions. ... For Project Core Team members, the decisions normally concern project plans and execution.so creating a fast and strong decision is very necessary to succeed the project. While the decision-making process should be thorough, the best way to make good Decisions are usually not to take more time.

5. Interference owner

The foundation for the owner's duty not to interfere with the contractor's performance is the principle in construction contracts that "time is of the essence." The owner is expected to do all that he can to promote the timely completion of the project. ...If interference occurs and impacts the contractor's method of carrying out the work the owner will likely be liable for any additional costs incurred. Owner shouldn't interfere for the contractor.

REFERENCE

- Baldwin, J. R., Manthei, J. M., Rothbart, H., and Harris, R.B. (1971). "Causes of Delay in the Construction Industry." *Journal of the Construction Engineering Division*, 97(2), 177-187.
- Wang, X. (2012) *Key points for construction quality control of external wall energy-saving Renovation project. Wall Mater. Innov. Build. Energy Conserve.* 48–50.
- Williams, C. (2011). *Research methods. Journal of Business & Economics Research (JBER)*, 5(3)
- Levy, S. M. (2006) "Project Management in Construction", McGraw-Hill, USA.
- Lutchman, C. (2011). *Project Execution-Practical approach to industrial and commercial project management. USA: CRC Press*
- Meredith, J. & Mantel, S. (2009). *Project management, a managerial approach (7th ed). USA: John Wiley & Sons, Inc*
- Kerzner, H. (2010). *Project management, best practices (2nd ed). Hoboken, NJ: John Wiley & Sons, Inc*
- PMI (2017). *A guide to the project management body of knowledge (6th ed). USA, Newtown Square, PA: Project Management Institute. Company profile, Ethiopian maritime affairs authority (2020)*
- Dr. Saul McLeod. (2019.). Retrieved from <https://www.simplypsychology.org/variables.html>
- Ethiopian maritime affairs authority. (2019.). Retrieved from <https://emticorp.com/>
- Al Hammadi, S & Nawab, S. (2016). *Study of Delay Factors in Construction Projects*
- Dixit, S. & Sharma, K. (2019). *Factors influencing construction time delay on high rise projects in India. Creative Construction Conference 2019 (pp 330-334)*
- Gebrehiewt, T. & L. Harbin (2017). *Analysis of Delay Impact on Construction Project Based on RII and Correlation Coefficient: Empirical Study.* 196(2017), 366 – 374.
- Samarah, A. & Bekr, G. (2016). *Causes and effects of delay in public construction projects in Jordan. American Journal of Engineering Research*, 5(5), 87-94.

- Sambasivan. M&Soon.Y.W (2006).Causes and effects of delays in Malaysian construction in Al-Momani, A. (2000). “Construction delay: a quantitative analysis”, International Journal of Project Management, 51–59*
- dustry.International Journal of Project Management, 25 (2007) 5*
- Abdella.M & Hussien.T (2002). Causes of construction delay: Traditional contract, International journal of project management, 20, 67-73.*
- Abd El Razaek, M, Bassioni H.A & Mobarak A.M(2008).Causes of delay in building Construction Projects in Egypt. Journal of Construction Engineering And Management, 134(11), 831-841 17–526*
- Zewdu.Z.T.(2016).Construction projects delay and their antidotes: The case of Ethiopian construction sector. International Journal of Business and Economics Research,5(4): 113-122*

APPENDIX

Appendix I: Research Schedule (time Frame)

No.	List of activities to be performed	Time	Remark
1.	Preparing thesis, I(Introduction, Literature Review, and Research Design &Methodology)	Up to January 20,2020	
2.	Preparing and submitting data collection instrument(questionnaire)	February08- 14,2020	
3.	Data collection	Up February 21- March 21, 2020	
4.	Preparing data analysis and interpretation of results, conclusions and recommendation	Up March 22-April 20,2020	
5.	Submitting first draft of thesis II to advisor and improving it based on Feedback	Up April 21- 27,2020	
6.	Writing the final version of the research report	Up December 2021	

No	Items	Birr	cent	remark
1	Transportation and refreshment Cost	8000		
2	Internet Cost and refreshment Cost	5000		
3	Training Cost	2000		
4	Stationary cost for Questionnaires and thesis	8000		
5	Secretarial Cost	3000		
6	Total	26,000		

QUESTIONNAIRE
ST. MARY'S UNNIVERSITY
SCHOOL OF GRADUATE STUDIES

Dear Sir/Madam

My name is Eyerus Assefa . I am currently doing my MSc. IN Project Management at Saint Mary University, school of Graduate studies. I have finished my course work and now I am doing my MSc. Project entitled: **Factors Affecting Timely Completion of Maritime Trade and Logistics Affaires Project (Lto)**” I believe your experience and educational background will greatly contribute to the success of my research. So, it’s with great respect that I ask you to fill this questionnaire. I guarantee that your identity will be kept confidential and the information you provide only be used for academic purposes. I will be happy to share the findings of this research when it’s completed.

Thank you in advance for taking your precious time to fill this questionnaire. Please try to answer all the questions openly, as your answers will have an influence on the outcome of the research. Your advancement of knowledge in the railway construction projects. If you have any questions or comments, please don’t hesitate to contact me.

You can reach me by;

➤ Mobile:+251-923049325

➤ E-mail: euyaassefa21@gmail.com

With Regards,

Eyerus Assefa

SECTION – A (General Information)

Q.1. Gender

Male

Female

Q.2. Job Status

Manager

Supervisor

Engineer

Forman

Q.3. Relevant work experience (years)

0- 5 years

6-10 years

11 -15 years

>15

Q.4. Educational qualification background

BA/B.Sc

MA/M.Sc

PHD

The following are the significance rate of each factor. Please check off the appropriate box for each question. Indicate your level of agreement with the factors that causes delay .

- 1) Strongly Agree
- 2) Agree
- 3) Not Sure
- 4) Disagree
- 5) Strongly Disagree

SECTION B

Questionnaires

Factors of delay		1	2	3	4	5
Contractor related	Frequent change orders					
	Lack of communication and misunderstanding					
	Poor site management					
	Poor planning and scheduling					
	improper site condition					
Consultant related	Slowness in giving work orders					
	Less performance of consultant					
	Inadequate project time estimation					
	Low communication					
	Slowness in payment preparation					
Client -related factors	Interference owner					
	Un experienced management					
	Poor decision making process					
	Lack communication and coordination					
	Unplanned funding of project					
	Increase in project volume					
Labour and equipment related	less motivation and morale					
	Equipment availability and failure					
Material related factors	Shortage of construction material					
	Using unacceptable					

	material for Construction					
External- related factors	Unpredictable weather conditions					
	Lack government control					
	Unsuitable site conditions (location soil, etc.)					
	Effect of local community					
	Unfavorable site condition					
Design related						
	Technical problem faced					
	Lack of technical knowledge					
	Mistakes in design documents					