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COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

THE PERCEIVED EFFECT OF MACRO ENVIRONMENTAL FACTORS ON PROJECT PERFORMANCE IN THE CONSTRUCTION INDUSTRY: THE CASE OF TIBEB DESIGN AND BUILD PLC.

By REBECCA HAILEAB

ID: GSE/6780/14

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Advisor: Dr. Worku Mekonnen.

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By Rebecca Haileab

ID: GSE/6780/14

Approved by Board of Examiner

Dr. Worku Mekonnen.		
Research Advisor	Signature	Date
Internal Examiner	Signature	Date
External Examiner	Signature	Date

Declaration

I hereby declare that the project thesis entitled "*The impact of macro environmental factors on project performance in the construction industry: The case of Tibeb design and build P.L.C.*" has been carried out by me under the guidance and supervision of Dr. Worku Mekonnen. This is to certify that this research project report is my original work and has never been presented for a degree or any other academic award in this or any other university.

Researcher's Name	Signature	Date
_____	_____	_____

Certificate

This is to certify that the thesis entities "*The impact of macro environmental factors on project performance in the construction industry: The case of Tibeb design and build plc.*", submitted to Addis Ababa University School of Commerce for the award of degree in Master of Project Management and is a record of bona fide research work carried out by Ms. Rebecca Haileab, under my guidance and supervision. Therefore, I hereby declare that no part of this thesis has been submitted to any other university or institution for the award of any degree or diploma.

Advisor Name	Signature	Date
Dr. Worku Mekonnen.		

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List of Acronyms and Abbreviations

α	-	Cronbach Alpha
CSF	-	Critical Success Factor
df	-	Degree of freedom
EF	-	Economic factor
GDP	-	Gross domestic product
GERD	-	Great Ethiopian Renaissance Dam
KPI	-	Key performance indicator
MEF	-	Macro environmental factors
P	-	Significance
PF	-	Political factor
PLC	-	Private limited company
PMI	-	Project management institute
PP	-	Project Performance
SD	-	Standard deviation
SPSS	-	Statistical package for social sciences
SQL	-	Structures query language
TF	-	Technological factor
VIF	-	Variance inflation factor

Abstract

The construction industry in Ethiopia is crucial for the nation's economic growth and development. The macro environment in construction projects refers to external factors beyond an organization's control that influence its success. Economic factors refer to the conditions and trends that impact the overall economy, such as inflation rates, economic growth, exchange rates, and unemployment levels. Technological factors encompass advancements in technology that can impact industries. Political factors involve government policies, regulations, stability, and political events that can affect businesses. This study aimed to analyze and assess how macro environmental factors influence project performance within the construction industry, specifically focusing on Tibeb Design and Build. The study used a descriptive and explanatory research design to accomplish its purpose, with employees of the organization as primary data sources. Questionnaires were used to collect these data. The survey was performed using a census, with 96 employees of Tibeb Design and Build filling out questionnaires. 79 questionnaires were correctly filled out and returned from the distributed questionnaires, accounting for an 82.3% response rate. The data was analyzed using the descriptive method. To model the impact of economic, technological, and political factors on project performance, a multiple linear regression was used. The findings show that project performance is positively affected by both economic and technological factors. The most powerful indicator was technological factors, followed by economic factors. The study proposed that a high value should be given to macro-environmental factors, especially considering economic factors in the organization's operations and incorporating new technologies into its initiatives. The research also found that political factors did not have any effect on project performance.

Key words: Project performance, economic factors, technological factors, political factors

CHAPTER ONE

1. INTRODUCTION

This papers main focus is on the impact of macro environmental factors on project performance in the construction industry. The study's aim is to assess the macro environmental factors that are affecting projects at Tibeb's design and build P.L.C. The project management style practiced at Tibeb Design and Build P.L.C is waterfall project management, an approach that follows a linear, sequential formula with clearly defined phases. This chapter includes background of the study, background of the organization, statement of the problem, research questions, and objective of the study, significance of the study, scope of the study and limitation of the study.

1.1 Background of the Study

The term "construction industry" describes the industrial segment of trade and manufacturing that is involved in creating, restoring, and maintaining infrastructure (Hussain et al., 2022). From a report by Research and Markets (2022) it was reported that Ethiopia was predicted to have significant growth in 2023 as a result of infrastructural development, which means the construction industry is one of the countries expected sector for growth. Due to this reason it's crucial to study what is affecting this industry.

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management processes comprises the 5 Process Groups which are initiating, planning, executing, monitoring and controlling and closing. In general managing a project is balancing the project constraints which include scope, quality, schedule, budget and resources (PMI, 2008). The larger economic conditions that can affect a project's success are referred to as the "macro environment" in project management. Trends in the economy, inflation, employment rates, consumption, monetary policy, and taxation are some examples of these external forces. For project managers to be able to predict possible risks, opportunities, and limitations that may result from the general economic landscape, they must be able to understand and analyze the macro environment. To assure project success despite external environmental swings, project managers can make well-informed decisions about resource allocation, budgeting, scheduling, and risk

management by taking these microenvironment aspects into account (Project Management Institute, 2017).

Project success is the cornerstone for planning and directing future projects as well as for managing and controlling ongoing ones. Without it, a project manager cannot plan, control, or improve (Chovichien & Nguyen, 2013). In the construction industry, several internal and external factors impact a project's success. The macro environment, which includes variables like economic, technological, and legal, is a critical component that influences the performance of a project. The macro environment factors have a significant impact on project outcomes in the construction industry. For instance, the state of the economy can have an impact on the cost of materials, the availability of money, and the general viability of a project. Technological developments also affect construction techniques, productivity, and quality requirements, which affect how well a project performs. Legal requirements, including safety standards, environmental regulations, and zoning rules, can have a big impact on how well a project is carried out.

Efficiency and effectiveness are two distinct metrics that are related to project performance. Efficiency metrics address "time, budget, and specifications." The project's utilization, user satisfaction, and goal achievement are all considered effectiveness metrics (Takim & Adnan, 2008).For construction companies to succeed, they must be able to complete projects on schedule, within budget, and with the required quality.

We can list a few significant global and local projects whose performance was affected by macro environmental conditions. The Channel Tunnel, also called the Chunnel, is an amazing submerged railway tunnel that spans the English Channel and links Folkestone, England, and Coquelles, France. Since it opened in 1994, a number of outside influences have affected the performance of this engineering marvel. The operation of the tunnel has been significantly hindered by periodic mechanical issues. These problems, which include cold weather interruptions and fires, have momentarily stopped services over the tunnel. Furthermore, the presence of migrants in the area of Calais who are trying to enter the UK has sparked countermeasures and deterrence measures, which have an impact on the tunnel's smooth operation. In 1985, the project's estimated cost was £5.5 billion, making it the most expensive construction endeavor ever suggested. In the end, the cost came to £9 billion, exceeding the

budget. In Ethiopia, the Grand Ethiopian Renaissance Dam (GERD) is a 6,450 MW hydropower project located on the Blue Nile in Ethiopia, about 30 km upstream of the Sudanese border. Owned by the Ethiopian Electric Power Company, it is expected to be Africa's largest hydroelectric project. With a reservoir capacity intended to hold sediment influx for almost 100 years, the 74 km^3 dam will be built. The performance of the Grand Ethiopian Renaissance Dam (GERD) has been influenced by several external factors. One significant factor affecting the project's performance is the geopolitical tensions and disputes between Ethiopia, Egypt, and Sudan over the dam's construction and operation. The disagreements over water rights, particularly concerning the equitable allocation of the Nile's waters, have led to delays and challenges in implementing the project efficiently. Additionally, external pressures from international actors, such as threats of withholding development aid from countries like the United States, have added complexity to the situation surrounding the GERD. These external factors have contributed to uncertainties and obstacles that have impacted the progress and cost management of the dam project.

Tibeb Design and Build P.L.C is a particular case study used to examine how aspects of the macro environment affect project performance in the construction sector. Through an analysis of Tibeb Design and Build P.L.C's experiences concerning economic changes, political shifts, and technological developments, an important understanding of the opportunities and challenges faced by construction companies functioning in rapidly changing environments can be obtained.

1.2 Organizational Background

Tibeb Design and Build P.L.C was founded in Addis Ababa, Ethiopia in 2007 with a vision "transcend the realm of construction, embodying a dedicated team committed to fostering community growth", mission "to preserve existing enterprises and transform our clients' dreams into reality" by aiming to preserve existing enterprises and transform their clients' dreams into reality. Currently the company is primarily working on construction, interior designing and renovation works. Some of the projects launched by Tibeb design and build P.L.C include Radisson hotel and resorts, Yeka sub-city renovation design-build project, Adama international convention and exhibition center, Dukamo coffee shop and Bensa Daye medium industry park.

1.3 Statement of the problem

In recent years, Ethiopia's construction industry has experienced enormous growth and development. The success of the construction is based on the determination of better results compared to expectation in terms of schedule, cost, safety and quality (Ramlee et al., 2016). Researchers looked for indicators of success and attempted to connect their findings to the project's performance. Macro environmental factors are external factors beyond an organization control that will influence its success, such as economic, technological, legal and cultural factors. External factors beyond the project team's control can lead to project failure (Akinradewo et al., 2022). This research aims to identify and analyze the specific macro environmental factors that influence the performance of construction projects. This included studying how factors such as economic situations, government mandates and technological progresses affect various aspects of project performance, such as cost, schedule and quality.

The Lemi Kura Sub city Project was launched on April 13, 2023, by Tibeb Design and Build P.L.C. It was supposed to be a 5-month project, but it has not yet been completed which means the project's performance is affected both by cost and time constraints. This project also encountered a fire within the project site due to environmental factors and again affected both the project budget and completion period. The Adwa 00 project was also another project that was initiated in 2024, due to difficulties with the raw materials used in ornamental sculptures it encountered delays in completion of the project that costs the company to pay penalty money which affected the project budget. Other projects like the Dukamo coffee shop design and build and other projects which were commenced between the year 2019 and 2020 were also affected by the political instability which was between the central government and the Tigray People's Liberation Front (TPLF). Within these years the COVID-19 pandemic was also another problem for projects performed by Tibeb Design and Build P.L.C. Overall the projects at Tibeb Design and Build have a performance problems especially on the cost, quality and time constraints of the projects.

Gini & Agala (2023) Conducted a research on the impact of macro environmental factors on business performance and they concluded that macro environments have an immense impact on how well business activities go, thus when developing a strategic business strategy, these environmental aspects need to be taken into account. Fehan & Aigbogun (2022) conducted a

study on the impact of external environment on construction firm's performance by using institutional pressure as a mediator. Ratnasabapathy et al. (2006) also did a study on macro level factors affecting the construction procurement selection. Even though the researchers studied and found out that the macro environment has an impact on project performance, they tried to relate the impact to specific concepts like procurement, institutional pressure and on business performance rather than construction industry. The construction industry is subject to significant external influences and macro environmental factors that can make a project successful or unsuccessful. Nevertheless, there is a lack of knowledge regarding the precise ways in which these factors affect project performance metrics like cost, schedule, and quality. In order to successfully limit risks and take advantage of possibilities given by external factors, construction project managers may find it difficult to do so without a thorough understanding of these relationships.

The goal of this research is to pinpoint and examine the specific macro environmental elements that have a major influence on project performance in the construction projects. The objective of this research is to offer construction stakeholders useful insights to improve their decision-making processes and maximize project outcomes by investigating how economic, legal, and technological factors impact various aspects of project delivery. The purpose of this study is to investigate the impact of macro environmental factors on the performance of projects at Tibebe Design and Build P.LC.

1.4 Research Questions

The research questions raised are the following:-

1. What is the effect of economic factors on the project performance of a project at Tibeb Design and Build P.L.C?
2. What is the impact of technological factors on the project performance of projects at Tibeb Design and Build P.L.C?
3. What is the effect of political factors on the project performance of a project at Tibeb Design and Build P.L.C?

1.5 Objective of the study

1.5.1 General Objective of the study

The aim of this study is to analyze and assess how external macro environmental factors influence project performance within the construction industry, specifically focusing on Tibeb Design and Build P.L.C.

1.5.2 Specific Objectives of the study

- Investigating the effect of economic factors on the performance of the project at Tibeb Design and build P.L.C.
- Explore how technology is affecting the project's performance at Tibeb Design and Build P.L.C.
- Analyze how legal considerations affect the project's performance at Tibeb Design and Build P.L.C.

1.6 Significance of the Study

The research can yield important insights and findings that can improve the understanding of this crucial relationship. The study will specifically focus on how macro environment factors influence project performance within a real-world context, which will make a significant contribution to the field of construction project management. Project managers, contractors, and stakeholders are among the practitioners in the construction business who must comprehend the influence of macro environmental elements on project performance. By taking into account and adjusting for external environmental effects, the study's conclusions can provide these professionals with useful implications that will aid in decision-making, risk mitigation, and project outcome optimization.

Knowing how macro environmental factors affect project success can help strategic planning procedures for companies such as Tibebe Design and Build P.L.C. Organizations can enhance project outcomes and adapt to changing environmental conditions by identifying and addressing external impacts, developing more resilient strategies, and allocating resources effectively.

1.7 Scope of the Study

The study is geographically restrictive because it addresses only Ethiopia and, to the furthest extent possible, Addis Ababa. The investigation was limited to the main office, even though the organization under examination has projects and project offices spread around the nation. Furthermore, the research ignores other industries and just highlights the building industry. Furthermore, it was cut down to only one contractor, Tibeb Design and Build P.L.C., a building firm. Because of these facts, the study paper focuses solely on the following individuals: architects, project managers, senior managers, site/office engineers, and other employees such as auditors and supervisors of the mentioned construction company. The study focused on the macro-environment because it consists of various elements, such as political, economic, sociocultural, and technological factors, that can significantly impact the construction industry. By analyzing these macro-environmental factors, construction companies can anticipate potential challenges, identify growth opportunities, and adapt their strategies to mitigate risks effectively. It also focused specifically on the variables under study: economic factors, technological factors, and political factors concerning project performance.

1.8 Limitation of the Study

One of the primary limitations was that the macro environment is constantly evolving, with changes occurring rapidly due to global events, policy shifts, economic fluctuations, and other external factors the study being conducted at a specific point in time the study is limited by quickly becoming outdated and limiting its relevance and applicability to future construction projects. The findings from the study on the macro environment's impact on construction projects which is conducted on a single company cannot be generalized across different contexts or for all construction companies.

1.9 Organization of the Study

The study has five chapters. The first chapter includes the problem statement, objective of the study, research questions, significance, limitation, and definition of terms. In the second chapter, review of related literature which includes theoretical and empirical literature from views of different scholars and conceptual frame work of the study are presented. The

research design and methodology are discussed in the third chapter of the study, which covers the research design, the sample and sampling techniques, the data-gathering sources and instruments. On the fourth chapter results found from the data analysis are discussed and different methods such as graphs, tables, and other data presentation methods are employed to present the results. Finally, based on the findings' summary of the paper, the conclusion and recommendations are given.

1.10 Operational definition of Terms

Construction projects: is the creation, renovation, or expansion of a physical structure, such as a building, bridge, road, dam, or infrastructure system (Prasain, 2023).

Macro environment: They are uncontrollable external forces that affect how a business operates and they are largely out of the control of the business and often require changes in operating, management, production, and marketing. It includes trends in the gross domestic product (GDP), inflation, employment, spending, and monetary and fiscal policy. The macro environment comprises a range of external factors: demographic, physical, economic, technological, political, and socio-cultural conditions (Khartit, 2023).

Economic factors: Economic factors are internal and external variables in the market that impact the economy as a whole and individual business. These factors include interest rates, tax rates, laws, policies, wages, governmental activities, GDP, inflation and fiscal policy.

Technological factors: refer to the ways new practices and equipment can affect businesses. These factors include information and communication technology (ICT), research and development, automation, and e-commerce.

Political factors: refers to the influence of government policies, regulations, and stability on businesses and industries. These factors can include tax policies, trade restrictions, political stability, government leadership, and legal frameworks that can impact the operations and strategies of businesses.

Project performance: is the overall assessment of the project's ability to achieve its goals and adhere to its scope, budget and timeline. The project's success is determined by its ability to be completed on schedule, within budget, in compliance with technical requirements, and to the satisfaction of the client.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

A survey of the literature provides a foundation of knowledge for the research question and highlights contradictions and gaps in previous studies. Various theories have been proposed to account for the factors affecting project performance. The purpose of this study is to determine how project performance is impacted by macro environmental influences. The relevant literature on projects, project management, the construction industry, and the variables influencing project performance will be presented in this chapter. It has been investigated and analyzed both theoretically and empirically.

2.1 Theoretical Review

2.1.1 Understanding Project and construction project

2.1.1.1 Project

There are several definitions for a project; we will look at a few of them in this literature review. A project is a brief undertaking that is started to produce a unique good, service, or result. The temporary nature of projects indicates a distinct beginning and end (PMI, 2008). An alternate definition of a project would be a group of tasks that must be completed within a specific time frame to meet a specific set of objectives. A project manager is in charge of organizing, planning, supervising, and effectively finishing projects. The group that is tasked with carrying out these duties is known as the project team (Malsam, 2023). A project is also described by the Cambridge Dictionary as a planned component of work or an activity that is completed over time with the intention of achieving an objective.

Some characteristics of a project that we can mention are that it has defined start and end dates, an objective that needs to be achieved within set parameters, and the amount of natural and human resources that are used (Kerzner, 2003).

According to the products that they produce, Youker (2017) divided project types into nine categories: administrative, construction, computer software development, plan design, equipment or system installation, event planning or relocation, process industry maintenance, new product development, and research. Creating a new product or service, altering an organization's personnel, structure, or style, creating or purchasing a new or updated

information system, building a structure or infrastructure, or putting a new business process or procedure into place are a few examples of projects (PMI, 2008).

A project has two phases: the starting point, in which actions are taken to move the project closer to completion, and the end phase, which will make the project either succeed or fail. We can also say a typical project has four main stages: definition (starting), planning, execution (implementation), and closure. Combining these stages will give us the path of a project that can be followed from the beginning to the end and is usually referred to as the project's "life cycle" (Daddey and Watt, 2021).

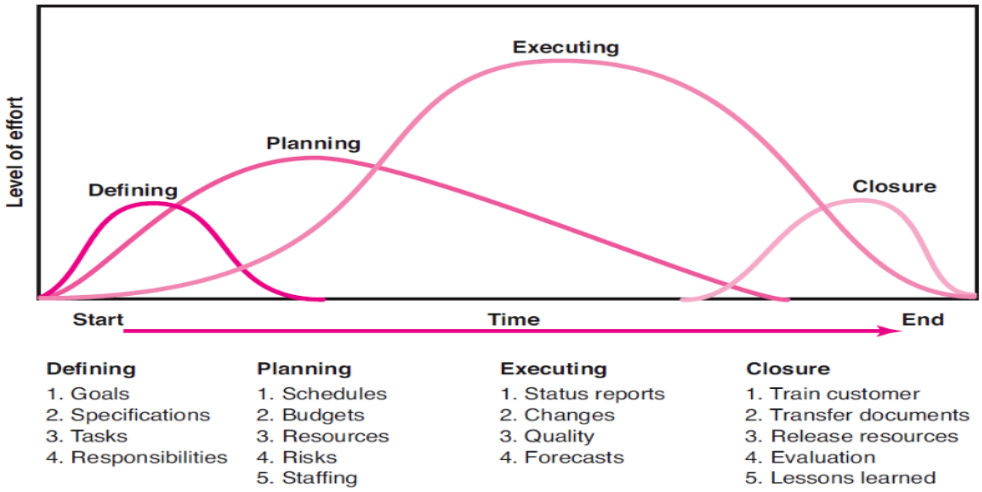


Figure 2.1: Project Life Cycle

Source: (Daddey & Watt, 2021)

2.1.1.2 Construction Projects

According to Prasain (2023), a construction project is defined as the creation, renovation, or expansion of a physical structure, such as a building, bridge, road, dam, or infrastructure system. A construction project is usually done through coordination between architects, engineers, contractors, and subcontractors, which is typically necessary for a building project. Important elements in construction projects include safety, design, materials, and regulatory compliance. CHITKARA (2019) also described a construction project as a high value, time limited, and unique construction mission that aim to create a construction facility or service. The project's performance objectives are predefined and include quality specifications, budgeted costs, completion timelines, and other specified constraints. Construction projects are sometimes divided into groups according to their size, the kinds of structures being constructed, and their intended function, sometimes known as "land use" or "end use."

Construction projects can be broadly classified into six categories: heavy civil, mixed-use, commercial, residential, institutional, and industrial (Finity, 2024).

Construction projects have certain characteristics, such as meeting the owner's needs and expectations; having numerous related activities that contribute to the project as a whole; having a defined time limit for completion; having a defined total cost; finishing the project within the allocated budget; and offering special opportunities to learn new skills (Theconstructor.org, 2014) .

2.1.2 Project management

Project management, according to PMI (2024), is the process of applying instruments, knowledge, abilities, and procedures to project activities to fulfill project requirements. Project management includes organizing, planning, directing, and controlling an organization's resources towards a short-term goal of achieving predetermined goals and objectives (Kerzner, 2003). There are three important components that make project management different from other management styles: the project manager, the project team, and the project management system. The project management system includes the organizational structure, information processing, and decision-making (Manage.gov.in 2024).

All phases of a construction project are managed by construction project management, including those involving residential and commercial structures as well as bridges, roads, and eco-builds (Coursera staff, 2023).Construction management pertains to offering expert management services to the project owner to attain optimal quality while keeping costs to a minimum. The objective is to consider project design, construction, and planning as interconnected tasks within a construction system (Clough et al., 2000).

Müller and Jugdev (2012) mentioned in their article that two factors are often mentioned in the literature on project management as being essential to project success by the authors(Morris & Hough, 1987; Turner et al., 1999; Wateridge, 1998), which are: Project success factors are those aspects of a project that, when impacted, raise the probability of success; they are the independent variables that raise the probability of success and project success criteria, or the dependent variables that measure success, which are the standards by which a project's success or failure is evaluated.

2.1.3 Construction project success

The economy of a country is greatly influenced by the construction industry, which raises investment, creates job opportunities, and contributes substantially to GDP (Cheng et al., 2021). There is no single definition of project success, according to the literature. Different definitions of project success are offered by several researchers. Project success is the basis for managing and controlling ongoing projects as well as for planning and directing future projects (Chovichien and Nguyen, 2013). The achievement of cost, schedule, and performance goals is the triple success criterion, or the "iron triangle," and it has gained widespread acceptance as a common success criterion. The author, who is credited with creating the "iron triangle," asserts that the goals of the client are always a combination of three things: completing the project by the deadline, performing the completed scheme within a specified cost or budgetary limit, and putting the project into use. In which this statement is made specifically concerning reference to construction projects (Barnes, 1988). According to some academics, the standard evaluation of a construction project's success is its ability to be completed on schedule, within budget, in compliance with technical requirements, and to the satisfaction of the client (Morris & Hough, 1987; Slevin & Pinto, 1986; Turner, 2009).

Ahadzie, Proverbs, and Olomolaiye (2008) defined fifteen essential success factors for mass housing projects, which they divided into four categories: cost and time, customer satisfaction, environmental effect, and quality. Chua, Kog, and Loh (1999) also suggested that the probability of construction project success can be increased if the basic characteristics of the project can be thoroughly understood, adequate contractual arrangements are adopted, a professional management team is assigned, and a sound monitoring and control system is established.

2.1.4 Project Performance

To understand project performance, it is first essential to get the idea of project success. Project success is when the end product meets the expectations of stakeholders (Lindehammar and Cederhill, 2017).There are two concepts to identify project success which are Project management success and Product success: Project management success focuses on the project process and, in particular, the successful accomplishment of cost, time, and quality objectives, it also considers the manner in which the project management process was

conducted and the product success deals with the effects of the project's final product (Baccarini, 1999).

Project performance is the overall assessment of the project's ability to achieve its goals and adhere to its scope, budget, and timeline. To track project execution and spot deviations from the project management plan for proactive mitigation, a periodic measurement is carried out during the monitoring and controlling phases of a project (Johnson, 2015). Project performance management may be stated as follows: project evaluation (an appraisal of the project's success), performance evaluation of the project team (as a whole), and performance evaluation of the individuals (team members and project manager). The process is ongoing throughout the project and includes all project management procedures as well as all project phases (the project scope) (Simona and Adina, 2013).

2.1.5 Project success criteria

Success encompasses a range of viewpoints and contingent variables, such as the person conducting the assessment, the time and date of the assessment, the criteria used to base the appraisal, the kind of project being assessed, and the location or context of the project's delivery (Pinto et al., 2022). From the Merriam Webster dictionary, criterion is defined as a standard on which a judgment or decision may be based and the Oxford English dictionary defines it as a test, principle, rule, canon, or standard, by which anything is judged or estimated. Project success was also described by Parfitt and Sanvido (1993) as the total accomplishment of project objectives and expectations where as these objectives and expectations cover a wide range of topics, such as professional, social, educational, financial, and technical challenges. Combining these words yields the definition of the project success criterion, which is the collection of guidelines or standards that must be followed in order to achieve desirable results within a given specification. Project success criteria vary depending on the industry in which the firm operates, the company itself, and the goals the company has for itself. However, it can be defined as the measurable terms or elements required for a project to be completed successfully. The project deliverables and benefits serve as the basis for the project success criteria (Team, 2021).

Lim and Mohamed (1999) suggested that the concept of project success should be regarded from the many angles of the individual owner, developer, contractor, user, the public at large, and so forth, according to their study. And they suggest dividing the viewpoints on project

success into two groups: both macro and micro perspectives. "Does the original concept tick?" is a question that the macro viewpoint answers, while users and stakeholders typically view it from the macro viewpoint. The construction parties are typically the focus of the micro viewpoint, where the developer and contractor see project success from the micro viewpoint. The micro viewpoint sees the completion from the time, cost, quality, performance, and safety aspects. While the macro viewpoint sees the completion from the time, satisfaction, utility, and operation aspects.

2.1.6 Critical success factors

Researchers have tried a variety of methods to identify CSFs in construction. There have been several hypothesized factors that affect project success. There is no consensus on the variables, although some are shared by multiple lists (Albert P.C et al., 2004).Critical success factors are defined as components in a project that are necessary for the project to achieve its objectives (ILX Marketing Team, 2019). A critical success factor is something that a company, initiative, or organization needs to do to reach its objective. Critical success factors assist a group or organization in determining priorities and measuring progress towards established objectives. Deliverable is a common word for these objectives. Various deliverables will have varying critical success factors, and it is these elements that determine whether the effort is considered successful or unsuccessful. Thus, if the objective is to produce a deliverable, then achieving this objective requires a critical success factor (Yarbrough, 2021).

A construction project is usually considered as successful when it is finished on schedule, within budget, and in accordance with specifications. After a thorough investigation by Tabish and Jha (2011) into the success factors for public construction projects started in the Indian construction industry, four success factors were identified: "external monitoring and control," "pre-project planning and clarity in scope," "effective partnering among project participants," and "awareness of and compliance with rules and regulations."

Albert P.C, David, and Ada P. L (2004) developed a new conceptual framework that includes and regroups the identified variables affecting project success. They conducted a thorough review of literature related to CSFs in seven major management journals and grouped CSFs under five main categories: human-related factors, project-related factors, project procedures, project management actions, and external environment.

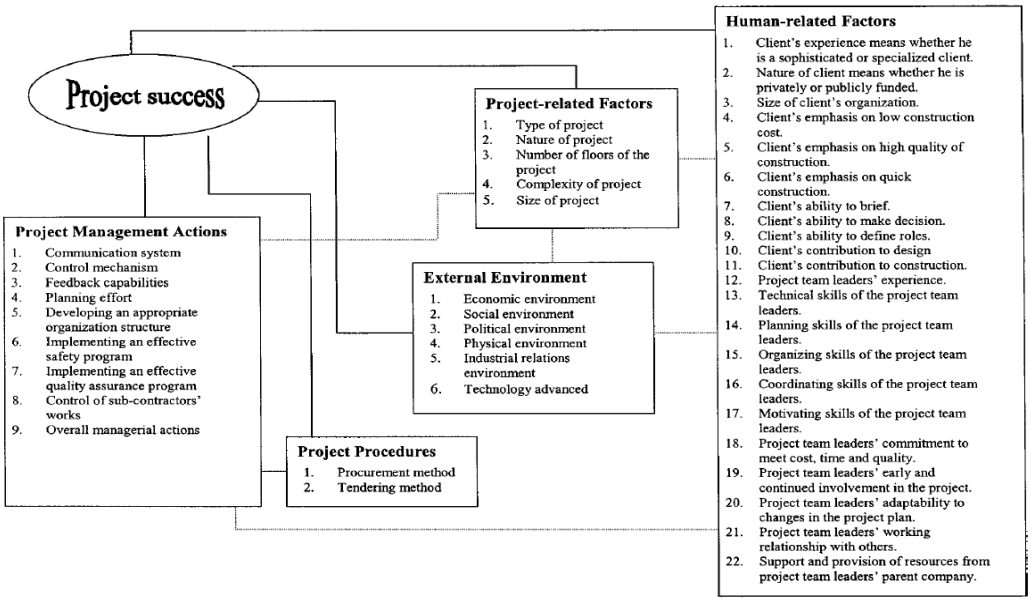


Figure 2.2: New conceptual framework for factors affecting project success

Source: (Albert P.C, David, and Ada P. L, 2004)

2.1.7 Key performance indicators for measuring construction success

KPIs are defined as a collection of measures that highlight the areas of organizational performance that are most important to the organization's present and long-term success. Over time, there has been extensive discussion on project success in the field of construction management. The three fundamental and crucial performance metrics in construction projects are cost, time, and quality, according to an analysis of the top eight publications on project success. Additional metrics like functionality, safety, and satisfaction, are getting more and more attention (A. P. C. Chan and Chan, 2004).In addition, a framework comprising and restructuring each of the identified performance metrics to measure the performance of a construction project was developed, both objectively and subjectively by the study.

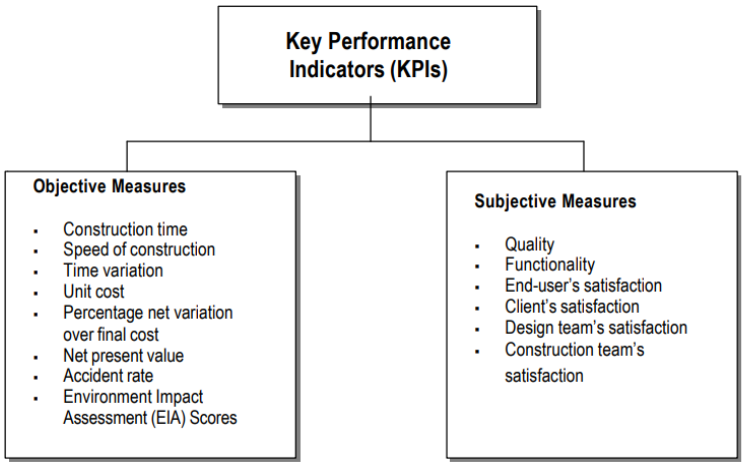


Figure 2.3: Key Performance Indicators for Project Success

Source: (A. P. C. Chan and Chan, 2004)

Moradi, Ansari, and Taherkhani (2022) conducted a literature review on project performance measurement and introduced and described the key performance indicators that are most important, along with their relevant sources and references. They also discussed the relationships between the indicators and how they are quantified.

Researchers	Safety	Cost	Quality	Time	Client satisfaction	Profitability	Team satisfaction	Risk
Ali and Rahemet (2010)	x	x	x	x		x		x
Chan and Kim (2011)	x	x	x	x				
Xu et al. (2012)	x							
Chovichien and Nguyen, 2013	x	x	x	x	x		x	
Auma (2014)		x	x	x				
Fang et al. (2015)	x							
Silva et al. (2016)	x	x	x	x	x	x		
Wibowo et al. (2017)		x						
Mohammadi et al. (2018)	x							
Keenan and Rostami (2019)			x					
Sanni - anibire et al. (2020)	x							x

Figure 2.4: Performance indicators extracted from previous studies

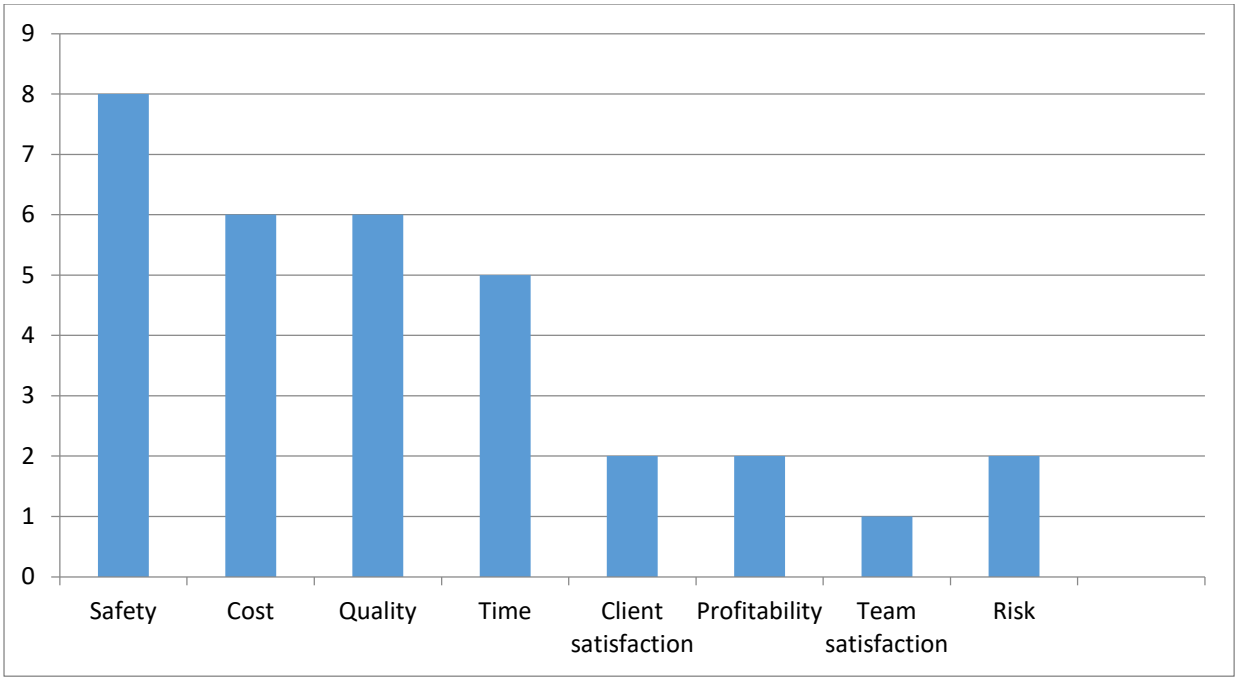


Figure 2.5: Rank of the performance indicators

2.1.8 Concept of Macro environmental factors

Armstrong et al. (2012) defines the macro environment as the broader social dynamics that affect an organization's surroundings. The organization has little control over these outside variables, yet they have a big impact on its tactics and operations. A variety of factors, including political issues, economic conditions, natural forces, technological breakthroughs, cultural trends, and demographics, make up the macro environment. These elements influence the entire business environment in which a company functions and may offer advantages or disadvantages.

The macro environment encompasses the wider business environment that operates across all markets and industries. It considers the size and composition of entire national and even global economies and societies. Measuring and planning for a business's success requires an understanding of the macro environment (Bush,2020).The external environment, often known as the general environment, is a broad term that encompasses all external forces and influences that affect how a business operates and to which an organization must adapt to continue operating (Stewart Black and Bright, 2019).

Types of Macro environmental factors

Demographic Forces

These forces, which comprise population size, age distribution, gender composition, trends in employment, and income levels, can have a big impact on market demand and consumer behavior. To effectively serve diverse demographic groups, businesses must modify their offerings in terms of products, services, and marketing tactics. Changes in demography and population growth can have a significant effect on business plans and market demand.

Economic Forces

These forces also include GDP growth, inflation rates, employment levels, consumer spending, financial regulation, and taxation. They have a direct impact on market dynamics and corporate success. They can play a big role in shaping the macro environment. Any change in these forces can have a potential influence on business decisions on investment, borrowing, and the overall performance of the business or project. Economic factors can affect construction projects in various ways, influencing their ability to manage costs, secure financing, and navigate market fluctuations.

Socio-Cultural Forces

Socio-cultural forces refer to societal norms, values, lifestyles, and preferences that shape customers behavior and market trends. Understanding these forces is very important for businesses to develop marketing strategies that goes with the target audiences.

Technological forces

They are associated with both the technology and materials needed to make a given product, as well as the skills and abilities employed in manufacturing. These factors have a significant impact on how businesses run and compete in the marketplace. A firm must keep up with technology advancements if it hopes to stay competitive and satisfy changing client needs. Technological factors can affect the efficiency and productivity of construction projects, Safety Measures, Quality Control and Risk Mitigation, enhanced Collaboration, and Communication.

Ecological Forces

These forces relate to the elements of nature that have an impact on the supply and demand of resources. In the modern global economy, environmental factors like pollution levels, access to natural resources, sustainable practices, and climate change have taken on greater significance for enterprises. So to keep up with these shifting social expectations, businesses are under pressure to implement eco-friendly procedures and lessen their environmental impact.

Political Forces

Political forces include government regulations, policies, and stability that influence business operations. Market accessibility, trade regulations, taxation plans, and general business profitability can all be influenced by political and legal regulations. To successfully handle legislative difficulties, companies need to stay up to date on political changes. Political factors can affect the construction project through changes in regulations, funding allocation, policy changes, stakeholder engagement, and labor regulations.



Figure2.6: Six Forces – The DESKTEP model

Source: (Bhasin, 2018)

2.2 Empirical Review

The relationship between project performance and the macro environment has been studied. According to Ali, Musawir, and Ali (2018) , project performance is determined by how well project outputs and outcomes satisfy operational and technical requirements, budgetary and schedule goals, and, ultimately, the business demands of the client. Phakoe (2023) carried out a study to choose KPIs that, when implemented, will successfully advance the building sector. Throughout the project's construction, data was gathered from Building 1. Finally, Microsoft Excel, SQL, and Power BI were used to summarize, analyze, and present the data in tables. The study concluded that KPIs can guarantee a company's success, but only if the ones used are aligned with the projects or company's vision and mission.

Chan (2001) researched to create a framework for measuring a construction project's success. He conducted a thorough evaluation of the literature over the previous ten years and, following the project success evaluation, the three fundamental and crucial performance indicators in building projects were determined to be cost, time, and quality. There is also a growing interest in other metrics, such as functionality, safety, and satisfaction, among others. Additionally, he created a unified framework that reorganizes and incorporates each of the determined performance metrics.

Esmaeili, Pellicer, and Molenaar (2016) aimed to identify and categorize CSFs from the literature, examine the limitations of current practices, and recommend future studies. They conducted a comprehensive investigation of the literature on CSFs. The result they found was that upper management support, commitment, constructability reviews, team work, communication, and building trust are the key elements of success in most construction projects.

The limitations related to previous studies identified by them were: first, most of the previous studies rely on obtaining ratings from experts; providing empirical evidence based upon completed projects was rare. Second, most of the CSFs identified in previous literature were subjective, and it is very difficult to measure them during a real construction operation.

A multi-criteria model was used in Ratnasabapathy, Rameezdeen, and Gamage (2006) study on macro-level factors influencing construction procurement selection. In addition to conducting a few interviews with chosen industry experts, they also used the Delphi survey. A multi-criteria selection model that was created with the Sri Lankan construction sector in

mind was provided in the study. The findings also suggested that creating a systematic process based on a set of appropriate selection criteria could enhance the procurement selection process.

The effect of macro environmental factors on business performance in Nigeria was also investigated by Gini and Agala (2023). Using a narrative assessment report approach, the study demonstrated how macro factors impact and shape the expansion and advancement of enterprises in developing nations like Nigeria. Ultimately, they concluded that macro environments have a big influence on how well business operations go, so when developing a strategic business plan, these environmental aspects need to be taken into serious consideration.

Fehan and Aigbogun (2022) looked at how external environmental factors and institutional influences affected construction enterprises' performance results. It was also assessed how institutional force functioned as a mediator in that relationship. They employed a self-administered questionnaire to gather primary data from 250 executives employed by construction companies. Subsequently, they employed partial least squares structural equation modeling to analyze the data, and the outcome demonstrated that institutional pressures and external environmental factors both affect construction enterprises' performance. Their findings, which found institutional constraints to mediate the relationship between external environmental elements and construction business performance outcomes, addressed a legitimate research need in the context of institutional theory. Mohamud (2023)also carried out a mixed research design study that included quantitative and qualitative components to evaluate the macro environmental factors and the success of the hospital construction project in Mogadishu, Somalia, known as IsbitaalkaXoogga. By taking into account only 260 individuals in the population, 158 respondents were chosen for the study, which used a cross-sectional research approach. The research findings showed that economic elements play a significant role in project success. Not only do technological considerations alone have a positive impact, but political factors also play a positive role in the development of the IsbitaalkaXoogga hospital in Mogadishu, Somalia.

2.3 Conceptual Framework

The macro environmental factors and the performance characteristics of construction projects are integrated into the conceptual framework of this study. The framework is developed from integrating of literature.

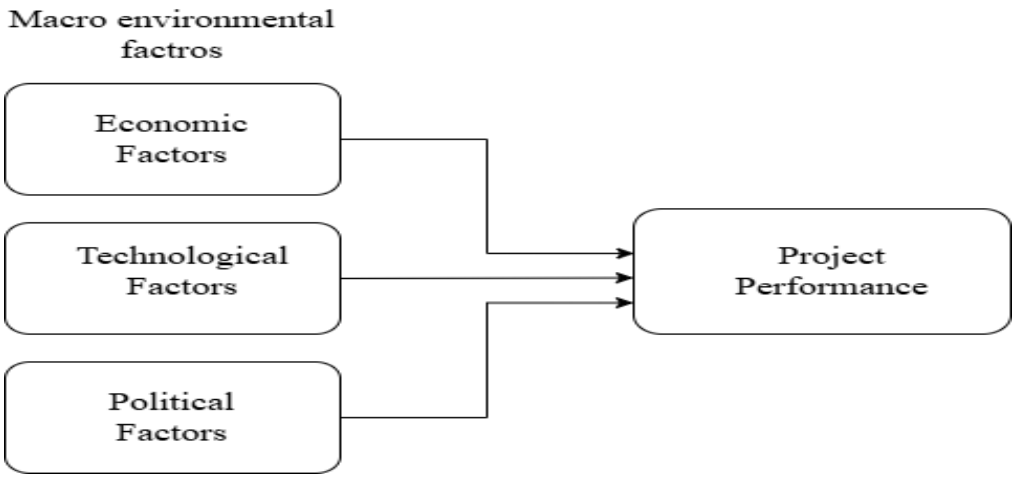


Figure2.7: The conceptual framework

The conceptual framework in Figure shows how the macro environment influences the construction project's performance. The macro environment is the independent variable, and it is divided into smaller constructs like legal, technological, and economic aspects. The performance of the construction project, which is the dependent variable, is likewise conceptualized in terms of meeting time frames and budgets, producing high-quality work while adhering the satisfaction of clients.

Hypothesis of the study

H1: Economic factors have significant effect on project performance of projects performed at Tibeb Design and Build.

H2: Technological factors have significant effect on project performance of projects performed at Tibeb Design and Build.

H3: Political factors have significant effect on project performance of projects performed at Tibeb Design and Build.

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter presents the methodology that was used during the study. It involved the research design, study population, sample size and selection, sampling techniques, data collection methods, Data collection instruments, procedure of data collection, Reliability and validity of instruments, Data analysis plus measurement of variables.

3.1 Research Design, and Research Approach

3.1.1 Research Design

A research design provides a framework for the collection and analysis of data (Clark et al., 2021). There are numerous research designs, and each is appropriate for a particular set of objectives and study questions. The objectives of the study and the type of research determine which research design is best (Alam, 2023). For this study, the researcher used both explanatory and descriptive research designs. To make data easier to understand and interpret, descriptive analyses help by describing, displaying, or constructively summarizing the data so that patterns may appear that satisfy all of the data's requirements. The study was conducted to investigate the cause-and-effect relationship of the specified variables, which will be considered as explanatory research.

3.1.2 Research Approach/ Method

The study used a mixed methods research design to examine macro environmental factors and the project performance at Tibeb Design and Build P.L.C. To address a research question, mixed methods research incorporates aspects of both qualitative and quantitative research. Because mixed approaches include the advantages of both quantitative and qualitative research, they can help obtain a more comprehensive picture than either one alone (George, 2023). The study adopted this methodology to address the research questions in depth. In contrast to either quantitative or qualitative data alone, mixed-methods design combines both types of data to provide a deeper knowledge of the research problem (Creswell, 2015). Thus, their integrated use offers a deeper comprehension of the research problems.

3.2 Population and Sampling

3.2.1 Population

The study was carried out at Tibebe Design and Build P.L.C, and the participants were the management and staff from the chosen company who are familiar with the building projects that are being considered. The total population was 6 senior managers, 12 project managers and coordinators, 34 site/office engineers, 33 architects and 11 others such as supervisors, auditors and foremen who were working on projects in Tibeb Design and Build P.L.C.

3.2.2 Sample design

Sampling design is a mathematical formula that gives the chance that a particular sample will be drawn (Tim, 2021). The sampling design selected is a simple random sampling, which is basically a probability sampling technique used to create a representative subset of the population. This method is where the researcher randomly selects a subset of participants from a population and each member of a population has an equal chance of being selected for a sample.

3.3 Sample size

Taherdoost (2016) pointed out that the right sample size for a study depends on several variables, including the population being studied, the goal of the study, the type of research design, the data analysis technique, and the size of the accessible population. Because of the population limitation in this work, a census approach was the most suitable. A census method is a statistical investigation that gathers information from every element or component of the population (De Vaus and de Vaus, 2013). When the census method is used, all items are covered, and the highest accuracy is obtained. Thus, this study applies a census inquiry to ninety-six respondents who were directly or indirectly engaged in the projects.

Table 3.1: Sample size

Occupation	Target Population
Senior Managers	6
Project managers and coordinators	12
Site and Office Engineers	34
Architects	33
Others	11
TOTAL	**96**

3.4 Method of data Collection

The primary data was gathered through structured interviews and questionnaires from employees and management of the selected organization. The instruments of the quantitative research methodology used will mainly include questionnaires for the project managers, senior managers, site/office engineers, Architects, and others. Additionally, important information were acquired from sources like, books, articles, journals, and other written materials as well as from relevant research materials and various communication channels and the internet to organize the review of related literature.

The questionnaire has four sections: the first section collects the demographic characteristics of the target population; the second section measures the effect of economic factors on construction success; the third section also measures the technological factors affecting the project performance; and the fourth section measures the political factors affecting the construction project performance: and the fifth section contains the project performance measures of the projects that are held by Tibeb Design and Build P.L.C. Likert scale was used in the questionnaire to measure attitudes presented by the respondents. The questions and the format were adopted from Mohamud (2023) and Nguyen and Mohamed (2021).

A guided interview was also used to collect data from the senior managers. The questions for the interview were open ended and closed, the open ended questions helped to have more discussions and the closed ones were intended for a particular responses.

3.5 Data Analysis method

The data that will be obtained from the interview questions will be analyzed using qualitative content analysis. Content analysis can be used to make qualitative inferences by analyzing the meaning and semantic relationship of words and concepts (Luo, 2022). Content analysis is selected because it is flexible, readily understood, and an inexpensive research method, and it provides insight into complex models of human thought and language use. There are two types of content analysis: conceptual and relational content analysis. In this study, conceptual content analysis was used, which focused on the number of times a concept occurs in a set of data and is typically focused on explicit data.

In this study, descriptive statistics was used to summarize and describe quantitative information in meaningful ways, and multiple regression modeling was used for data analysis. Multiple regressions refer to a statistical technique that is used to predict the result of a variable based on the values of two or more other variables.

3.6 Reliability and Validity

Reliability is the degree to which an evaluation tool yields consistent and reliable outcomes. The Cronbach's alpha coefficient was used to assess the questionnaire's reliability. The Cronbach's Alpha coefficient was employed to assess the instruments' reliability. acceptable values of Cronbach's alpha, is ranging from 0.70 to 0.95 (Tavakol & Dennick, 2011). The reliability results were computed by using the statistical package for social scientists (SPSS).

The formula used for the Cronbach's Alpha was:

$$\text{Cronbach's alpha } (\alpha) = \left\lfloor \frac{n}{n-1} \right\rfloor \left[\frac{SD^2 - \sum Variance}{SD^2} \right]$$

Where: n is the number of items on the test

SD is the standard deviation for the set of test scores, and

$\sum Variance$ Is the summation of the variances of the scores for each individual item.

Coefficient alpha ranges from 0 (no internal consistency) to 1 (complete consistency). Scales with coefficient alpha between 0.8 and 0.95 are considered to have very good quality, scales

with coefficient alpha between 0.7 and 0.8 are considered to have good reliability, and coefficient alpha between 0.6 and 0.7 indicates fair reliability (ibid). For this study, the rules of thumb about Strength of Association is based on Hair Jr (2007) categorization (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) The study's reliability findings are shown in the table below.

Table3.2: Cronbach's Alpha Value

Variables	Cronbach's Alpha	Number of Items	Strength Association
Economic factors	.841	9	Very Good
Technological factors	.834	9	Excellent
Political factors	.799	7	Good
Project performance	.729	4	Good

Source: SPSS output, 2024

From the findings of Table 3.2, the independent variables treated have shown results which showed the test of the instrument were overall very good. The economic factor was found with an alpha value 0.841. Then the other variable technological factor was found to have an Alpha value of 0.834 and the third variable political factor had an Alpha value of 0.799. So the results showed that the instrument used for the study was reliable.

Validity refers to both the extent to which a test measures and what it promises to measure (Dubey & Kothari, 2022). This means that the degree to which variances detected by a measuring tool represent actual variations among the subjects of the test is known as validity. The instruments for this research was taken from Mohamud, 2023 and Nguyen & Mohamed, 2021. So the instruments validity was already checked by the researchers and they were satisfying.

3.7 Ethical Consideration

The researcher employed diverse data collection tools from various sources. The greatest effort is made to acknowledge items that have been referred, and the researcher takes responsibility for maintaining the confidentiality of respondents' opinions and the accuracy of the remaining data. After informing people that participation in the study is voluntary and that non-participation would not result in discrimination, the researcher will thus make sure

that all participants are treated with respect and dignity. To guarantee complete confidentiality, identification codes will be given to completed surveys instead of participant names. Respondents' data will only be utilized for the study; it won't be shared with outside parties for any other reason. Thus, the researcher takes into account all ethical viewpoints to the best of their ability.

CHAPTER FOUR

4. RESULT AND DISCUSSION

This chapter presents and discusses the data presentation and analysis, and lastly interpreting the findings of the study. The purpose of this study was to assess the effect of macro environmental factors in the construction industry: A case of Tibeb Design and Build P.L.C. Besides, the study focused to study the cause and effect relation between economic factors, technological factors, political factors, and Project Performance.

In the following sections of the chapter both descriptively and inferentially found results of the study are presented, examined, and interpreted using different statistical and judgmental procedures. Quantitative results are presented and discussed with the help of measurement tools such as; means, and standard deviations so that; conclusion about the situation is drawn. Whereas, conceptual qualitative content analysis have also been employed to summarize and understand the qualitatively found data. To address the above-mentioned objective of the study, data collection instruments such as questionnaires and interviews were deployed.

4.1 Data Presentation

4.1.1 Response Rate

A response rate is the number of actual responses obtained from a specific campaign, and it is usually stated as a percentage (Clardie, 2021). The study distributed a total of 96 questionnaires to the respondents. As presented in Table, Out of the total respondents 79 responses were obtained, accounting to 82.3%response rate, a response of 70% and above is adequate according to Mugenda and Mugenda (2013), hence 82.3 % response rate was satisfactory for data analysis.

Table 4.1: Response Rate

Response	**Total**
Number of questionnaires distributed	96
Number of returned questionnaires	79
Response Rate	**82.3%**

Source: Surrey 2024

4.1.2 Demographic Characteristics of Respondents

The background information of the respondents was important because they comprised of both sexes but of different marital statuses and age groups from various settings. This was intended in order to get a variety of views and unbiased responses which made the study a reality. The information on demographic characteristics of the respondents determined their maturity, level of understanding, knowledge; it includes their gender, age, educational level, experience, and role of the respondent within Tibeb Design and Build P.L.C.

As shown in Table 4.2 it indicates that majority of the respondents 69.6 % were female while minority of the respondent were male 30.4 %, this is not a good representation of sex and shows there is no sex equity. Hence due to the research questions being free of any gender view, it can be concluded that both of their views were considered in the study. The study investigated the composition of the respondents in terms of age. As shown in Table 4.2, the majority (46.8%) of the respondents were aged between 20 and 29 years, while 30.4% were aged between 30 and 39 years, and respondents aged between 40 and 49 years account for 20.3%, including a very low percentage of respondents that age 50 years and older, thus indicating that the age was well distributed, with the youth being the most frequent participants in the study.

From the data shown in Table 4.2, the respondents who have certificates are 5.1%, with a bachelor's degree of 68.3% and a master’s degree of 26.6%. This made the researcher believe that the respondents were educated to the point where they understood the issues related to the influence of the macro environment on project performance. Table 4.2 also indicates the respondent’s role in the organization. From the findings, senior manager’s account for 5.1% of the respondents, while project managers account for 11.4%; site/office engineers are 38%; architects are 34.2%; and others such as foremen, supervisors, and finance account for 11.4% of the respondents. These findings made the researcher believe that the respondents had a level of understanding of the issues related to the study objectives.

An assessment of the respondent’s marital status is also shown in Table 4.2. The biggest percentage of the respondents were found to be single, represented by 54.4%, whereas 44.3% of the interviewees were found to be married, and 1.3% of respondents were widowed. The result implies that the majority were single; they were young men and women who possessed

the current skills and knowledge on the issue with which the research is concerned. In addition, in this study, the researcher disaggregated respondents by marital status because, normally, respondents under marital status tend to have different motives and opinions based on their status.

Table 4.2: Demographic data of respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	55	69.6%
	Female	24	30.4%
	Total	**79**	**100%**
Age	20 - 29 years	37	46.8%
	30 - 39 years	24	30.4%
	40 - 49 years	16	20.3%
	50 years and above	2	2.5%
	Total	**79**	**100%**
Level of education	Certificate	4	5.1%
	Bachelor's Degree	54	68.3%
	Master's Degree	21	26.6%
	Total	**79**	**100%**
Role	Senior manager	4	5.1%
	Project manager	9	11.4%
	Engineer	30	38%
	Architect	27	34.2%
	Other	9	11.3%
	Total	**79**	**100%**
Marital status	Single	43	54.4%
	Married	35	44.3%
	Widowed	1	1.3%
	Total	**79**	**100%**

Source: SPPS output, 2024

The respondents were also requested to indicate the success level of the organization. As shown in table 4.3 blow majority of the respondents represented by 63.3% indicated that the projects were less successful, the other 13.9% replied that the project was successful, 12.7% of the respondents indicated that the projects are not successful and a low percentage which is 10.1% indicated the they are not sure whether the projects are successful or not. The results implied to the researcher that the projects are less successful in the organization which helps the researcher's idea that the project performance is affected by the macro environment.

Table 4.3: Success response

Success	Frequency	Percent
Successful	11	13.9%
Less successful	50	63.3%
Not successful	10	12.7%
Not sure	8	10.1%

Source: SPSS output, 2024

4.2 Data Analysis and Interpretation

There were three types of analysis used: multiple regression analysis, descriptive analysis, and qualitative content analysis. Descriptive analysis is applied to the data to get the necessary descriptive statistics for each variable. Descriptive analysis aids in describing, illuminating, or constructively summarizing data points so that patterns might emerge that satisfy all requirements of the data (Rawat, 2021).

4.2.1 Descriptive Analysis

All the questionnaire's variables have been addressed by many statements. By calculating the mean and standard deviation of the responses, the statements examining the same variable were converted into a variable index for this study. Standard deviation is defined as the square root of the total variance in a data collection, which is a metric used to compare individual observations to the mean (Hair et al., 2013). A high standard deviation implies the observed data is very variable around the mean. This suggests that the data that has been observed is fairly dispersed. A low or small standard deviation, on the other hand, implies

that the majority of the observed data is closely packed around the mean (Hargrave, 2023). In this study, the 5-point Likert scale boundary was used, so response distributions with a sigma less than 1 are regarded as consistent, and response distributions with a sigma more than 1 are regarded as inconsistent. The level of the standard deviation boundary is intended to vary according to the applied range of scale. Therefore, the mean values and standard deviation of the study variables are reported as follows to give an overview of the important constructs under study.

Table 4.4: Mean and std. deviation of dependent and independent variables

Variables	Sample size	Mean	Std. Deviation
Economic Factors (EF)	79	3.46	1.17
Technological Factors (TF)	79	3.28	1.105
Political Factors (PF)	79	3.36	1.162
Project Performance (PPM)	79	3.27	0.915

Source: SPSS output, 2024

As shown in table 4.4 above the dependent and independent variables of the study are listed. The study considered the impact of macro environmental factors which are economic, technological and political factors as independent variable, which is economic factors has a mean value of 3.46 and a standard deviation of 1.17, technological factors has a mean of 3.28 and a standard deviation of 1.105 and political factors has the mean value of 3.36 and a standard deviation of 1.162. The dependent variable which is project performance shows a mean value of 3.27 and a standard deviation of 0.915. The mean and standard deviation of each item used in the variables are represented in the section below.

Economic factors

Economic factors include interest rates, tax rates, regulations, policies, wages, and governmental actions, among other internal and external market elements that have an impact on the economy (Wallstreetmojo, 2024). The impact of economic issues on the organization was taken into account in the study. The respondents were asked to score several aspects of economic issues in a series of questions by the researcher. The mean and standard deviation of economic factors are displayed in Table.

Table 4.5: Mean and std. deviation of Economic Factors

Item	Mean	Std. Deviation
Economic factors made possible the availability of sufficient resources when needed.	3.58	1.402
Economic factors facilitate effective resource planning and control for projects.	3.25	1.305
Economic factors make possible the utilization of effective project-specific technology.	3.25	1.335
Project performance is facilitated by good financial management and accountability.	3.34	1.376
The exchange rate while purchasing resources is influenced by economic factors	3.24	1.416
Economic factors enable efficient/timely procurement of materials and equipments.	3.29	1.351
Economic factors enable good forecasting of work plans and estimations of project duration.	3.27	1.248
Economic factors facilitate monitoring, and evaluation can result in projects being implemented on schedule.	3.43	1.162
Economic factors enable the right project organization structure	3.34	1.386
Economic factors	**Mean**	**Median** **S.D**
	3.46	**3.5** **1.17**

Source: SPSS output, 2024

The results imply that the mean of the economic factors is 3.46 and the median is 3.5, which is approximately the same. This shows that economic factors have higher effect on the organizations project performance and that the data set has a normal distribution. The effects of economic factors were measured by nine items. The results showed that the availability of sufficient resources when needed, made possible by economic factors, is high, with a mean of 3.58. The facilitation of effective resource planning and control by economic factors was also indicated by the respondents, with a mean of 3.25 and a standard deviation of 1.305. Economic factors bringing effective project-specific technology were responded to by an average mean of 3.25 and a standard deviation of 1.335. The results also showed that economic factors have a moderate impact on the exchange rate, timely procurement, project schedule, and organizational structure were responded to with average mean values. Akanni

et al., (2015) also pinpoint that considering economic factors is useful for proper management and prevention of cost and time overrun.

- **Economic factors and sufficient resource provision**

‘Economic factors and sufficient resources play crucial roles in the construction industry. The availability of financial resources, skilled labor, raw materials, and infrastructure development are key determinants of construction growth and success. So economic stability, government policies, foreign investments, and access to funding also have a significant impact on construction projects.’

- **Economic factor and use of project specific technology**

‘The availability of financial resources, market demand, government policies, and investment incentives all influence how technology is developed, the financial resources available to an organization determine its ability to invest in technology; economic considerations such as cost-effectiveness and return on investment influence decisions regarding technology adoption; and economic factors such as competition and industry dynamics compel organizations to embrace technology to stay competitive. In conclusion, economic factors are instrumental in enabling organizations to leverage technology effectively, driving innovation, productivity, and competitiveness.’

- **Economic factors enabling good project resources planning**

‘Proper financial management is essential for ensuring that projects are completed on time, within budget, and to the required quality standards. Integrating economic considerations into every stage of the project lifecycle are also important because it involves predicting the costs associated with labor, materials, equipment, overheads, and other expenses.’

- **Financial accountability and success of project**

‘Good financial management ensures that resources are allocated efficiently, costs are controlled, and financial risks are minimized. Accountability also ensures that stakeholders are responsible for their actions and decisions, which leads to transparency and trust among project participants.’

Technological factors

Technological factors refer to the external pressures resulting from technological breakthroughs and their use in diverse industries that impact a company's operations and

performance (Anderson, 2023). The study examined the effect of technological factors on the organization's project performance. The respondents were required to rate various technological factors that have an impact on their organization. Table below shows the technological factors' mean and standard deviation.

Table 4.6: Mean and std. deviation of Technological Factors

Item	Mean	Std. Deviation
Technology enables the productivity enhancement of communication between project participants	3.34	1.208
Technology ensures a reduction in project delays	3.42	1.374
Technology ensures increased awareness of project issues among all parties	3.22	1.288
Technology eases access to and retrieval of project information	3.22	1.288
Technology avoids delays due to the timely arrival of updated drawings and documents.	3.42	1.392
Technology ensures a reduction in visits to sites and travel time to meetings.	3.44	1.318
Technology ensures avoiding drawing mistakes	3.38	1.39
Technology enables the sharing and exchanging of project information.	3.29	1.397
Technology ensures the automation of repetitive, routine processes.	3.23	1.386
Technological factors	**Mean**	**Median**	**S.D**
	3.28	**3.5**	**1.105**

Source: SPSS output, 2024

According to Ellis (2024) technological factors can significantly impact an organization's business practices. In Table 4.6 above it shows that, the mean technological factor on the organization is 3.28, and the median technological factor is 3.5. This implies that technological factors within the organization are average. The result of the respondents also shows that technological factors increase communication, reduce project delays, create project awareness, and avoid drawing mistakes with a moderate response in the organization. Additionally, the respondents believed that technology provided information exchange and reduced visits times in the organization moderately. As stated by Crossan & Apaydin (2010), technology trends can affect a business on many levels.

- **Technology reduces project delays**

‘Technology has the potential to help reduce project delays by improving communication, enhancing collaboration, and providing data-driven insights and project management. Overall, technology empowers project teams with the tools and capabilities they need to plan, execute, and monitor projects more effectively, ultimately helping to minimize delays and deliver projects on time and within budget.’

- **Technology improve participants communication**

‘Technology significantly enhances participant communication in projects by providing various tools and platforms that facilitate collaboration, streamline information sharing, and promote real-time interaction by using means like telegram, video conferencing, email, and management software.’

- **Technology guarantee more awareness of project issues**

‘Building Information Modeling (BIM), which is a digital representation of the physical and functional characteristics of a building or infrastructure project, allows architects, engineers, contractors, and other project stakeholders to collaborate, share information, and manage the entire lifecycle of a construction project in a centralized 3D model. Overall, the technology guarantees that all parties are more aware of project issues by enabling real-time communication, centralizing project information, providing automated notifications, offering issue-tracking tools, fostering collaboration, and presenting data in a clear and actionable format.’

Political factors

Political factors include the government, trade and tax laws, broad political concerns, shifts in leadership, laws, and political tendencies (JimMakosCom, 2024). Another factor examined was the political factor. The respondents were asked to rate various political factors, and the mean and standard deviation of these factors are shown in Table below.

Table 4.7: Mean and std. deviation of Political Factors

Item	Mean	Std. Deviation
Good leadership is the heartbeat of any progressive development.	3.48	1.338
Nations with great leaders have made tremendous developmental projects.	3.34	1.319
Servant leaders provide oversight to projects in their regions.	3.42	1.183
Legislators have a great interest in how money is spent on projects in their area of representation.	3.53	1.367
Political stakeholder mapping is an important aspect of the development of a region.	3.11	1.377
Community participation allows the public to learn and view project development from different perspectives.	3.15	1.36
There is a need for governments to undertake political stakeholder mapping for all community projects.	3.25	1.445
Political factors	**Mean**	**Median**	**S.D**
	3.36	**3.5**	**1.162**

Source: SPSS output, 2024

The mean and median political factors in the organization are 3.36 and 3.5. This implies that the political factor is average. Under the results, the respondents indicated that good leadership is average for the progressive development of the organization, and good leaders also bring out developmental projects. The respondents also implied that servant leaders, political stakeholder mapping, and community participation are important for the organization. Akanni et al., (2015) also suggested that government should be responsible in creating a political stability to initiate investors in the construction sector.

- **Good leadership and construction project**

‘Good leadership sets the tone, direction, and culture within an organization or team, guiding individuals toward common goals, fostering collaboration, and driving innovation. Construction managers must also possess leadership qualities based on tasks, teams, organizational environment, manager's skills, project resources, time constraints, and budget.’

- **Nations with great leaders have made developmental projects**

‘Great leaders in nations play a great role in driving and overseeing tremendous developmental projects. Their vision, strategic planning, decision-making abilities, and capacity to inspire and mobilize resources contribute to the success of construction projects.’

- **Servant leaders provide oversight to projects**

Servant leaders provide oversight for projects in their regions by embodying the principles of servant leadership and utilizing their unique approach to leadership. Servant leaders prioritize active listening to team members, stakeholders, and project participants. By understanding the needs, concerns, and perspectives of those involved in the project, they can make informed decisions and guide the project effectively.

Project performance measure

Project performance is an overall assessment of a project's ability to achieve its goals and follow its scope, budget, and timeline (Johnson, 2015). The respondents were asked to rate the budget, time, quality, and client satisfaction performance of the organization. The mean and standard deviation of these factors are shown in Table below.

Table 4.8: Mean and std. deviation of Project Performance Measures

Item	Mean	Std. Deviation
Extent to which the project was delivered on budget	3.1	1.336
Extent to which the project was delivered on time.	3.44	1.238
Extent to which the project's quality goals were met	3.33	1.195
Extent to which project stakeholders achieved their desired project outcomes.	3.44	1.118
Project Performance	**Mean**	**Median**	**S.D**
	3.33	**3.5**	**.91**

Source: SPSS output, 2024

Overall, according to the findings, the respondents replied with a mean of 3.33 and a standard deviation of 0.91 about the project performance of the organization. This also implies an average rate of project performance for the organization and the standard deviation being less than one implies that the responses gather from respondents were similar. From the results, the respondents indicated that projects are delivered on budget with a mean of 3.1 and a standard deviation of 1.336, and projects are delivered on time with a mean value of 3.44 and a standard deviation of 1.238. The respondents also indicated the quality was met with a mean value of 3.33 and a standard deviation of 1.195. It was also implied, with a mean of 3.44 and a standard deviation of 1.118, that stakeholders are satisfied.

4.3 Correlation Analysis

The degree of link between two variables is represented by a correlation, which is a number between -1 and +1. A positive correlation coefficient denotes a positive association, while a negative correlation coefficient denotes a negative or inverse relationship, whereas a correlation coefficient of 0 indicates no relationship between the variables.

The data presented on the economic factors, technological factors, and political factors were computed as independent variables. Then, Pearson's correlations analysis was conducted at 99% confidence interval and 1% confidence level 2-tailed. When it comes to the correlation coefficients of the different constructions, a strong connection is typically represented by a coefficient bigger than 0.7, a moderate correlation by a coefficient between 0.3 and 0.7, and a low correlation by a coefficient smaller than 0.3 (Chou & Yang, 2012). The table below indicates the correlation matrix between the factors economic factors, technological factors, and political factors and the Project performance.

Table 4.9: Correlation matrix

		Economic Factors	**Technological Factors**	**Political Factors**	**project performance**
Economic Factors	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	79			
Technological Factors	Pearson Correlation	.637**	1		
	Sig. (2-tailed)	.000			
	N	79	79		
Political Factors	Pearson Correlation	.710**	.778**	1	
	Sig. (2-tailed)	.000	.000		
	N	79	79	79	
project performance	Pearson Correlation	.635**	.673**	.661**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	79	79	79	79

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

Source: SPSS output, 2024, from correlation analysis

The correlation matrix in table 4.9 shows that economic factors and technological factors had a strong correlation with political factors. This variables had a correlation factor larger than 0.7. Economic factors had a moderate correlation with technological factors, and project

performance. Technological factors also had a moderate correlation with project performance. Political factors had a moderate correlation with project performance. All this associations in the above had correlation coefficients between 0.3 and 0.7, which are representing a moderate association. The positive relation between economic factors and project performance implies that certain economic conditions or indicators have a favorable influence on the successful completion of construction projects. During periods of economic growth, there is typically an increase in demand for new infrastructure projects and residential and commercial buildings. This increased demand leads to more investment in construction projects and also Lower interest rates make borrowing money more affordable for developers and investors. Whereas the positive relation between technological factors and project performance signifies that the adoption and integration of technology like Building Information Modeling (BIM), drones for surveying, project management software, and advanced construction equipment can lead to efficiency, productivity, cost management, risk mitigation, quality assurance, and collaboration & communication which have a beneficial impact on various aspects of project execution and outcomes.

4.4 Regression test assumptions

Regression analysis requires making assumptions in order to demonstrate the validity and reliability of the data obtained. These consist of normality, homoscedasticity, linearity, multicollinearity, independence of residuals, and normality of residuals. To test the regression assumption, a scatter plot of the standardized residuals and a Normal Probability Plot (P-P) of the regression standardized residual were analyzed. In this investigation, there were no significant assumptions broken. The summary of the regression results is followed by an in-depth discussion of assumption testing.

Linearity

To run the multiple regression analysis, the first regression assumption test was to check the independent variables economic factors, technological factors and political factors against the dependent variable (project performance).

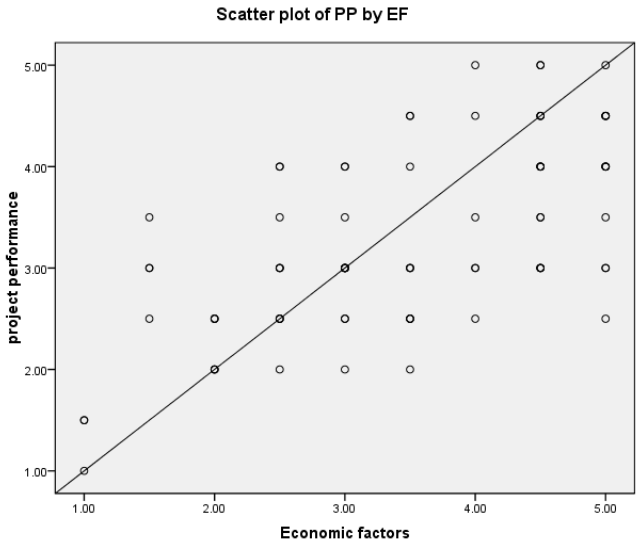


Figure 4.1: Linearity test of Economic factors and Project performance

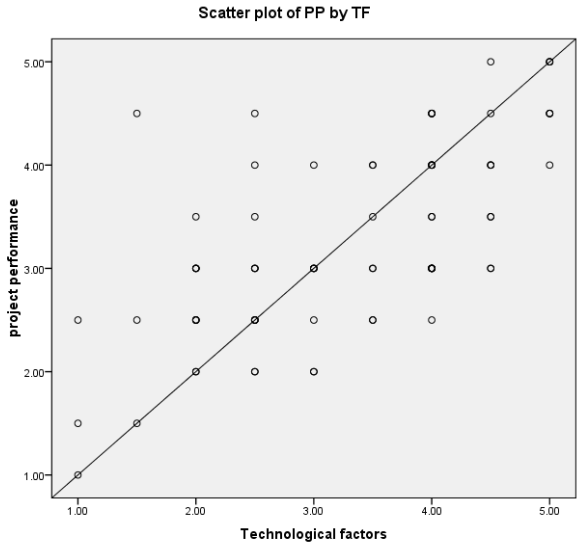


Figure 4.2: Linearity test of Technological factors and Project performance

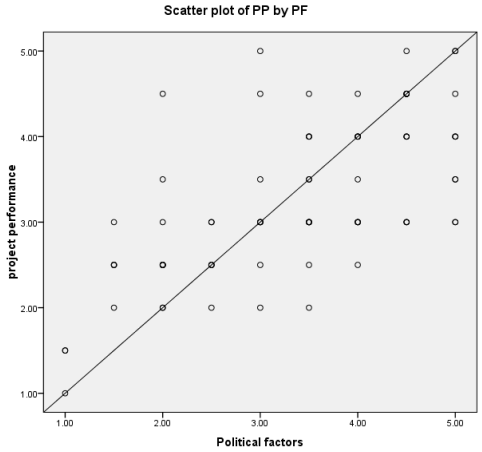


Figure 4.3: Linearity test of Political factors and Project performance

The scatter plot in the previous figures indicates that the plot has settled on a linear line and that residual values were not frequently observed. Therefore, there were no significant assumptions broken in this investigation. So the data in this research met linearity assumption.

Multicollinearity

The second assumption examines if the three independent variable dimensions have strong relationships with one another. Using the variance inflation factor (VIF) and correlation coefficients to assess multicollinearity is the most popular method. According to Fritz, Morris and Richler (2012), tolerance scores should be more than 0.2 and a small correlation should be less than 10. This assumption has been satisfied, according to an analysis of collinearity data, as all VIF scores were less than 10 and tolerance scores were greater than 0.2.

Table 4.10: Multicollinearity test

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.067	.248		4.308	.000		
	EF	.215	.089	.275	2.417	.018	.478	2.094
	TF	.284	.106	.343	2.687	.009	.380	2.632
	PF	.157	.110	.199	1.426	.158	.317	3.152

a. Dependent Variable: project performance measure

Source: SPSS output, 2024

Residual independence

According to the regression analysis assumption, the third test that needed to be performed was to determine whether the residuals were independent (or uncorrelated). This was carried out by looking at the variance inflation factor (VIF) and using the Durbin-Watson test for autocorrelation coefficients. The Durbin-Watson statistic always has a value ranging between 0 and 4. When a value of 2.0 is found, it means that the sample has no autocorrelation. Values below 2 suggest positive autocorrelation, while values above 2 indicate negative autocorrelation. The result for this study showed a 1.952, which is approximately 2 and a good sign for no multicollinearity between the predictors and dependent variables.

Table 4.11: Durbin Watson test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.733[a]	.537	.518	.63569	1.952
a. Predictors: (Constant), political factor, Economic factors, Technological factors					
b. Dependent Variable: project performance measure					

Source: SPSS output, 2024

Homoscedasticity

The other test was homoscedasticity, which depends on the assumption that the residual's variance, or the amount of error in the model, is consistent across the model. It indicates that at each point along the predictor variable (or throughout the linear model), the residuals' spread should be fairly constant.

Plotted below is a graph that contrasts the standardized residuals found with the values the model would predict. Roughly similar residual variation should be observed as the projected values grow (along the X-axis). A random assortment of dots appears as the dot scatter graph when everything is in order. This assumption has likely been broken if the graph has a funnel-shaped appearance.

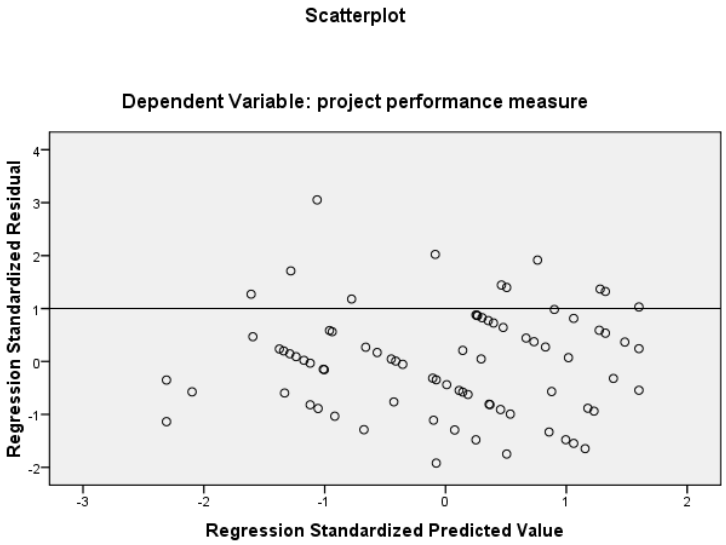


Figure 4.4: Homoscedasticity test

The standardized residuals vs. standardized predicted values plot (above) did not exhibit any overt funneling, indicating that the homoscedasticity assumption had been satisfied.

Normality of residuals

The residual values' normal distribution was the fifth assumption used to test the regression. The model's P-P plot can be used to test this assumption. The closer the dots lie to the diagonal line, the closer to normal the residuals are distributed.

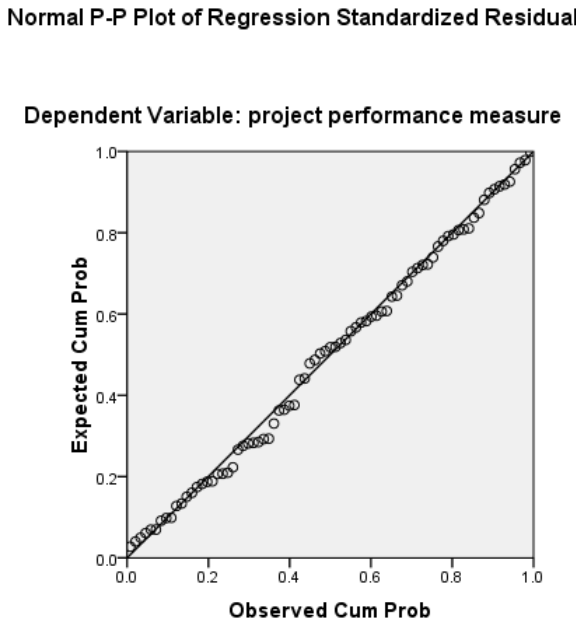


Figure 4.5: P-P plot for the model

For this study, as indicated in Table 4.5, the dots are closer to the diagonal line, which implies that the residuals are normally distributed and the assumption is fulfilled.

4.5 The effect of predicted variables on project performance

Standard multiple regression =.05 (two-tailed) was used in this study to look at how the independent variables affected the project's performance. The analysis's findings show how effectively the three independent variable dimensions can forecast the performance of the project. Furthermore, it shows how much unique variance in the dependent variable, project performance is explained by each of the independent variables. The independent variables in the study were economic factor, technological factor and political factor. The dependent variable was project performance.

Table 4.12: The effect of economic factor, technological factor and political factor on project performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.733[a]	.537	.518	.63569	1.952
a. Predictors: (Constant), political factor, Economic factors, Technological factors					
b. Dependent Variable: project performance measure					

Source: SPSS output, 2024

As previously said, a preliminary examination of the regression assumptions revealed no violations of multicollinearity, outliers, normality, linearity, homoscedasticity, or residual independence. Project performance was considerably predicted by the model, according to the regression analysis. As shown in table 4.16 above, the result of regression analysis multiple coefficients of determination or R square (R^2=0.537) indicates that 53.7% of variance in the measurement (Project performance) function can be explained by economic, technological, and political factors, while the remaining 46.3% are explained by other variables out of this model. The possible explanation for this may be the other factors like demographic factors, socio-cultural factors, ecological factors and other factors beyond the scope of this study.

As the results show, the R-value is greater than the R-squared and adjusted R- squared values, which indicates that the correlation between the observed and predicted values of the dependent variable is higher than the proportion of variance explained by the independent

variables collectively. In such cases, it is suggested that there might be other variables or factors influencing the dependent variable that are not accounted for in the current model. Therefore, it is essential to consider potential additional predictors or interactions.

Table 4.13: The effect of economic factor, technological factor and political factor on project performance ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	35.091	4	11.697	28.946	.000[a]
	Residual	30.307	75	.404		
	Total	65.399	79			

a. Predictors: (Constant), political factor, Economic factors, Technological factors

b. Dependent Variable: project performance measure

Source: SPSS output, 2024

The ANOVA tells us whether the model, overall, results in a significantly good degree of prediction of the dependent variable. As shown in Table 4.16 above the significance result on the ANOVA table is less than 0.001 which is $p< 0.05$, so the overall regression model was significant.

Individual parameter significant test shows how strong an independent variable individually affecting dependent variable. Moreover, on these study variables contribution to prediction of the dependent variable is defined. This can be done via Standardized coefficient Beta. The standardized coefficients mean that "values for each of the different variables have been converted to the same scale so they can be compared". Thus, the next phase requires the function of Beta coefficient (b) or standardized regression coefficient of each predictor or independent variable. The regression coefficient explains the average amount of change in dependent variable that caused by a unit of change in the independent variable. The larger value of Beta coefficient that an independent variable has, brings the more support to the independent variable as the more important determinant in predicting the dependent variable.

Table 4.14: Regression analysis summary for independent variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.067	.248		4.308	.000
	Economic factors	.215	.089	.275	2.417	.018
	Technological factors	.284	.106	.343	2.687	.009
	political factor	.157	.110	.199	1.426	.158

a. Dependent Variable: project performance measure

Source: SPSS output, 2024

Among the three variables, multiple linear regression analysis revealed that political factors showed not significantly associated with project performance. Technological factor has the highest standardized coefficient (β = .343) and the lowest significance (p = .009), which makes it the best predictor. Followed by economic factor which has a standardized coefficient (β = .275) and significance of (p = .018). The nature of the relationship for economic factor and technological factor was positive, which indicates that when economic factors increase project performance also increases and the same is true for technological factors also. This means that the more the economic factors are favorable and the technology use is advanced, project success will be achieved. However this cannot be applied for political factors since the sig>.05.

Accordingly, the three hypotheses which were developed earlier in chapter two were tested based on the regression coefficient data.

Hypothesis 1

H1: Economic factors have significant effect on project performance of projects performed at Tibeb Design and Build.

According to the regression coefficient result for this variable, the projects performed improved as a result of change in the economic factor by assuming all other factors stayed constant. Hypothesis 1 is accepted since this shows economic factors have significant and favorable link with the performance of projects performed at Tibeb Design and Build.

Hypothesis 2

H2: Technological factors have significant effect on project performance of projects performed at Tibeb Design and Build.

The technological factor regression coefficient result was as (β =.343 and P .009) which implied that technological factors has a significant relationship with the performance of the projects performed at Tibebe Design and Build, Hypothesis 2 is also accepted.

Hypothesis 3

H3: Political factors have significant effect on project performance of projects performed at Tibeb Design and Build.

The regression coefficient result of political factor was indicated as (β =.199 and P .158) which entails that political factor has insignificant relation with the projects performed at Tibeb Desin and Build. Therefore Hypothesis 3 is rejected.

Table 4.15 Summary of hypothesis result

Hypothesis	Method used	Result
H1: Economic factors have significant effect on project performance of projects performed at Tibeb Design and Build.	Correlation & Regression	Accepted: (β =.275 and p < 0.05) 95% confidence
H2: Technological factors have significant effect on project performance of projects performed at Tibeb Design and Build.	Correlation & Regression	Accepted: (β =.343 and p < 0.05) 95% confidence
H3: Political factors have significant effect on project performance of projects performed at Tibeb Design and Build.	Correlation & Regression	Rejected: (β =.199 and p > 0.05) 95% confidence

Source: SPSS output, 2024

CHAPTER FIVE

5. SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

This chapter mainly deals with summary of the findings, the conclusion drawn from the findings and recommendations made. The aim of the study was to determine the impact of macro environmental factors on construction project performance.

5.1 Summary of Major Findings

This study was performed to identify the impact of macro environmental factors on construction project performance in Tibeb Design and Build P.L.C. It assessed the three macro environmental factors which are: economic factors, technological factors and political factors on the project performance of the organization. The data collected through the questionnaire was analyzed using descriptive and multiple linear regression analysis. While the data collected through the interview was analyzed using conceptual qualitative concept analysis.

According to the findings, the economic factor, technological factor and political factor had correlation with the project performance as per the analysis made on the person correlation analysis.

The study aimed to evaluate the impact of economic factors on project performance within Tibeb Design and Build P.L.C. The findings revealed that economic factors had a high influence on the organization's performance, with a mean score close to 3.5. This indicates that economic considerations play a crucial role in shaping project outcomes within the company. In contrast to the economic factors, the study found that technological factors had an average response within the organization. Similarly, the research indicated that political factors also received an average response from the organization. This implies that political dynamics may have a moderate impact on project performance within Tibeb Design and Build, but they are not as pronounced as economic factors. The findings also revealed that the performance of projects within the organization had an average performance.

The study also undertook a correlation analysis to find the correlation between the independent variables (economic factors, technological factors and political factors) and project performance. The correlation result showed that all the independent variables have a positive, moderate and significant correlation and with project performance. In addition the independent variables, economic factor (.710) and technological factor (.778) had a strong correlation with political factors.

Furthermore, the study conducted regression analysis to learn the impact of each independent variable on project performance. Based on the result of the regression analysis, technological factors has significant impact and the highest positive (β=.343, p = .009) effect on project performance. Economic factors was also found to have significant impact and positive effect (β= .275, p = .018) on project performance. However, result presented in the study also showed that the effect of political factors is not significant on project performance.

5.2 Conclusion of the Study

Macro environmental forces can have a big impact on the construction project and affect various components of the project. Many factors, including socio-cultural patterns, economic conditions, political stability, and advancements in technology, could impact the challenges or successes encountered in a construction project. It will therefore be crucial to conduct study in this field.

To define the research issue, create a research model, and pinpoint the research gaps, a critical literature review was carried out. The macro environmental factors and project performance were the main topics of the review. It suggested that these important factors might be related to one another. This led to the formulation of the three research questions. To address the research questions, a research model was created. There are two primary components to it: PP and MEF. Three variables—EF, TF, and PF—represent the MEF.

The primary objective of the study was to assess the impact of economic factors on the performance of the project at Tibeb Design and Build P.L.C. The study revealed that economic factors play a significant role in shaping the outcomes of projects within the organization. The findings suggest that economic conditions, such as market fluctuations, inflation rates, interest rates, and overall economic stability, have a direct impact on how well projects are executed and completed at Tibeb Design and Build P.L.C. The results indicate that changes in economic factors can lead to variations in project timelines, costs, quality, and

overall project performance. In conclusion, the study underscores the critical importance of considering economic factors when planning and executing projects at Tibeb Design and Build P.L.C. By understanding how these external variables can impact project outcomes, the organization can enhance its resilience and effectiveness in navigating dynamic economic landscapes. The second aim of the research was to evaluate how technology is affecting project performance. The study also showed that the adoption and integration of technology can significantly influence an organization's performance, efficiency, competitiveness, and overall success.

5.3 Recommendations of the Study

This study's primary focus was the construction industry. In accordance with the main findings, the following recommendations are made:

- Macro environmental factors should be highly valued because they help organizations anticipate risks, take opportunities, adjust to shifting market conditions, maximize resource use, maintain regulatory compliance, and satisfy stakeholder expectations.
- Economic factors play a vital role in shaping the business environment and influencing decision-making processes. Economic stability and growth contribute to a favorable environment for projects to thrive, leading to improved performance metrics such as on-time delivery, cost-effectiveness, and quality outcomes. Thus, organizations should consider various economic factors that can significantly impact their operations and overall success.
- It has been observed that project performance is improved when cutting-edge technology tools and systems are integrated into project management. By taking advantage of technologies such as project management software, data analytics tools, communication platforms, and automation solutions, an organization can streamline processes, improve collaboration among team members, increase efficiency, reduce errors, and ultimately deliver projects on time and within budget. So the organization should think about incorporating new technology into the initiatives.

5.4 Research Limitation and Areas of Future Research

5.4.1 Limitation of the study

One of the primary limitations was the lack of relevant data on the macro environmental factors that could influence construction projects, and the data available were not always up-to-date or accurate. The respondents' reluctance to cooperate in filling out questionnaires and giving information was another challenge for the study. The other limitation is that the findings from the study on the macro environment's impact on construction projects which is conducted on a single company cannot be generalized across different contexts or for all construction companies.

5.4.2 Suggestions for future research

- Because the data sample size was restricted to construction projects under Tibeb Design and Build P.L.C, further research is necessary to fully understand how macro environmental factors affect project performance across the board in the industry. This methodology could be applied to other industry organizations in future research.
- The main focus was to find out the impact of macro environmental factors on project performance and the variables used to measure the macro environmental factors were only economical, technological and political factors. Other than these three factors there are more variables of the macro environment. So other studies can explore the other factors.
- The most crucial aspect of this research is that reliable information was obtained from just project participants who were interviewed. People performing routine jobs for the company should also be approached as part of the study criteria that should be broadened beyond the box.

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ANNEX I



QUESTIONNAIRE FOR SENIOR MANAGERS, PROJECT MANAGERS, SITE/OFFICE ENGINEERS, ARCHITECTS AND OTHERS.

Dear respondents,

I am attending a postgraduate program in Project Management at Addis Ababa University School of Commerce (AAUSC). As partial fulfillment for the degree, I am conducting a research study on "The impact of macro environmental factors on the performance of construction project". I would appreciate it if you could spare a few minutes of your time to answer the following questions regarding how the macro environmental factors affect project performance. Any information you supply will be handled in the strictest confidence and used only for academic purposes.

INSTRUCTION:

- Please do not write your name on the questionnaire.
- Please read each questions carefully before answering.
- Kindly answer all the questions by ticking or filling in the spaces provided.

SECTION A: BACKGROUND INFORMATION

1. Please indicate your gender

Male ☐ Female ☐

2. What is your age?

19 yrs or less	20 – 29 yrs	30 – 39 yrs	40 -49 yrs	50yrs and above

3. Marital status: Single ☐ Married ☐ Widow ☐ Widower ☐

4. What is your level of education attained?

None	Primary level	Secondary level	Certificate	Bachelor degree	Master's degree

5. What is your designation?

Senior manager ☐ Project ma ☐ er ☐ ject staff other _____

6. How would you rate the success of construction project in Tibeb Design and Build

Very successful ☐ successful ☐ Less successf ☐ Not successf ☐ Not ☐ sure

INSTRUCTIONS

Indicate the extent to which you agree and disagree with the statements on the items in each of the section by ticking (√) the appropriate number listed in the tables.

Strongly Agree (SA)	Agree (A)	Undecided	Disagree (D)	Strongly Disagree (SD)
1	2	3	4	5

SECTION B:

A	**Effect of economic factor on the success of construction projects in Tibeb Design and Build**	**SA**	**A**	**U**	**D**	**SD**
A1	Do economic factors enable the provision of adequate resources when required?					
A2	Do economic factors help projects with efficient resource planning and control?					
A3	Does the application of efficient project-specific technology depend on economic factors?					
A4	Is project performance facilitated by good financial management and accountability?					
A5	Do economic factors affect the exchange rate used to buy resources?					
A6	Due to economic factors does it make it possible to					

	purchase supplies and equipment efficiently and timely?					
A7	Do economic factors make it possible to estimate work plans and project durations accurately?					
A8	Could the facilitation of economic factors lead to projects being implemented on schedule in terms of monitoring and evaluation?					
A9	Does the appropriate project organization structure depend on economic factors?					

What other factors do you think affects the success of projects in the company**?**

_____

_____

_____

_____

In your opinion, what do you think should be done to enhance success of construction projects in the company?

_____

_____

_____

SECTION C:

B	**Effect of technological factor on the success of construction projects in Tibeb Design and Build**	**SA**	**A**	**U**	**D**	**SD**
B1	Does technology allow participants in a project to communicate more productively with one another?					
B2	Are project delays decreasing as a result of technology?					
B3	Is everyone involved in the project more aware of problems because of technology?					
B4	Does technology make it easier to retrieve and access project data?					
B5	Is technology preventing the delay caused by the timely arrival of drawings and documents?					

B6	Does technology guarantee a decrease in the amount of time spent travelling to meetings and visiting sites?					
B7	Does technology ensure that errors in the drawing are avoided?					
B8	Can project information be exchanged and shared because of technology?					
B9	Does technology guarantee that routine and repetitive processes will be automated?					

SECTION D:

C	**Effect of political factors on the success of construction projects in Tibeb Design and Build**	**SA**	**A**	**U**	**D**	**SD**
C1	Is effective leadership the foundation of any progressive development?					
C2	Do nations with outstanding leaders have outstanding development initiatives?					
C3	Do servant-leaders supervise projects inside their respective regions?					
C4	Are legislators particularly interested in how money is spent on projects in their area of representation?					
C5	Is the mapping of political stakeholders a crucial component in the development of a region?					
C6	Does community involvement give the general people the opportunity to understand and see projects from various angles?					
C7	Is it necessary for all community projects that governments map the political stakeholders involved?					

SECTION E

How would you rate the organization's project performance in the following areas? Please tick
(1=Very Low, 2=Low, 3=Moderate Contribution, 4=High, and 5=Very High)

D	**Performance of construction projects in Tibeb Design and Build**	**1**	**2**	**3**	**4**	**5**
D1	Extent to which the project was delivered on budget					
D2	Extent to which the project was delivered on time					

D3	Extent to which the project's quality goals were met					
D4	Extent to which project stakeholders achieved their desired project outcomes.					

THANK YOU VERY MUCH FOR YOUR COOPERATION

INTERVIEW QUESTIONS FOR SENIOR MANAGERS

EFFECT OF ECONOMIC FACTORS ON SUCCESS OF CONSTRUCTION PROJECTS

1. What's your view on economic factors enabling the provision of sufficient resources as and when required?
2. Could you please comment on the economic factors enabling the use of efficient project-specific technology?
3. What's your view on economic factors enables good Project resource planning and controlling
4. How good financial accountability and management enables success of projects
5. How goes economic factors effects of the exchange rate on acquisition of resources
6. How does an economic factor enable efficient/timely procurement of materials and equipments
7. How economic factor does enable good forecasting of work plan/ estimation project duration
8. How economic factors enable the right project organization structure
9. How economic factors enable monitoring and Evaluation can lead to timely implementation of projects

TECHNOLOGICAL FACTORS ON SUCCESS OF CONSTRUCTION PROJECTS

1. How do you think technology reduce project delays?
2. How, in your opinion, does technology improve the productivity of participant communication in projects?
3. How does technology facilitate project information retrieval and access?
4. How does technology guarantee that all parties are more aware of project issues?
5. How technology prevents delays brought on by timely delivery of updated documentation and drawings?
6. How does technology reduce the amount of time spent going to meetings and visiting sites?
7. How technology guarantees not to make mistakes when drawing?
8. How does technology facilitate the exchange and sharing of project data?
9. How technology facilitates the exchange and sharing of project data?

EFFECT OF POLITICAL FACTORS ON SUCCESS OF CONSTRUCTION PROJECTS

1. How is good leadership the heartbeat of any progressive development?
2. How have nations with great leaders made tremendous developmental projects?
3. How do servant leaders provide oversight for projects in their regions?
4. How do legislators have a great interest in how money is spent on projects in their area of representation?
5. How is political stakeholder mapping an important aspect of the development of a region?
6. How does community participation allow the public to learn and allow them to view project development from different perspectives?

THANK YOU VERY MUCH FOR YOUR COOPERATION